

2/9/23, 4:35 PM

Gmail - Fwd: Request for additional information requirement for power purchase true up for FY 2016-17 to FY 2022-23



Rac Tsspdcl &lt;ractsspdcl@gmail.com&gt;

**Fwd: Request for additional information requirement for power purchase true up for FY 2016-17 to FY 2022-23**

1 message

**diripc@tssouthernpower.com** <diripc@tssouthernpower.com>

Sat, Jan 21, 2023 at 4:57 PM

To: ractsspdcl &lt;ractsspdcl@gmail.com&gt;

Director/IPC&RAC  
TSSPDCL,Mint Compound,  
9493037867

**From:** "CMD TSSPDCL" <cmd@tssouthernpower.com>**To:** diripc@tssouthernpower.com**Sent:** Saturday, January 21, 2023 4:52:54 PM**Subject:** Fwd: Request for additional information requirement for power purchase true up for FY 2016-17 to FY 2022-23**From:** "Nagaraj Naram" <secy@tserc.gov.in>**To:** "CMD TSSPDCL" <cmd@tssouthernpower.com>**Sent:** Saturday, January 21, 2023 4:52:19 PM**Subject:** Request for additional information requirement for power purchase true up for FY 2016-17 to FY 2022-23

Sir,

Please find as attachment request for additional information requirement for power purchase true up for FY 2016-17 to FY 2022-23. The information may be sent at the earliest.

Regards,  
Nagaraj Naram,  
Commission Secretary,  
Telangana State Electricity Regulatory Commission,  
(Off) 040-23397625  
Mob 8332968809



Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

2/9/23, 4:35 PM

Gmail - Fwd: Request for additional information requirement for power purchase true up for FY 2016-17 to FY 2022-23



**TSSPDCL Additional informatin on PP true-up.docx**

21K

**Additional information requirement in the matter of Power Purchase True up petitions for FY 2016-17 to FY 2021-22 and Provisional True up for FY 2022-23:**

*To be submitted in six (6) nos. printed copies and digital copy (word/pdf/excel)*

**I. Sales information:**

- (1) TSSPDCL to submit monthly Category wise sales from FY 2016-17 to 2022-23 in excel format.
- (2) TSSPDCL to submit actual voltage wise losses from FY 2016-17 to 2022-23 in excel format.
- (3) TSSPDCL to submit Station wise energy availabilities and energy despatches from FY 2016-17 to 2022-23 in excel format.
- (4) TSSPDCL to submit actual Station wise fixed cost, variable cost, income tax and other cost from FY 2016-17 to 2022-23 in excel format.
- (5) TSSPDCL to submit invoices submitted by each generator from FY 2016-17 to 2022-23 in excel format.
- (6) TSSPDCL to submit the details of additional energy procured along with cost to meet the power demand in the State from FY 2016-17 to 2022-23 in excel format.
- (7) TSSPDCL to submit calculation sheets of the power purchase true-ups from FY 2016-17 to 2022-23 in excel format.
- (8) TSSPDCL to submit the details of additional payments made towards pension liabilities and justification for payment of such additional amounts from FY 2016-17 to 2022-23.
- (9) TSSPDCL to submit details of PGCIL notified charges along with the invoices from FY 2016-17 to 2022-23.
- (10) TSSPDCL to submit the copies of tariff orders issued by CERC for the contracted CGS for the Control Period from FY 2016-17 to 2022-23.
- (11) TSSPDCL to submit the month wise details of quantum of sale of surplus energy, stations dispatched and cost incurred for sale of such surplus energy, rate at which the energy is sold for the period from FY 2016-17 to FY 2022-23.
- (12) TSSPDCL to submit the details of funds received from Government of Telangana under UDAY scheme as equity infusion, as loss funding and as additional support with supporting documents.

1. TSSPDCL to submit monthly Category wise sales from FY 2016-17 to 2022-23 in excel format.

The Monthly Category wise sales from FY 2016-17 to 2022-23 are herewith attached in the excel format as "PP ADDL INFO REPLY 1 2 3 and 4.xls" with sheet name "Monthly Category wise sales".

2. TSSPDCL to submit actual voltage wise losses from FY 2016-17 to 2022-23 in excel format.

The Annual actual voltage wise losses for FY 2016-17 to 2022-23 are attached in the excel workbook "PP ADDL INFO REPLY 1 2 3 and 4.xls" with sheet name "Annual Voltage wise losses".

3. TSSPDCL to submit Station wise energy availabilities and energy dispatches from FY 2016-17 to 2022-23 in excel format

The Station wise energy availabilities and energy dispatches from FY 2016-17 to 2022-23 are attached in the excel workbook "PP ADDL INFO REPLY 1 2 3 and 4.xls" and with sheet name "Energy Availd & Dispatched".

4. TSSPDCL to submit actual Station wise fixed cost, variable cost, income tax and other cost from FY 2016-17 to 2022-23 in excel format.

The actual station wise fixed cost, variable cost, income tax and other costs from FY 2016-17 to 2022-23 are attached in the excel workbook "PP ADDL INFO REPLY 1 2 3 and 4.xls" with sheet name Costs.

5. TSSPDCL to submit invoices submitted by each generator from FY 2016-17 to 2022-23 in excel format.

The Invoices submitted by each generator (except NCE) from FY 2016-17 to 2022-23 (up to January'2023) is enclosed as Annexure – A.

6. TSSPDCL to submit the details of additional energy procured along with cost to meet the power demand in the State from FY 2016-17 to 2022-23 in excel format.

TSDISCOMs have procured the power through short term purchase orders and through Power Exchanges to meet the power demand in the state. The Details are enclosed as Annexure – B.



7. TSSPDCL to submit calculation sheets of the power purchase true-ups from FY 2016-17 to 2022-23 in excel format.

The Calculation Sheets of power purchase true-ups from FY 2016-17 TO 2022-23 are attached in the excel format as "Working Sheets.xls".

8. TSSPDCL to submit the details of additional payments made towards pension liabilities and justification for payment of such additional amounts from FY 2016-17 to 2022-23

Additional Interest on pension bonds claimed by TSGENCO in monthly invoices were admitted by TSDISCOMs to the extent as approved by Hon'ble TSERC from time to time and details are enclosed as Annexure-C.

9. TSSPDCL to submit details of PGCIL notified charges along with the invoices from FY 2016-17 to 2022-23.

The details of PGCIL notified charges along with the invoices from FY 2016-17 to 2022-23 are enclosed as Annexure – D.

- 10.TSSPDCL to submit the copies of tariff orders issued by CERC for the contracted CGS for the Control Period from FY 2016-17 to 2022-23.

The copies of tariff orders issued by CERC for the contracted CGS for the control period from FY 2016-17 to 2022-23 are enclosed in soft copy as Annexure – IV.

- 11.TSSPDCL to submit the month wise details of quantum of sale of surplus energy, stations dispatched and cost incurred for sale of such surplus energy, rate at which the energy is sold for the period from FY 2016-17 to FY 2022-23.

The month – wise details of quantum of sold through Power Exchanges and average rate for the period from FY 2016-17 to FY 2022-23 (up to January, 2023) are enclosed as Annexure – E.

- 12.TSSPDCL to submit the details of funds received from Government of Telangana under UDAY scheme as equity infusion, as loss funding and as additional support with supporting documents.

**a. Debt Taken Over:**

- The Government of Telangana need to take over 75% of debt as on 30.09.2015 i.e., Rs. 5,550.21 Cr ( $7,391.80 \times 75\% = 5,550.21$  Cr)
- Out of which an amount of Rs. 4, 876.38 Cr released.
- And, the balance amount of Rs. 673.38 Cr were adjusted /covered as Additional Equity infusion.

**b. Loss Taken Over:**

Loss to be taken over in the year	Loss to be taken over		Amount in Crores (Grant)	Remarks
2017-18	5% loss of 2016-17	4700.22 X 5%	235.00	Recognised and received in 2017-18
2018-19	10% loss of 2017-18	3924.78 X 10%	392.00	Recognised in 2021-22 and Received in 2022-23
2019-20	25% loss of 2018-19	4967.27 X 25%	1,242.00	
2020-21	50% loss of 2019-20	4940.25 X 50%	2,470.00	
2021-22	50% loss of 2020-21	4245.96 X 50%	2,124.00	
2022-23	50% loss of 2021-22	626.80 X 50%	313.00	To be recognised in 2022-23 and received in 2022-23
<b>Total Revenue Grant under UDAY</b>			<b>6,776.00</b>	

The supporting documents of the UDAY scheme are attached as "UDAY Supporting Documents.PDF".

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

## Monthly Category wise sales from FY 2016-17 to 2022-23

2016-17

Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total
<b>LT Category</b>	<b>1566.65</b>	<b>1512.49</b>	<b>1294.52</b>	<b>1431.78</b>	<b>1780.04</b>	<b>1412.38</b>	<b>1632.41</b>	<b>1467.09</b>	<b>1537.69</b>	<b>1526.01</b>	<b>1543.37</b>	<b>1791.06</b>	<b>18495.50</b>
Category I (A&B) - Domestic	767.83	696.70	614.17	584.17	603.57	541.49	625.05	564.93	559.82	540.86	595.94	744.97	7438.90
Category II (A,B,C & D) - Non-domestic/Commercial	220.95	203.62	190.15	182.09	189.48	166.24	184.41	174.72	177.33	174.35	186.65	217.72	2267.73
Category III - Industrial	68.70	67.76	65.95	66.36	66.71	58.46	63.64	68.57	75.49	76.76	69.99	72.69	823.07
Category IV (A&B) - Cottage Industries & Agrobased Ind.	0.82	0.81	0.82	0.86	0.73	0.77	0.82	0.75	0.90	0.70	0.86	0.89	9.72
Category V (A, B & C) - Irrigation and Agriculture	443.82	483.30	382.31	536.48	856.23	583.22	690.09	589.90	655.40	666.20	623.66	686.61	7177.22
Category VI (A & B) - Local Bodies, St. Lighting & PWS	57.75	55.40	55.43	56.05	57.27	55.98	63.29	62.69	63.25	62.10	60.66	61.11	710.97
Category VII (A & B) - General Purpose	5.62	4.76	5.54	5.61	5.87	5.08	4.98	5.42	5.35	4.86	6.05	6.88	66.02
Category VIII - Temporary Supply	0.15	0.15	0.15	0.16	0.18	0.14	0.13	0.11	0.15	0.17	0.17	0.20	1.87
<b>HT Category at 11 KV</b>	<b>411.69</b>	<b>378.15</b>	<b>394.39</b>	<b>368.15</b>	<b>368.31</b>	<b>374.45</b>	<b>355.40</b>	<b>382.61</b>	<b>368.92</b>	<b>363.64</b>	<b>371.17</b>	<b>374.85</b>	<b>4511.72</b>
HT-I Industry Segregated	262.86	237.60	255.66	244.50	242.90	243.90	228.56	242.10	247.32	249.60	247.45	242.14	2943.59
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-II - Others	132.80	127.30	125.68	112.07	112.92	116.73	113.28	118.71	107.30	101.57	110.22	118.78	1397.35
HT-III Airports, Railway and Bussstations	0.55	0.50	0.53	0.45	0.43	0.43	0.46	0.54	0.44	0.43	0.44	0.51	5.72
HT-IV A Govt Lit Irrigation	1.11	0.10	0.08	0.35	1.56	2.06	0.75	8.30	1.46	1.09	0.82	0.68	18.37
HT-IV B - CP Water Supply Schemes	2.45	2.15	2.31	2.06	1.86	1.90	2.96	3.42	2.87	2.76	2.65	2.47	29.86
HT-VI Townships and Residential Colonies	8.67	7.88	7.69	6.41	6.24	6.78	6.65	6.61	6.43	6.30	6.78	7.38	83.84
HT-VII - Temporary Supply	3.24	2.60	2.44	2.31	2.40	2.64	2.73	2.93	3.11	2.89	2.81	2.89	32.99
HT - RESCOs													0.00
<b>HT Category at 33 KV</b>	<b>408.27</b>	<b>374.15</b>	<b>342.04</b>	<b>294.70</b>	<b>287.24</b>	<b>299.09</b>	<b>390.59</b>	<b>393.07</b>	<b>353.32</b>	<b>340.40</b>	<b>313.28</b>	<b>316.27</b>	<b>4120.43</b>
HT-I Industry Segregated	346.62	315.95	281.04	240.70	228.16	241.93	343.95	337.78	300.74	290.00	260.70	263.17	3452.75
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-II - Others	54.47	53.86	56.78	50.41	53.95	50.81	49.15	48.62	47.56	44.87	47.26	48.48	606.22
HT-III Airports, Railway and Bussstations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-IV A Govt Lit Irrigation	0.53	0.24	0.31	0.44	1.85	3.01	1.87	3.00	1.65	2.54	2.06	0.96	18.46
HT-IV B - CP Water Supply Schemes	0.01	0.01	0.01	0.01	0.01	0.01	0.27	0.25	0.22	0.06	0.01	0.01	0.86
HT-VI Townships and Residential Colonies	4.64	4.09	3.91	3.14	3.27	3.34	3.36	3.42	3.16	2.93	3.26	3.65	42.15
HT-VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT - RESCOs													0.00
<b>HT Category at 132 KV</b>	<b>261.79</b>	<b>217.78</b>	<b>212.36</b>	<b>188.72</b>	<b>261.37</b>	<b>298.00</b>	<b>282.82</b>	<b>259.33</b>	<b>231.09</b>	<b>220.53</b>	<b>223.13</b>	<b>231.15</b>	<b>2888.07</b>
HT-I Industry Segregated	196.00	160.70	154.18	141.20	142.87	151.32	157.81	176.59	160.01	170.05	146.44	156.13	1913.29
HT-I (B) Ferro-Alloys	12.20	14.66	16.92	14.38	13.18	14.56	12.93	18.63	17.08	4.85	6.40	6.15	161.94
HT-II - Others	5.80	6.17	6.45	5.59	5.10	4.97	4.85	4.86	4.70	4.17	5.07	5.33	63.05
HT-III Airports, Railway and Bussstations	5.02	4.92	5.45	5.02	4.97	4.92	4.99	4.89	4.21	3.91	4.13	4.47	56.90
HT-IV A Govt Lit Irrigation	31.27	19.86	17.21	12.46	84.03	109.78	90.21	41.41	31.66	23.34	47.62	45.83	554.68
HT-IV B - CP Water Supply Schemes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-V (A) Railway Traction	11.49	11.48	12.15	10.07	11.22	12.46	10.99	11.93	12.40	13.16	12.43	12.20	141.88
HT-V (B) HMR	0.00	0.00	0.00	0.00	0.00	0.00	1.04	1.04	1.04	1.04	1.04	1.04	6.22
HT-VI Townships and Residential Colonies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT - RESCOs													0.00
<b>Total</b>	<b>2648.40</b>	<b>2492.57</b>	<b>2243.30</b>	<b>2283.35</b>	<b>2696.96</b>	<b>2383.92</b>	<b>2669.22</b>	<b>2502.10</b>	<b>2491.03</b>	<b>2450.58</b>	<b>2450.95</b>	<b>2713.33</b>	<b>30015.72</b>

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

2017-18													
Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total
LT Category	1944.62	1774.13	1399.46	1874.67	2081.71	1982.50	1589.55	1538.58	1786.11	1645.08	1632.50	1984.79	21233.70
Category I (A&B) - Domestic	793.27	841.61	630.23	621.75	643.28	617.95	608.80	535.98	553.40	532.53	582.21	755.85	7716.86
Category II (A,B,C & D) - Non-domestic/Commercial	230.75	239.93	198.46	196.83	200.15	191.17	194.32	177.73	182.30	174.87	190.87	232.17	2409.56
Category III - Industrial	72.14	74.72	65.93	68.12	67.00	63.68	68.45	69.71	78.01	70.48	70.14	76.41	844.80
Category IV (A&B) - Cottage Industries & Agrobased Ind.	0.78	0.81	0.75	0.77	0.71	0.71	0.75	0.77	0.82	0.75	0.73	0.83	9.16
Category V (A, B & C) - Irrigation and Agriculture	783.86	555.37	442.58	925.05	1109.80	1052.51	652.77	690.40	905.91	801.82	722.89	853.66	9496.62
Category VI (A & B) - Local Bodies, St. Lighting & PWS	57.52	55.81	55.64	55.87	54.12	50.89	58.60	58.22	59.88	59.15	58.44	58.55	683.69
Category VII (A & B) - General Purpose	6.04	5.60	5.67	6.04	6.40	5.36	5.67	5.54	5.58	5.26	6.03	7.09	70.28
Category VIII - Temporary Supply	0.25	0.27	0.21	0.23	0.25	0.23	0.20	0.23	0.22	0.24	0.19	0.23	2.73
HT Category at 11 KV	437.48	421.40	438.75	393.99	410.26	427.28	376.15	412.19	391.40	404.10	425.24	407.04	4945.28
HT-I Industry Segregated	280.71	267.55	281.42	282.00	271.37	282.66	248.75	278.81	269.81	280.30	292.53	271.26	3287.17
HT-I (B) Ferro-Alloys	0.03	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.03	0.03	0.03	0.17
HT-II - Others	136.67	136.93	140.90	117.95	123.46	127.14	112.81	114.84	105.21	105.27	112.95	115.26	1449.38
HT-III Airports, Railway and Bussstations	0.47	0.45	0.47	0.40	0.41	0.42	0.40	0.39	0.35	0.38	0.38	0.42	4.93
HT-IV A Govt Lilt Irrigation	3.47	0.53	0.33	0.74	1.35	2.22	2.54	4.77	3.82	4.95	5.78	5.65	36.37
HT-IV B - CP Water Supply Schemes	3.09	2.90	2.73	2.58	2.71	3.17	2.80	3.78	3.26	3.39	3.73	3.88	38.02
HT-VI Townships and Residential Colonies	9.72	9.86	9.60	7.11	7.67	7.90	6.33	6.92	6.24	6.89	7.05	7.43	92.73
HT-VII - Temporary Supply	3.32	3.17	3.31	3.18	3.28	3.78	2.53	2.68	2.70	2.89	2.78	2.92	36.52
HT - RESCOs													0.00
HT Category at 33 KV	347.23	347.36	356.87	306.86	344.92	384.34	285.31	321.50	286.02	280.72	295.99	307.27	3864.38
HT-I Industry Segregated	283.33	282.05	288.67	249.68	282.04	316.52	226.54	259.79	229.53	226.62	238.30	250.91	3133.97
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-II - Others	56.59	59.10	61.02	51.89	55.10	58.12	52.19	51.51	48.17	46.55	49.60	49.37	639.22
HT-III Airports, Railway and Bussstations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-IV A Govt Lilt Irrigation	1.71	0.37	1.56	1.28	3.28	5.28	3.17	6.58	4.43	3.51	3.98	2.71	37.84
HT-IV B - CP Water Supply Schemes	0.05	0.07	0.12	0.10	0.33	0.20	0.03	0.04	0.10	0.13	0.03	0.02	1.22
HT-VI Townships and Residential Colonies	5.54	5.77	5.51	3.91	4.17	4.23	3.39	3.58	3.79	3.90	4.08	4.25	52.12
HT-VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT - RESCOs													0.00
HT Category at 132 KV	217.38	201.18	205.96	181.99	228.94	293.21	283.74	305.46	293.56	280.28	273.07	219.70	2982.48
HT-I Industry Segregated	150.71	145.06	156.19	128.28	149.01	163.40	134.80	157.95	137.15	141.11	137.75	148.58	1749.98
HT-I (B) Ferro-Alloys	7.78	9.03	11.80	11.31	11.34	10.90	16.42	14.34	11.97	11.24	11.48	9.98	137.60
HT-II - Others	5.99	6.37	6.13	4.97	5.11	5.37	6.05	5.49	10.15	10.16	9.66	9.68	85.13
HT-III Airports, Railway and Bussstations	5.34	5.53	6.09	5.42	5.50	5.91	5.21	5.03	4.34	4.46	4.39	4.53	61.75
HT-IV A Govt Lilt Irrigation	34.80	22.58	11.77	18.45	41.74	92.78	108.74	110.65	110.54	92.39	88.57	27.32	760.32
HT-IV B - CP Water Supply Schemes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-V (A) Railway Traction	12.76	12.62	13.98	13.56	14.24	14.85	12.51	12.01	12.16	13.68	13.97	12.36	158.70
HT-V (B) HMR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.25	7.25	7.25	7.25	29.00
HT-VI Townships and Residential Colonies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT - RESCOs													0.00
Total	2946.71	2744.07	2401.05	2757.50	3063.83	3087.33	2534.75	2577.74	2757.09	2610.19	2626.79	2918.80	33025.84

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

2018-19

Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total
<b>LT Category</b>	<b>1957.59</b>	<b>1813.89</b>	<b>1597.71</b>	<b>2091.10</b>	<b>2210.38</b>	<b>2326.59</b>	<b>2535.84</b>	<b>1934.49</b>	<b>1948.03</b>	<b>1902.56</b>	<b>1958.76</b>	<b>2616.25</b>	<b>24793.18</b>
Category I (A&B) - Domestic	803.09	864.10	718.22	634.80	629.96	676.28	688.56	607.38	555.70	535.84	609.33	798.11	8101.36
Category II (A,B,C & D) - Non-domestic/Commercial	238.03	246.28	225.36	207.01	201.00	211.28	214.06	199.86	184.00	177.24	203.96	249.41	2557.48
Category III - Industrial	72.90	76.67	72.24	71.98	70.10	70.33	71.78	76.52	82.03	76.96	74.93	77.74	894.18
Category IV (A.&B) - Cottage Industries & Agrobased Ind.	0.81	0.83	0.82	0.76	0.74	0.78	0.75	0.75	0.81	0.75	0.77	0.86	9.44
Category V (A & B) - Agriculture	792.47	577.10	532.70	1127.73	1260.36	1317.76	1531.67	1000.51	975.57	1062.50	1020.45	1438.95	12637.78
Category VI (A & B) - Local Bodies, St. Lighting & PWS	43.82	42.19	41.14	41.44	40.87	41.96	41.51	41.06	41.82	41.31	39.82	40.39	497.33
Category VII (A & B) - General Purpose & Religious Places	6.00	6.23	6.57	6.49	6.32	6.80	5.92	6.38	5.73	5.29	6.62	7.34	75.68
Category VIII - Temporary Supply	0.47	0.49	0.65	0.89	1.03	1.40	1.59	2.03	2.38	2.67	2.88	3.45	19.92
Category IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>HT Category at 11 KV</b>	<b>464.07</b>	<b>454.09</b>	<b>478.04</b>	<b>437.11</b>	<b>440.52</b>	<b>447.96</b>	<b>447.28</b>	<b>456.16</b>	<b>433.46</b>	<b>425.38</b>	<b>444.58</b>	<b>438.23</b>	<b>5366.89</b>
HT-I Industry	300.20	286.60	306.84	287.75	291.05	295.90	292.15	300.99	295.66	296.10	305.75	295.63	3544.62
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-II - Others	142.77	146.29	149.68	130.00	129.26	126.87	128.92	127.66	114.22	104.61	112.59	125.15	1538.02
HT-III Airports, Railway and Busstations	0.43	0.47	0.48	0.40	0.39	0.38	0.40	0.40	0.38	0.34	0.34	0.37	4.78
HT-IV A Lit Irrigation & Agriculture	3.45	1.17	0.79	1.09	1.50	4.76	5.48	6.45	2.67	3.68	4.58	4.73	40.35
HT-IV B - CP Water Supply Schemes	3.44	3.26	3.81	4.07	4.42	5.76	6.19	6.38	6.42	6.71	6.81	6.80	64.07
HT-VI Townships and Residential Colonies	9.54	10.33	10.42	8.25	8.00	7.99	8.01	8.10	7.57	7.50	7.61	8.74	102.06
HT - VII - Temporary Supply	4.24	5.97	6.02	5.55	5.90	6.30	6.13	6.18	6.54	6.44	6.90	6.81	72.98
HT- RESCOs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>HT Category at 33 KV</b>	<b>478.12</b>	<b>451.42</b>	<b>479.25</b>	<b>438.76</b>	<b>447.84</b>	<b>450.37</b>	<b>491.70</b>	<b>493.75</b>	<b>439.84</b>	<b>440.51</b>	<b>437.71</b>	<b>442.06</b>	<b>5483.33</b>
HT-I Industry	392.53	370.39	392.04	360.67	366.35	365.71	404.11	402.26	355.81	357.21	349.62	355.34	4472.03
HT-I (B) Ferro-Alloys	2.42	2.57	2.27	2.63	2.16	2.71	3.08	4.04	3.99	4.91	4.51	4.04	39.34
HT-II - Others	65.63	65.56	71.26	64.07	63.83	62.77	62.94	62.56	57.65	54.52	58.23	61.78	781.79
HT-III Airports, Railway and Busstations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-IV A Lit Irrigation & Agriculture	2.16	0.12	0.42	0.05	1.32	3.20	4.32	5.84	2.48	3.96	3.13	1.52	28.52
HT-IV B - CP Water Supply Schemes	1.32	2.89	4.26	3.52	6.32	7.57	9.43	11.63	12.76	13.10	13.86	12.01	98.67
HT-VI Townships and Residential Colonies	5.48	6.50	6.56	4.84	5.17	5.03	4.98	4.98	4.72	4.62	4.87	5.38	63.13
HT - VII - Temporary Supply	0.58	3.39	2.44	2.98	2.69	3.38	2.84	2.45	2.43	2.20	2.48	1.99	29.85
HT- RESCOs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>HT Category at 132 KV</b>	<b>338.42</b>	<b>281.23</b>	<b>284.35</b>	<b>270.91</b>	<b>471.63</b>	<b>489.08</b>	<b>485.69</b>	<b>518.92</b>	<b>444.68</b>	<b>387.30</b>	<b>345.14</b>	<b>382.50</b>	<b>4699.92</b>
HT-I Industry	219.81	215.35	223.97	205.01	203.20	201.96	236.40	236.04	206.19	222.44	210.68	217.61	2598.66
HT-I (B) Ferro-Alloys	9.93	10.43	11.60	15.36	13.31	15.52	14.76	15.63	16.72	16.63	24.61	20.31	184.81
HT-II - Others	4.38	4.44	4.97	4.20	4.16	4.05	3.93	3.89	3.60	2.95	3.54	4.03	48.14
HT-III Airports, Railway and Busstations	5.80	6.11	6.36	5.86	5.89	6.12	6.17	6.01	5.41	5.07	5.70	6.13	70.83
HT-IV A Lit Irrigation & Agriculture	77.20	22.60	13.89	18.92	219.71	235.56	195.85	222.82	178.96	106.45	65.06	98.76	1455.78
HT-IV B - CP Water Supply Schemes	0.00	0.00	0.00	0.00	4.62	4.52	6.09	10.14	10.93	10.64	12.00	13.18	72.12
HT-V (A) Railway Traction	17.69	17.66	18.55	16.81	16.83	17.61	17.50	18.96	18.06	18.13	18.30	17.47	213.57
HT-V (B) HMR	3.61	4.64	5.01	4.75	3.91	3.74	4.99	5.43	4.81	5.06	5.25	5.01	56.21
HT-VI Townships and Residential Colonies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT - VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT- RESCOs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>3230.20</b>	<b>3000.63</b>	<b>2839.35</b>	<b>3237.88</b>	<b>3570.37</b>	<b>3714.00</b>	<b>3960.51</b>	<b>3403.32</b>	<b>3166.01</b>	<b>3155.83</b>	<b>3186.19</b>	<b>3879.04</b>	<b>40343.32</b>

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

2019-20													
Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total
LT Category	2071.16	2110.24	1727.97	1841.21	2113.41	1830.45	1674.25	1594.76	1943.18	2151.63	2163.81	2347.38	23569.45
Category I (A&B) - Domestic	884.88	1043.91	792.47	709.52	712.02	683.04	670.67	623.02	587.79	604.10	620.28	777.95	8709.65
Category II (A,B,C & D) - Non-domestic/Commercial	256.56	285.33	241.30	229.50	218.64	213.82	209.36	206.51	194.34	196.37	205.11	125.23	2582.09
Category III - Industrial	76.25	79.65	71.29	75.36	68.29	65.42	63.79	74.44	81.51	76.33	74.67	39.82	846.82
Category IV (A,&B) - Cottage Industries & Agrobased Ind.	0.85	0.84	0.81	0.81	0.77	0.78	0.77	0.79	0.82	0.65	0.76	0.42	9.08
Category V (A & B) - Agriculture	803.00	649.04	573.29	776.23	1063.16	817.90	677.76	638.62	1027.11	1221.03	1210.79	1360.47	10818.39
Category VI (A & B) - Local Bodies, St. Lighting & PWS	39.60	40.31	38.95	39.09	40.18	39.51	42.54	41.05	41.55	43.00	41.04	37.20	484.03
Category VII (A & B) - General Purpose & Religious Places	6.70	7.46	6.46	7.08	6.99	6.41	5.88	6.69	6.18	5.98	6.68	4.02	76.53
Category VIII -Temporary Supply	3.31	3.70	3.39	3.62	3.36	3.57	3.48	3.64	3.88	4.16	4.47	2.28	42.87
Category IX-Electric Vehicle Charging Stations	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0003	0.0001	0.0005
HT Category at 11 KV	491.41	492.68	515.78	471.68	464.41	464.49	426.82	469.48	461.97	465.10	488.25	467.30	5679.38
HT-I Industry	306.38	303.40	313.59	302.26	300.51	298.35	270.01	302.35	311.82	316.19	328.20	307.74	3660.81
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-II - Others	153.17	160.67	171.93	143.08	136.64	136.23	128.40	136.44	122.81	117.40	128.05	127.31	1664.12
HT-III Airports, Railway and Busstations	0.41	0.45	0.47	0.39	0.36	0.36	0.33	0.33	0.30	0.30	0.32	0.31	4.34
HT-IV A Lit Irrigation & Agriculture	3.71	0.84	0.76	0.74	1.63	5.26	4.03	4.24	2.29	5.98	5.99	6.42	41.89
HT- IV B - CP Water Supply Schemes	8.63	7.57	7.77	8.25	7.21	7.25	7.04	8.16	8.35	8.50	8.50	8.25	95.48
HT-VI Townships and Residential Colonies	11.59	12.50	13.82	9.76	9.09	8.85	8.74	9.10	8.32	8.49	8.76	9.47	118.49
HT - VII - Temporary Supply	7.52	7.25	7.44	7.20	6.97	8.00	7.91	8.53	7.71	7.85	8.03	7.42	91.83
HT- RESCOs													0.00
HT IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.19	0.36	0.33	0.37	0.39	0.40	0.39	2.43
HT Category at 33 KV	493.09	466.94	516.82	482.34	470.07	463.76	412.87	430.54	415.96	420.35	437.75	417.69	5427.97
HT-I Industry	392.07	380.78	401.21	381.49	367.95	359.49	315.50	329.63	322.74	327.06	339.79	321.23	4218.92
HT-I (B) Ferro-Alloys	4.55	4.88	4.47	4.65	4.91	4.04	3.85	2.92	2.46	2.58	2.40	2.34	44.05
HT-II - Others	71.36	74.91	83.57	73.96	73.49	75.21	71.14	74.09	66.07	64.17	70.43	69.55	867.96
HT-III Airports, Railway and Busstations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-IV A Lit Irrigation & Agriculture	0.94	0.59	0.19	0.22	0.93	2.20	1.64	1.47	1.63	2.47	2.97	2.34	17.59
HT- IV B - CP Water Supply Schemes	14.27	13.80	13.72	11.95	12.40	12.75	12.18	13.12	13.06	13.79	13.73	13.95	158.72
HT-VI Townships and Residential Colonies	7.54	8.99	9.43	5.96	5.81	5.80	5.29	5.58	5.26	5.38	5.58	5.98	76.60
HT - VII - Temporary Supply	2.36	2.99	4.03	4.12	4.58	4.27	3.27	3.72	4.74	4.90	2.85	2.30	44.13
HT- RESCOs													0.00
HT IX-Electric Vehicle Charging Stations													0.00
HT Category at 132 KV	361.93	310.66	339.12	313.46	413.09	565.39	483.75	500.82	466.85	477.47	516.61	483.54	5232.49
HT-I Industry	232.58	211.74	225.03	213.29	211.73	195.46	189.71	208.85	209.16	201.80	208.47	195.11	2503.93
HT-I (B) Ferro-Alloys	26.34	20.22	23.21	21.26	17.96	13.30	13.13	10.95	6.61	9.99	14.96	16.02	193.95
HT-II - Others	4.83	5.09	5.51	4.76	4.06	4.23	3.83	4.24	3.46	3.32	3.78	3.72	50.82
HT-III Airports, Railway and Busstations	7.01	7.37	8.50	7.68	7.11	7.46	7.35	7.31	6.69	6.45	7.03	6.46	86.41
HT-IV A Lit Irrigation & Agriculture	50.56	24.21	34.28	24.28	130.01	301.46	226.43	224.67	192.10	207.44	231.59	214.54	1861.57
HT- IV B - CP Water Supply Schemes	15.33	16.25	16.82	15.02	17.50	16.47	18.22	17.79	17.12	18.20	17.93	18.14	204.79
HT-V (A) Railway Traction	18.49	18.61	18.85	20.85	18.32	20.49	18.43	19.86	25.18	23.59	24.66	22.67	250.00
HT-V (B) HMR	6.79	7.17	6.92	6.32	6.40	6.52	6.65	6.95	6.53	6.69	7.19	6.88	81.01
HT-VI Townships and Residential Colonies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT - VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT- RESCOs													0.00
HT IX-Electric Vehicle Charging Stations													0.00
Total	3417.59	3380.52	3099.49	3108.69	3460.98	3324.09	2997.69	2995.40	3287.96	3514.56	3606.42	3715.91	39909.30

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

2020-21														
Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total	
LT Category	1881.74	2021.49	1608.96	2077.18	1912.79	1784.32	1624.18	1417.14	1984.74	2412.80	2310.19	3270.69	24286.22	
Category I (A&B) - Domestic	889.48	1007.14	774.12	787.64	711.48	733.63	716.04	619.75	597.95	616.10	615.98	842.53	8911.84	
Category II (A,B,C & D) - Non-domestic/Commercial	157.24	245.76	166.26	165.38	155.67	171.68	177.68	167.37	169.94	173.35	180.28	229.97	2160.57	
Category III - Industrial	81.52	63.44	63.14	66.77	64.06	70.53	69.91	77.57	87.05	78.66	76.93	80.44	880.01	
Category IV (A.&B) - Cottage Industries & Agrobased Ind.	1.12	0.82	0.76	0.81	0.68	0.81	0.77	0.73	0.81	0.74	0.74	0.82	9.58	
Category V (A & B) - Agriculture	700.88	652.52	557.74	1005.73	937.30	743.72	613.03	504.95	1080.42	1496.25	1389.22	2063.08	11744.84	
Category VI (A & B) - Local Bodies, St. Lighting & PWS	45.42	41.22	40.34	44.05	36.91	36.38	38.79	39.13	39.83	38.82	36.46	40.88	478.22	
Category VII (A & B) - General Purpose & Religious Places	2.14	6.08	3.59	3.49	3.27	3.65	3.65	3.42	3.64	3.61	4.99	6.18	47.71	
Category VIII - Temporary Supply	3.94	4.52	3.02	3.31	3.42	3.92	4.32	4.21	5.09	5.29	5.58	6.80	53.43	
Category IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	
HT Category at 11 KV	292.06	341.09	421.07	406.96	411.74	433.34	427.72	446.05	447.71	461.55	469.85	454.47	5013.61	
HT-I Industry	179.85	226.56	284.68	284.77	286.10	302.35	296.49	312.36	321.46	328.87	328.01	308.72	3460.22	
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT-II - Others	82.26	85.21	106.06	96.06	97.93	100.08	101.43	102.75	96.20	98.12	105.46	110.21	1181.78	
HT-III Airports, Railway and Busstations	0.16	0.13	0.18	0.19	0.19	0.18	0.20	0.22	0.22	0.22	0.22	0.24	2.35	
HT-IV A Lit Irrigation & Agriculture	3.91	1.12	1.39	1.09	1.49	3.87	3.19	4.29	2.37	5.82	6.69	6.89	42.12	
HT- IV B - CP Water Supply Schemes	9.29	9.21	8.94	8.90	8.82	9.34	8.56	8.18	10.08	10.47	10.72	10.05	112.56	
HT-VI Townships and Residential Colonies	11.64	13.60	13.89	10.10	10.44	10.38	10.01	9.76	9.04	9.14	9.49	10.10	127.59	
HT - VII - Temporary Supply	4.92	5.26	5.93	5.85	6.77	7.14	7.73	8.32	8.04	8.59	8.93	7.92	85.40	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations	0.03	0.00	0.00	0.00	0.00	0.00	0.11	0.17	0.30	0.32	0.33	0.34	1.60	
HT Category at 33 KV	247.22	294.82	368.28	358.06	364.92	388.28	391.64	394.42	389.78	424.31	454.69	459.62	4537.05	
HT-I Industry	174.40	221.27	284.78	280.18	287.25	307.80	311.07	319.32	312.07	339.90	367.04	370.78	3575.86	
HT-I (B) Ferro-Alloys	0.26	1.42	2.36	2.55	2.36	1.72	2.30	2.58	2.38	2.68	2.50	2.37	25.49	
HT-II - Others	45.01	45.26	54.52	51.01	50.42	53.13	53.19	53.73	51.79	54.13	56.29	57.69	626.18	
HT-III Airports, Railway and Busstations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT-IV A Lit Irrigation & Agriculture	1.96	0.23	0.07	0.08	0.41	0.84	0.69	1.36	0.82	1.39	2.93	3.73	14.51	
HT- IV B - CP Water Supply Schemes	16.08	15.72	15.83	15.79	16.24	17.09	16.09	9.85	15.23	18.59	18.31	16.58	191.40	
HT-VI Townships and Residential Colonies	7.42	8.82	9.12	6.89	6.47	6.75	6.51	6.49	6.26	6.47	6.63	7.33	85.16	
HT - VII - Temporary Supply	2.09	2.10	1.60	1.56	1.77	1.95	1.79	1.09	1.23	1.15	0.98	1.14	18.45	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT Category at 132 KV	3905.88	3159.53	3020.00	3334.72	3900.57	3121.39	2955.09	2627.84	3159.07	3653.59	3636.48	4552.94	41027.11	
HT-I Industry	130.49	165.04	166.32	166.16	165.10	177.75	196.87	187.39	200.39	213.25	223.17	245.79	2237.72	
HT-I (B) Ferro-Alloys	1.38	5.99	9.52	4.83	2.41	3.92	11.11	13.99	14.54	14.26	11.71	10.87	104.53	
HT-II - Others	1.88	2.51	3.66	3.29	3.34	3.46	3.39	3.19	2.97	2.96	3.09	3.28	37.02	
HT-III Airports, Railway and Busstations	3.49	4.01	6.41	5.70	4.09	4.11	4.05	3.99	3.47	3.53	3.85	3.68	50.37	
HT-IV A Lit Irrigation & Agriculture	185.90	56.15	122.98	86.59	144.21	188.87	54.00	47.46	95.07	163.05	211.66	203.84	1560.78	
HT- IV B - CP Water Supply Schemes	20.34	19.30	20.10	18.29	20.23	19.57	18.35	0.74	14.76	18.29	20.54	17.50	208.01	
HT-V (A) Railway Traction	13.32	12.71	15.97	13.30	13.76	14.21	13.86	15.40	16.67	19.74	22.96	20.41	192.31	
HT-V (B) HMR	1.76	1.69	2.00	1.77	1.74	3.57	5.66	5.88	5.78	5.82	5.89	5.50	47.06	
HT-VI Townships and Residential Colonies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT - VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

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2021-22														
Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total	
LT Category	2372.07	1779.57	1668.01	2050.02	2553.89	1748.79	1659.75	1465.98	1958.23	2344.17	2255.32	3016.61	24872.41	
Category I (A&B) - Domestic	958.63	947.78	817.07	781.52	783.47	744.37	751.01	650.02	627.16	646.19	646.07	883.68	9236.94	
Category II (A,B,C & D) - Non-domestic/Commercial	216.62	164.78	187.97	203.26	208.33	211.77	237.04	233.81	220.03	222.33	232.23	141.78	2479.97	
Category III - Industrial	72.13	62.52	70.31	75.57	74.33	76.09	71.52	79.19	88.78	80.52	78.58	79.70	909.23	
Category IV (A&B) - Cottage Industries & Agrobased Ind.	0.81	0.69	0.78	0.81	0.77	0.73	0.83	0.79	0.88	0.80	0.80	0.89	9.57	
Category V (A & B) - Agriculture	1072.59	556.24	545.39	941.05	1438.66	668.60	551.11	453.95	971.30	1345.13	1249.91	1854.71	11647.65	
Category VI (A & B) - Local Bodies, St. Lighting & PWS	39.97	37.90	36.72	37.23	37.20	36.15	39.56	39.91	40.63	39.59	37.19	41.69	463.75	
Category VII (A & B) - General Purpose & Religious Places	4.97	3.97	3.88	4.27	4.42	4.48	4.27	4.00	4.26	4.22	5.84	7.23	55.80	
Category VIII - Temporary Supply	6.33	5.70	5.89	6.32	6.70	6.58	4.40	4.30	5.20	5.40	5.70	6.94	69.45	
Category IX-Electric Vehicle Charging Stations	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.04	
HT Category at 11 KV	510.66	451.62	444.98	476.07	490.01	482.31	516.76	566.93	560.82	564.94	594.52	567.77	6227.41	
HT-I Industry	335.34	300.14	305.58	324.54	329.34	323.12	326.27	365.35	376.81	382.09	396.62	371.88	4137.09	
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT-II - Others	134.81	116.59	105.61	118.88	124.48	122.41	155.36	165.09	148.60	142.05	154.94	154.04	1642.87	
HT-III Airports, Railway and Busstations	0.29	0.25	0.21	0.25	0.27	0.28	0.73	0.73	0.67	0.67	0.70	0.67	5.73	
HT-IV A Lit Irrigation & Agriculture	5.10	1.13	0.66	0.85	2.98	4.17	3.80	5.12	2.83	6.94	7.98	8.22	49.76	
HT-IV B - CP Water Supply Schemes	11.47	10.68	10.46	10.46	10.81	10.61	10.21	9.76	12.02	12.49	12.78	11.99	133.74	
HT-VI Townships and Residential Colonies	14.44	14.61	14.04	11.98	12.01	11.64	11.01	10.73	9.94	10.05	10.43	11.11	141.99	
HT - VII - Temporary Supply	8.84	8.09	8.40	8.93	9.86	9.79	9.26	9.97	9.63	10.29	10.70	9.49	113.25	
HT- RESCOs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT IX-Electric Vehicle Charging Stations	0.37	0.13	0.03	0.19	0.25	0.29	0.12	0.19	0.33	0.35	0.36	0.37	2.98	
HT Category at 33 KV	509.25	431.56	430.97	457.09	468.69	524.39	567.78	579.47	566.52	574.10	597.90	574.98	6282.71	
HT-I Industry	405.64	339.89	340.35	361.53	372.65	421.77	445.11	461.58	453.53	459.55	473.42	451.80	4985.81	
HT-I (B) Ferro-Alloys	2.72	2.01	2.51	2.41	2.32	2.40	4.83	3.66	3.08	3.24	3.00	2.94	35.12	
HT-II - Others	66.92	59.95	58.27	62.99	62.76	66.79	89.31	92.94	83.07	80.74	88.44	87.35	898.52	
HT-III Airports, Railway and Busstations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT-IV A Lit Irrigation & Agriculture	2.00	0.42	0.06	0.22	0.97	1.51	0.81	1.59	0.96	1.62	3.42	4.35	17.93	
HT-IV B - CP Water Supply Schemes	19.86	18.38	17.74	18.49	18.05	19.55	18.78	11.50	17.78	21.70	21.37	19.35	222.54	
HT-VI Townships and Residential Colonies	9.88	9.85	9.12	8.13	8.18	8.07	7.12	7.10	6.85	7.08	7.25	8.02	96.66	
HT - VII - Temporary Supply	2.22	2.07	2.91	3.34	3.77	4.30	1.83	1.11	1.25	1.17	1.00	1.16	26.13	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations													0.00	
HT Category at 132 KV	4663.54	3789.32	3370.85	3367.18	3688.17	3672.42	3579.24	2778.23	3229.82	3524.72	3706.77	4850.37	44220.65	
HT-I Industry	246.98	219.23	214.46	234.36	235.41	266.27	230.19	253.04	253.53	245.34	254.71	237.72	2891.24	
HT-I (B) Ferro-Alloys	12.91	8.19	14.82	15.60	12.16	14.26	15.16	12.64	7.63	11.53	17.28	18.50	160.68	
HT-II - Others	3.96	3.33	3.60	3.94	3.64	3.70	3.94	4.36	3.55	3.41	3.89	3.83	45.16	
HT-III Airports, Railway and Busstations	4.78	4.20	4.10	4.27	3.90	4.04	8.63	8.57	7.85	7.57	8.24	7.57	73.70	
HT-IV A Lit Irrigation & Agriculture	265.57	46.38	44.59	132.91	115.39	227.76	64.80	56.95	114.08	195.66	253.99	244.61	1762.68	
HT-IV B - CP Water Supply Schemes	21.05	20.06	14.57	19.30	20.23	19.96	22.02	0.89	17.71	21.95	24.65	21.00	223.37	
HT-V (A) Railway Traction	23.55	21.40	21.49	21.57	24.50	25.07	17.72	19.41	20.81	24.19	27.73	24.92	272.36	
HT-V (B) HMR	6.29	3.96	3.16	5.27	5.67	5.87	12.23	12.47	12.36	12.41	12.48	12.05	104.22	
HT-VI Townships and Residential Colonies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT - VII - Temporary Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations													0.00	



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2022-23													
Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total
LT Category	2736.57	2096.23	1861.49	1915.64	2179.64	2090.69	2139.40	1457.88	1884.05	2117.35	2182.12	2997.90	25658.95
Category I (A&B) - Domestic	1054.50	1071.69	919.88	782.42	835.55	767.18	814.56	716.63	678.82	670.50	689.04	977.09	9977.86
Category II (A,B,C & D) - Non-domestic/Commercial	287.38	294.66	268.70	231.92	252.09	247.63	250.61	235.38	229.42	214.82	232.63	305.18	3050.42
Category III - Industrial	80.54	80.62	77.61	71.09	73.44	58.87	74.85	79.71	90.19	83.04	79.81	83.61	933.39
Category IV (A.&B) - Cottage Industries & Agrobased Ind.	0.88	0.88	0.81	0.74	0.76	0.78	0.83	0.80	0.81	0.69	0.66	0.87	9.50
Category V (A & B) - Agriculture	1254.20	593.19	543.47	781.87	966.33	966.33	942.77	370.64	828.06	1094.82	1124.22	1566.30	11032.21
Category VI (A & B) - Local Bodies, St. Lighting & PWS	40.48	39.11	36.01	33.57	36.34	35.82	41.48	39.70	41.73	40.86	40.31	44.77	470.19
Category VII (A & B) - General Purpose & Religious Places	9.37	7.19	6.77	6.72	7.57	6.36	6.60	7.93	7.52	5.21	7.59	10.55	89.37
Category VIII -Temporary Supply	9.18	8.86	8.21	7.27	7.53	7.68	7.68	7.08	7.48	7.40	7.83	9.51	95.70
Category IX-Electric Vehicle Charging Stations	0.03	0.03	0.03	0.03	0.03	0.04	0.01	0.01	0.02	0.02	0.02	0.02	0.30
HT Category at 11 KV	575.66	545.42	572.09	493.55	513.76	533.69	550.07	565.21	562.77	559.43	591.13	547.64	6570.40
HT-I Industry	357.54	327.54	348.81	312.32	327.21	333.89	343.81	367.72	372.50	374.97	372.48	350.41	4189.20
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
HT-II - Others	171.83	174.24	179.78	144.92	147.16	156.56	161.25	154.16	150.08	139.97	135.02	153.22	1868.19
HT-III Airports, Railway and Busstations	0.36	0.36	0.39	0.32	0.35	0.36	0.43	0.44	0.44	0.42	0.39	0.40	4.66
HT-IV A Lit Irrigation & Agriculture	4.08	0.79	0.70	1.06	2.10	4.23	5.19	4.00	1.93	5.04	5.22	5.95	40.28
HT- IV B - CP Water Supply Schemes	11.06	11.08	11.17	10.38	10.94	11.50	12.67	13.04	12.63	12.93	12.68	12.10	142.17
HT-VI Townships and Residential Colonies	18.58	19.70	18.80	13.69	13.60	14.14	13.31	12.92	12.24	12.38	12.21	12.82	174.38
HT - VII - Temporary Supply	11.75	11.27	11.97	10.43	11.58	12.58	13.01	12.51	12.53	13.34	12.76	12.35	146.10
HT- RESCOs													0.00
HT IX-Electric Vehicle Charging Stations	0.45	0.45	0.47	0.42	0.41	0.44	0.39	0.42	0.42	0.40	0.37	0.39	5.02
HT Category at 33 KV	593.79	591.62	600.97	565.41	568.73	594.32	699.18	649.51	655.01	656.56	671.48	663.12	7499.69
HT-I Industry	462.26	443.28	456.07	435.94	436.60	453.63	575.56	526.85	534.11	537.38	554.37	545.01	5960.88
HT-I (B) Ferro-Alloys	6.85	6.48	6.48	4.89	2.73	2.44	2.43	2.80	4.19	5.53	4.93	5.31	54.86
HT-II - Others	88.63	95.13	102.23	91.71	95.85	102.48	82.60	80.42	78.63	75.87	73.87	74.98	1042.40
HT-III Airports, Railway and Busstations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HT-IV A Lit Irrigation & Agriculture	0.85	0.39	0.07	0.53	1.16	1.77	1.73	1.73	1.45	1.89	1.73	1.88	15.18
HT- IV B - CP Water Supply Schemes	19.48	21.00	21.10	20.43	20.10	20.62	23.15	24.65	23.19	22.99	23.91	23.25	263.89
HT-VI Townships and Residential Colonies	12.57	13.27	12.70	9.10	9.24	9.65	9.48	9.44	8.96	8.76	8.86	9.43	121.46
HT - VII - Temporary Supply	3.15	2.06	2.31	2.80	3.06	3.73	4.22	4.02	4.47	4.14	3.81	3.26	41.03
HT- RESCOs													0.00
HT IX-Electric Vehicle Charging Stations													0.00
HT Category at 132 KV	502.88	476.50	453.94	440.22	655.25	572.01	756.55	659.88	604.53	686.61	711.63	725.28	7245.29
HT-I Industry	355.57	344.54	351.58	334.21	318.72	332.79	345.42	335.11	346.93	354.74	387.01	398.83	4205.45
HT-I (B) Ferro-Alloys	23.48	21.87	4.11	9.18	13.39	21.56	15.59	19.10	18.30	25.66	30.09	27.22	229.55
HT-II - Others	4.44	4.49	4.76	3.75	3.76	3.90	4.05	3.65	3.44	3.15	3.05	3.47	45.91
HT-III Airports, Railway and Busstations	3.57	5.83	5.74	5.26	5.41	5.15	4.29	4.27	3.96	3.67	3.50	3.56	54.20
HT-IV A Lit Irrigation & Agriculture	58.73	42.42	27.15	32.49	257.61	145.67	296.07	209.08	142.13	210.64	197.59	201.89	1821.45
HT- IV B - CP Water Supply Schemes	20.49	19.62	22.14	20.94	21.11	22.68	24.93	22.47	23.57	22.56	24.20	24.12	268.84
HT-V (A) Railway Traction	29.54	30.79	31.11	27.46	28.15	32.71	58.03	58.03	58.03	58.03	58.03	58.03	527.97
HT-V (B) HMR	7.06	6.93	7.36	6.93	7.08	7.56	8.17	8.17	8.17	8.17	8.17	8.17	91.93
HT-VI Townships and Residential Colonies													0.00
HT - VII - Temporary Supply													0.00
HT- RESCOs													0.00
HT IX-Electric Vehicle Charging Stations													0.00
Total	4408.90	3699.76	3488.49	3414.81	3917.38	3790.71	4145.20	3332.49	3706.36	4019.95	4116.36	4933.93	46974.33

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2023-24														
Sales / Forecast Sales (MU)	April	May	June	July	August	September	October	November	December	January	February	March	Total	
LT Category	2793.09	2181.12	1935.76	1966.85	2229.62	2135.38	2189.07	1522.95	1928.39	2148.09	2215.25	3040.61	26286.17	
Category I (A&B) - Domestic	1114.70	1132.86	972.39	827.09	883.24	810.98	861.06	757.54	717.58	708.78	728.38	1032.87	10547.46	
Category II (A,B,C & D) - Non-domestic/Commercial	328.31	336.62	306.96	264.94	287.99	282.89	286.30	268.90	262.08	245.41	265.76	348.64	3484.80	
Category III - Industrial	84.57	84.65	81.49	74.65	77.11	61.82	78.59	83.70	94.70	87.19	83.80	87.79	980.06	
Category IV (A,&B) - Cottage Industries & Agrobased Ind.	0.93	0.93	0.86	0.78	0.80	0.82	0.88	0.84	0.85	0.72	0.70	0.92	10.04	
Category V (A & B) - Agriculture	1204.03	569.47	521.74	750.59	927.68	927.68	905.06	355.81	794.94	1051.02	1079.26	1503.65	10590.92	
Category VI (A & B) - Local Bodies, St. Lighting & PWS	41.29	39.89	36.73	34.24	37.07	36.54	42.31	40.50	42.56	41.68	41.12	45.66	479.59	
Category VII (A & B) - General Purpose & Religious Places	9.56	7.33	6.90	6.86	7.72	6.49	6.74	8.09	7.67	5.31	7.74	10.76	91.16	
Category VIII -Temporary Supply	9.64	9.31	8.62	7.63	7.90	8.06	8.06	7.43	7.85	7.77	8.22	9.98	100.49	
Category IX-Electric Vehicle Charging Stations	0.06	0.06	0.06	0.07	0.10	0.10	0.08	0.14	0.15	0.21	0.28	0.34	1.64	
HT Category at 11 KV	641.11	608.26	637.84	549.66	571.92	594.20	613.36	628.70	625.99	621.67	612.27	609.21	7314.18	
HT-I Industry	392.74	359.79	383.16	343.04	359.41	366.76	377.66	403.94	409.20	411.90	409.17	384.95	4601.71	
HT-I (B) Ferro-Alloys	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	
HT-II - Others	196.48	199.24	205.58	165.71	168.28	179.02	184.39	176.28	171.61	160.05	154.39	175.21	2136.24	
HT-III Airports, Railway and Busstations	0.37	0.36	0.40	0.33	0.36	0.37	0.44	0.45	0.45	0.43	0.40	0.41	4.77	
HT-IV A Lit Irrigation & Agriculture	4.16	0.80	0.71	1.08	2.14	4.31	5.30	4.08	1.97	5.14	5.32	6.07	41.09	
HT- IV B - CP Water Supply Schemes	12.08	12.09	12.19	11.33	11.95	12.55	13.83	14.23	13.79	14.11	13.84	13.21	155.21	
HT-VI Townships and Residential Colonies	21.06	22.33	21.31	15.52	15.41	16.02	15.08	14.64	13.87	14.03	13.84	14.53	197.84	
HT - VII - Temporary Supply	13.72	13.15	13.97	12.18	13.52	14.68	15.19	14.61	14.63	15.58	14.90	14.42	170.56	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations	0.49	0.49	0.52	0.46	0.45	0.48	1.46	0.46	0.47	0.44	0.41	0.42	6.55	
HT Category at 33 KV	689.30	655.92	677.80	637.51	641.53	670.35	787.24	731.32	737.35	738.84	755.58	746.34	8449.08	
HT-I Industry	518.38	497.09	511.43	488.85	488.58	508.71	645.54	590.64	599.02	602.67	621.74	611.29	6684.93	
HT-I (B) Ferro-Alloys	6.99	6.61	6.61	4.99	2.78	2.49	2.48	2.65	4.28	5.64	5.03	5.41	55.96	
HT-II - Others	104.42	111.90	120.07	107.96	112.73	120.36	97.49	94.99	92.93	89.75	87.45	88.72	1228.76	
HT-III Airports, Railway and Busstations													0.00	
HT-IV A Lit Irrigation & Agriculture	0.87	0.40	0.07	0.54	1.18	1.80	1.77	1.77	1.48	1.93	1.76	1.92	15.48	
HT- IV B - CP Water Supply Schemes	20.46	22.05	22.16	21.45	21.11	21.65	24.31	25.88	24.35	24.14	25.11	24.41	277.08	
HT-VI Townships and Residential Colonies	14.88	15.71	15.03	10.77	10.94	11.43	11.22	11.17	10.61	10.37	10.49	11.17	143.78	
HT - VII - Temporary Supply	3.30	2.16	2.43	2.94	3.21	3.91	4.44	4.22	4.70	4.35	4.00	3.42	43.08	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations													0.00	
HT Category at 132 KV	866.43	854.24	846.65	829.85	817.94	842.74	851.99	841.29	853.80	868.33	909.89	920.29	10303.44	
HT-I Industry	440.22	428.08	436.77	416.71	400.14	415.11	428.83	417.61	430.34	439.07	474.69	487.57	5214.14	
HT-I (B) Ferro-Alloys	23.95	22.31	4.19	9.36	13.66	21.99	15.90	19.48	18.67	26.18	30.69	27.76	234.14	
HT-II - Others	5.00	5.06	5.35	4.22	4.23	4.38	4.55	4.10	3.87	3.54	3.43	3.90	51.84	
HT-III Airports, Railway and Busstations	3.86	6.29	6.20	5.68	5.85	5.56	4.64	4.61	4.28	3.96	3.78	3.84	58.53	
HT-IV A Lit Irrigation & Agriculture	315.53	315.53	315.53	315.53	315.53	315.53	315.53	315.53	315.53	315.53	315.53	315.53	3786.40	
HT- IV B - CP Water Supply Schemes	21.51	20.61	23.25	21.98	22.17	23.81	26.18	23.60	24.75	23.69	25.41	25.32	282.28	
HT-V (A) Railway Traction	47.19	47.19	47.19	47.19	47.19	47.19	47.19	47.19	47.19	47.19	47.19	47.19	566.31	
HT-V (B) HMR	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17	110.00	
HT-VI Townships and Residential Colonies													0.00	
HT - VII - Temporary Supply													0.00	
HT- RESCOs													0.00	
HT IX-Electric Vehicle Charging Stations													0.00	
Total	4969.92	4299.54	4098.05	3983.86	4261.01	4242.67	4441.66	3724.25	4145.52	4378.94	4492.99	5316.46	52352.87	

## Actual voltage wise losses from FY 2016-17 to 2022-23

Particulars			2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
I. Losses in 33 KV System and Connected Equipment										
(i)	Total Energy delivered into 33 KV Distribution System from EHT SSs	A	31595.07	33828.70	40297.19	38919.84	38004.71	40853.14	44060.96	46527.85
(ii)	Energy delivered by all other Generating Stations at 33kV	B	204.20	0.00						
(iii)	Energy consumed by HT consumers at 33KV (Sales + Third Party)	X	3726.57	3864.38	5483.33	5427.97	4537.05	5780.56	7499.69	8449.08
(iv)	Energy Delivered into 11 KV and LT System from 33/11 KV SSs	C	27018.76	28614.56	33323.71	32051.83	32076.69	33765.29	34968.39	36403.77
	Losses (33 kV System)	(A + B) - (C + X)	1053.94	1349.77	1490.15	1440.03	1390.97	1307.29	1592.88	1675.00
	% Losses (33 kV System)	100 x [(A+B)-(C+X)] / (A+B)	3.30	3.30	3.70	3.70	3.66	3.20	3.62	3.60
II. Losses in 11 KV System and Connected Equipment										
(i)	Energy delivered into 11 KV system from 33/11kV SSs	C	27018.76	28614.56	33323.71	32051.83	32076.69	33765.29	34968.39	36403.77
(ii)	Energy delivered into 11 KV Distribution System from EHT SSs	D	31.30	31.30						
(iii)	Energy delivered at 11kV from all other Generating Stations	E	10.31	10.31						
(iv)	Total Energy delivered into 11 KV and LT Distribution System	C+D+E	24565.07	24565.07	33323.71	32051.83	32076.69	33765.29	34968.39	36403.77
(v)	Energy consumed by HT consumers at 11KV (Sales + Third Party)	Y	4434.30	4434.30	5366.89	5679.38	5013.61	5762.19	6570.40	7314.18
(vi)	Total Output from 11kV to LT	F	18882.87	18882.87	26390.62	24866.01	25773.60	26568.07	26953.72	27597.03
	Losses (11kV System)	(C + D + E) - (Y + F)	1216.40	1259.04	1566.21	1506.44	1289.48	1435.03	1444.26	1492.55
	% Losses (11kV System)	[(C+D+E)-(Y+F)] x 100 / (C+D+E)	4.50	4.40	4.70	4.70	4.02	4.25	4.13	4.10

Particulars			2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
III. Losses in LT system and connected equipment										
(i)	Energy delivered to LT system from 11/400 V DTRs	F	21324.14	22410.24	26390.62	24866.01	25773.60	26568.07	26953.72	27597.03
(ii)	Energy sold to metered categories	Z	10866.72	11737.08	12155.40	12751.06	12541.38	13310.63	14626.73	15695.25
(iii)	Energy sold to un-metered categories	N	8767.64	9496.62	12637.78	10818.39	11744.84	11724.36	11032.21	10590.92
	Losses (LT System)	F-(Z+N)	1689.78	1176.54	1597.44	1296.56	1487.38	1533.08	1294.78	1310.86
	% Losses (LT System)	[F-(Z+N)] x 100 / (F)	7.92	5.25	6.05	5.21	5.77	5.77	4.80	4.75
IV. Total losses in the Distribution System										
(i)	Total Input to the distribution system	A + B + D + E	31811.58	33828.70	40297.19	38919.84	38004.71	40853.14	44060.96	46527.85
(ii)	Total Output from the Distribution Sytem	X + Y + Z + N	27851.46	30043.36	35643.40	34676.81	33836.88	36577.73	39729.04	42049.43
(iii)	EHT Sales	G	2992.72	2982.48	4699.92	5232.49	4437.80	5940.82	7245.29	10303.44
	Distribution System Losses	(A + B + D + E)-(X + Y + Z + N)	3960.12	3785.34	4653.80	4243.03	4167.83	4275.41	4331.92	4478.42
	% Distribution System Losses ( Excluding EHT Sales)	[(A+B+D+E)-(X+Y+Z+N)] x 100 / (A+B+D+E)	12.45	11.19	11.55	10.90	10.97	10.47	9.83	9.63
	% Distribution System Losses ( Including EHT Sales)	[(A+B+D+E)-(X+Y+Z+N)] x 100 / (A+B+D+E +G)	11.38	10.28	10.34	9.61	9.82	9.14	8.44	7.88

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**Station wise energy availabilities and energy despatches from FY 2016-17 to 2022-23**  
2016-17

Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	3046.01	3046.01
VTPS II	0.00	0.00
VTPS III	0.00	0.00
VTPS IV	1449.76	1449.76
RTPP I	1100.03	1100.03
RTPP Stage-II	1103.06	1103.06
RTPP Stage-III	567.50	567.50
KTPS A	1191.86	1191.86
KTPS B	0.00	0.00
KTPS C	0.00	0.00
KTPS D	969.82	969.82
KTPS Stage VI	960.33	960.33
RTS B	153.55	153.55
NTS	0.00	0.00
Kakatiya Thermal Power Plant	925.82	925.82
Kakatiya Thermal Power Plant	2234.24	2234.24
Interest on Pension Bonds(TS	0.00	0.00
Interest on Pension Bonds(AP	0.00	0.00
<b>TOTAL THERMAL</b>	<b>13701.96</b>	<b>13701.96</b>
MACHKUND PH TS Share	66.62	66.62
TUNGBHADRA PH TSShare	3.10	3.10
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00
NSPH	126.70	126.70
NSRCPH	0.00	0.00
NSLCPH	0.00	0.00
POCHAMPAD PH	38.49	38.49
NIZAMSAGAR PH	7.94	7.94
PABM	0.00	0.00
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	6.12	6.12
SSLM LCPH	430.38	430.38
Nagarjunasagar Tail Pond Dar	0.00	0.00
Priyadarshini Jurala Hydro Ele	63.23	63.23
Lower Jurala Hydro Electric Pr	105.63	105.63
POCHAMPAD PH Stage 2	10.74	10.74
PULICHINTAL(New Project)	9.21	9.21
Mini hydel & others	2.84	2.84
Ramagiri wind mills	0.00	0.00
Pochampad St. iIV (New)	2.89	2.89
<b>TOTAL HYDRO</b>	<b>873.91</b>	<b>873.91</b>
<b>TOTAL TSGENCO</b>	<b>14575.88</b>	<b>14575.88</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1672.69	1672.69
NTPC (SR) Stage III	413.67	413.67
<b>Total NTPC(SR)</b>	<b>2086.37</b>	<b>2086.37</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00
Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00

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Talcher Stage 2	1080.71	1080.71
Others	0.00	0.00
<b>Total NTPC(ER)</b>	<b>1080.71</b>	<b>1080.71</b>
<b>Total NTPC</b>	<b>3167.08</b>	<b>3167.08</b>
<b>NLC TS-II</b>		
Stage-I	225.15	225.15
Stage-II	399.03	399.03
<b>Total NLC</b>	<b>624.18</b>	<b>624.18</b>
<b>NPC</b>		
NPC-MAPS	98.65	98.65
NPC-Kaiga unit I	350.93	350.93
NPC-Kaiga unit II	327.71	327.71
<b>Total NPC</b>	<b>777.30</b>	<b>777.30</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	2603.17	2603.17
NTPC Simhadri Stage II	863.48	863.48
<b>Total NTPC- Simhadri</b>	<b>3466.65</b>	<b>3466.65</b>
<b>CGS - New</b>		
<b>Vallur Thermal Power Plan</b>	<b>421.84</b>	<b>421.84</b>
NTPC Aravalli Power	52.70	52.70
NLC Tamilnadu Power Ltd.	530.05	530.05
NVVNL B.P.Coal	226.94	226.94
<b>TOTAL CGS</b>	<b>9266.75</b>	<b>9266.75</b>
<b>APGPCL</b>		
APGPCL I - Allocated capacity	9.40	9.40
APGPCL I - Unutilised capacity	0.00	0.00
APGPCL II - Allocated capacity	33.27	33.27
APGPCL II - Unutilised capacity	0.00	0.00
<b>Total APGPCL</b>	<b>42.67</b>	<b>42.67</b>
<b>IPPS</b>		
GVK	0.00	0.00
Spectrum	0.00	0.00
Kondapalli (Naphtha)	0.00	0.00
Kondapalli (Gas)	0.00	0.00
BSES	0.00	0.00
GVK Extension	0.00	0.00
Vemagiri	0.00	0.00
Gautami	0.00	0.00
Konaseema	0.00	0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>		
NCE - Bio-Mass	48.62	48.62
NCE - Bagasse	8.28	8.28
NCE - Municipal Waste to Energy	0.00	0.00
NCE - Industrial Waste based	12.17	12.17
NCE - Wind Power	207.24	207.24
NCE - Mini Hydel	1.68	1.68
NCE - NCL Energy Ltd	0.00	0.00
NCE-Others	960.28	960.28
<b>TOTAL NCE</b>	<b>1238.28</b>	<b>1238.28</b>
<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni-I	1677.48	1677.48
Singareni II	1054.32	1054.32
Thermal Power Unit 1	1349.00	1349.00
Thermal Power Unit 2	2950.15	2950.15
<b>TOTAL OTHERS</b>	<b>7030.96</b>	<b>7030.96</b>

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MARKET		
PTC	0.00	0.00
RCL and Short-Term Sources	0.00	0.00
CPDCL	0.00	0.00
EPDCL	0.00	0.00
NPDCL	0.00	0.00
SPDCL	0.00	0.00
UI	281.92	281.92
Other Short Term Sources	4365.00	4365.00
STOA charges	0.00	0.00
	0.00	0.00
IBSS 15-16	0.00	0.00
IBSS 14-15	0.00	0.00
PP cost provision 16-17	0.00	0.00
Interstate sale	0.00	0.00
Others (RRAs, GBI, Penalty fo	0.00	0.00
<b>TOTAL MARKET</b>	<b>4646.92</b>	<b>4646.92</b>
<b>TOTAL (From All Sources)</b>	<b>36801.46</b>	<b>36801.46</b>

## 2017-18

Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	186.79	186.79
VTPS II	186.79	186.79
VTPS III	186.79	186.79
VTPS IV	269.65	269.65
RTPP I	204.57	204.57
RTPP Stage-II	211.99	211.99
RTPP Stage-III	92.94	92.94
KTPS A	671.37	671.37
KTPS B	788.57	788.57
KTPS C	788.57	788.57
KTPS D	1714.84	1714.84
KTPS Stage VI	1767.31	1705.10
RTS B	250.66	250.66
NTS	0.00	0.00
Kakatiya Thermal Power Plant	1841.10	1841.10
Kakatiya Thermal Power Plant	2554.56	2554.56
BTPS (Manuguru New Project)	0.00	0.00
KTPS VII	0.00	0.00
<b>TOTAL THERMAL</b>	<b>11716.48</b>	<b>11654.27</b>
MACHKUND PH TS Share	46.04	46.04
TUNGBHADRA PH TS Share	1.56	1.56
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00
NSPH	89.99	89.99
NSRCPH	0.00	0.00
NSLCPH	23.97	23.97
POCHAMPAD PH	20.93	20.93
NIZAMSAGAR PH	14.98	14.98
PABM	0.00	0.00
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	9.83	9.83
SSLM LCPH	556.04	556.04
Nagarjunasagar Tail Pond Dar	0.00	0.00
Priyadarshini Jurala Hydro Ele	77.53	77.53
Lower Jurala Hydro Electric Pr	140.86	140.86
POCHAMPAD Stage-II	6.13	6.13

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PULICHINTAL(New Project)	4.60	4.60
Mini Hydel & Others (Peddapa	2.01	2.01
Ramagiri Wind Mills (AP)	0.00	0.00
Pochampad Stage-IV	0.00	0.00
<b>TOTAL HYDRO</b>	<b>994.47</b>	<b>994.47</b>
<b>TOTAL TSGENCO</b>	<b>12710.95</b>	<b>12648.74</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1551.05	1551.05
NTPC (SR) Stage III	408.31	408.31
<b>Total NTPC(SR)</b>	<b>1959.35</b>	<b>1959.35</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00
Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00
Talcher Stage 2	1021.29	1021.29
Others	0.00	0.00
<b>Total NTPC(ER)</b>	<b>1021.29</b>	<b>1021.29</b>
<b>Total NTPC</b>	<b>2980.64</b>	<b>2980.64</b>
<b>NLC TS-II</b>		
Stage-I	194.70	85.02
Stage-II	354.71	181.84
<b>Total NLC</b>	<b>549.41</b>	<b>266.86</b>
<b>NPC</b>		
NPC-MAPS	94.85	94.85
NPC-Kaiga unit I	363.72	363.72
NPC-Kaiga unit II	388.24	388.24
<b>Total NPC</b>	<b>846.80</b>	<b>846.80</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	2046.58	1676.22
NTPC Simhadri Stage II	764.06	426.35
<b>Total NTPC- Simhadri</b>	<b>2810.64</b>	<b>2102.57</b>
<b>CGS - New</b>		
Vallur Thermal Power Plant	340.53	340.53
Tuticorin	551.43	192.01
NPC- Kudankulam	154.17	154.17
<b>NCE -Bundled power NVVNL</b>	<b>517.74</b>	<b>517.74</b>
Kudigi	149.14	14.68
<b>TOTAL CGS</b>	<b>8900.50</b>	<b>7416.01</b>
<b>APGPCL</b>		
APGPCL I - Allocated capacity	16.08	16.08
APGPCL I - Unutilised capacity	0.00	0.00
APGPCL II - Allocated capacity	54.19	54.19
APGPCL II - Unutilised capacity	0.00	0.00
<b>Total APGPCL</b>	<b>70.26</b>	<b>70.26</b>
<b>IPPS</b>		
GVK	0.00	0.00
Spectrum	0.00	0.00
Kondapalli (Naphtha)	0.00	0.00
Kondapalli (Gas)	0.00	0.00
BSES	0.00	0.00
GVK Extension	0.00	0.00
Vemagiri	0.00	0.00
Gautami	0.00	0.00
Konaseema	0.00	0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>		
NCE - Bio-Mass	43.22	43.22
NCE - Bagasse	8.28	8.28
NCE - Municipal Waste to Energy	0.00	0.00



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NCE - Industrial Waste based	25.22	25.22
NCE - Wind Power	184.35	184.35
NCE - Mini Hydel	1.77	1.77
NCE - NCL Energy Ltd	0.00	0.00
NCE-Others	2496.25	2496.25
<b>TOTAL NCE</b>	<b>2759.09</b>	<b>2759.09</b>
<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni	6021.53	6021.53
Thermal Power Tech	1521.73	1521.73
CSPGCL	3415.87	3415.87
Thermal Power Tech Unit II	3077.03	3077.03
<b>TOTAL OTHERS</b>	<b>14036.16</b>	<b>14036.16</b>
<b>MARKET</b>		
PTC	0.00	0.00
RCL and Short-Term Sources	0.00	0.00
CPDCL	0.00	0.00
EPDCL	0.00	0.00
NPDCL	0.00	0.00
SPDCL	0.00	0.00
UI	0.00	0.00
Other Short Term Sources	3514.16	2112.74
D-D Sales/Purchases	0.00	-379.22
Bi-lateral Purchases( PTC etc.	0.00	0.00
Pool Transaction (Purchases)	0.00	0.00
Pool Transaction ( Sales)	0.00	0.00
<b>TOTAL MARKET</b>	<b>3514.16</b>	<b>1733.52</b>
<b>TOTAL (From All Sources)</b>	<b>41991.12</b>	<b>38663.77</b>

## 2018-19

Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	0.00	0.00
VTPS II	0.00	0.00
VTPS III	0.00	0.00
VTPS IV	0.00	0.00
RTPP I	0.00	0.00
RTPP Stage-II	0.00	0.00
RTPP Stage-III	0.00	0.00
KTPS A	749.31	749.31
KTPS B	749.31	749.31
KTPS C	749.31	749.31
KTPS D	2406.59	2406.59
KTPS Stage VI	2508.59	2508.59
RTS B	260.72	260.72
NTS	0.00	0.00
Kakatiya Thermal Power Plant	2596.72	2596.72
Kakatiya Thermal Power Plant	2568.42	2568.42
BTPS (Manuguru New Project)	0.00	0.00
KTPS VII	1323.65	1323.65
<b>TOTAL THERMAL</b>	<b>13912.62</b>	<b>13912.62</b>
MACHKUND PH TS Share	0.00	0.00
TUNGBHADRA PH TS Share	0.00	0.00
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00

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NSPH	268.95	268.95
NSRCPH	0.00	0.00
NSLCPH	0.00	0.00
POCHAMPAD PH	17.29	17.29
NIZAMSAGAR PH	3.90	3.90
PABM	0.00	0.00
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	4.47	4.47
SSLM LCPH	689.42	689.42
Nagarjunasagar Tail Pond Dar	0.00	0.00
Priyadarshini Jurala Hydro Ele	85.29	85.29
Lower Jurala Hydro Electric Pr	103.59	103.59
POCHAMPAD Stage-II	0.00	0.00
PULICHINTAL(New Project)	14.20	14.20
Mini Hydel & Others (Peddapa	0.79	0.79
Ramagiri Wind Mills (AP)	0.00	0.00
Pochampad Stage-IV	0.00	0.00
<b>TOTAL HYDRO</b>	<b>1187.90</b>	<b>1187.90</b>
<b>TOTAL TSGENCO</b>	<b>15100.52</b>	<b>15100.52</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1614.44	1614.44
NTPC (SR) Stage III	400.74	400.74
<b>Total NTPC(SR)</b>	<b>2015.18</b>	<b>2015.18</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00
Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00
Talcher Stage 2	997.23	997.23
Others	0.00	0.00
<b>Total NTPC(ER)</b>	<b>997.23</b>	<b>997.23</b>
<b>Total NTPC</b>	<b>3012.42</b>	<b>3012.42</b>
<b>NLC TS-II</b>		
Stage-I	227.08	227.08
Stage-II	414.17	414.17
<b>Total NLC</b>	<b>641.24</b>	<b>641.24</b>
<b>NPC</b>		
NPC-MAPS	43.14	43.14
NPC-Kaiga unit I	761.42	761.42
NPC-Kaiga unit II	0.00	0.00
<b>Total NPC</b>	<b>804.55</b>	<b>804.55</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	2402.21	2402.21
NTPC Simhadri Stage II	851.56	851.56
<b>Total NTPC- Simhadri</b>	<b>3253.77</b>	<b>3253.77</b>
<b>CGS - New</b>		
Vallur Thermal Power Plant	331.17	331.17
Tuticorin/NLC Tamilnadu Powe	504.27	504.27
NPC-Kundnkulam	107.26	107.26
kudigi	620.39	620.39
NTPC Aravali Power	0.00	0.00
NCE - Bundled Power (Coal) (	1110.10	1110.10
NCE-Bundled Power (NVVNL)	170.03	170.03
<b>TOTAL CGS</b>	<b>10555.18</b>	<b>10555.18</b>
<b>APGPCL</b>		
APGPCL I - Allocated capacity	13.73	13.73
APGPCL I - Unutilised capacit	0.00	0.00
APGPCL II - Allocated capacit	39.40	39.40
APGPCL II - Unutilised capaci	0.00	0.00
<b>Total APGPCL</b>	<b>53.13</b>	<b>53.13</b>

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<b>IPPS</b>		
GVK	0.00	0.00
Spectrum	0.00	0.00
Kondapalli (Naphtha)	0.00	0.00
Kondapalli (Gas)	0.00	0.00
BSES	0.00	0.00
GVK Extension	0.00	0.00
Vemagiri	0.00	0.00
Gautami	0.00	0.00
Konaseema	0.00	0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>		
NCE - Bio-Mass	32.53	32.53
NCE - Bagasse	23.89	23.89
NCE - Municipal Waste to En	0.00	0.00
NCE - Industrial Waste based	46.22	46.22
NCE - Wind Power	230.49	230.49
NCE - Mini Hydel	2.35	2.35
NCE - NCL Energy Ltd	0.00	0.00
NCE-Solar	3597.69	3597.69
NCE - Bundled Power NVVNL	40.17	40.17
NCE - Bundled Power (Solar)	579.25	579.25
NCE-Others	0.00	0.00
<b>TOTAL NCE</b>	<b>4552.58</b>	<b>4552.58</b>
<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni I & II	5737.24	5737.24
Thermal Power Tech	1341.92	1341.92
CSPGCL	3759.64	3759.64
Thermal Power Tech Unit II	2606.94	2606.94
<b>TOTAL OTHERS</b>	<b>13445.74</b>	<b>13445.74</b>
<b>MARKET</b>		
Bilateral Sales (PTC etc.)	4539.05	4539.05
Sale of Power	-1229.35	-1229.35
D-D Sales/Purchase & UI	-486.17	-486.17
UI-SRPC/Deviation charges	0.00	0.00
Interest on Pension Bonds	0.00	0.00
Reactive	0.00	0.00
Wheeling KPTCL	0.00	0.00
Wheeling Tantransco/Asset M	0.00	0.00
Thermal incentive 18-19/RO	0.00	0.00
Adv Income Tax 2018-19	0.00	0.00
STOA Prov 2018-19	0.00	0.00
Miscellaneous (Provisional Re	0.00	0.00
<b>TOTAL MARKET</b>	<b>2823.53</b>	<b>2823.53</b>
<b>TOTAL (From All Sources)</b>	<b>46530.68</b>	<b>46530.68</b>

## 2019-20

Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	0.00	0.00
VTPS II	0.00	0.00
VTPS III	0.00	0.00
VTPS IV	0.00	0.00
RTPP I	0.00	0.00
RTPP Stage-II	0.00	0.00
RTPP Stage-III	0.00	0.00

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KTPS A	613.05	613.05
KTPS B	408.70	408.70
KTPS C	408.70	408.70
KTPS D	2265.63	2265.63
KTPS Stage VI	2393.07	2393.07
RTS B	245.41	245.41
NTS	0.00	0.00
Kakatiya Thermal Power Plant	2053.50	2053.50
Kakatiya Thermal Power Plant	2992.97	2992.97
BTPS (Manuguru New Project	0.00	0.00
BTPS (Manuguru New Project	0.00	0.00
BTPS (Manuguru New Project	0.00	0.00
BTPS (Manuguru New Project	0.00	0.00
KTPS VII	2391.80	2391.80
<b>TOTAL THERMAL</b>	<b>13772.85</b>	<b>13772.85</b>
MACHKUND PH TS Share	0.00	0.00
TUNGBHADRA PH TS Share	0.00	0.00
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00
NSPH	1121.37	1121.37
NSRCPH	0.00	0.00
NSLCPH	0.00	0.00
POCHAMPAD PH	4.69	4.69
NIZAMSAGAR PH	0.84	0.84
PABM	0.00	0.00
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	28.70	28.70
SSLM LCPH	1401.60	1401.60
Nagarjunasagar Tail Pond Dar	0.00	0.00
Priyadarshini Jurala Hydro Ele	114.15	114.15
Lower Jurala Hydro Electric Pr	217.74	217.74
POCHAMPAD Stage-II	0.00	0.00
PULICHINTAL(New Project)	140.00	140.00
Mini Hydel & Others (Peddapa	0.67	0.67
Ramagiri Wind Mills (AP)	0.00	0.00
Pochampad Stage-IV	0.00	0.00
<b>TOTAL HYDRO</b>	<b>3029.76</b>	<b>3029.76</b>
<b>TOTAL TSGENCO</b>	<b>16802.61</b>	<b>16802.61</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1432.69	1432.69
NTPC (SR) Stage III	378.03	378.03
<b>Total NTPC(SR)</b>	<b>1810.72</b>	<b>1810.72</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00
Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00
Talcher Stage 2	969.57	969.57
Others	0.00	0.00
<b>Total NTPC(ER)</b>	<b>969.57</b>	<b>969.57</b>
<b>Total NTPC</b>	<b>2780.29</b>	<b>2780.29</b>
<b>NLC TS-II</b>		
Stage-I	257.92	257.92
Stage-II	441.95	441.95
<b>Total NLC</b>	<b>699.87</b>	<b>699.87</b>
<b>NPC</b>		
NPC-MAPS	52.87	52.87
NPC-Kaiga unit I	382.70	382.70

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NPC-Kaiga unit II	382.70	382.70
<b>Total NPC</b>	<b>818.27</b>	<b>818.27</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	1845.24	1845.24
NTPC Simhadri Stage II	849.32	849.32
<b>Total NTPC- Simhadri</b>	<b>2694.56</b>	<b>2694.56</b>
<b>CGS - New</b>		
Vallur Thermal Power Plant	303.59	303.59
Tuticorin/NLC Tamilnadu Power	529.15	529.15
NPC-Kundnkulam	126.05	126.05
kudigi	398.74	398.74
NCE-Bundled Power (NVVNL)	148.60	148.60
NCE - Bundled Power (Coal) (	972.19	972.19
Neyveli new unit - 1	23.98	23.98
NTPC Aravali Power	0.00	0.00
<b>TOTAL CGS</b>	<b>9495.29</b>	<b>9495.29</b>
<b>APGPCL</b>		
APGPCL I - Allocated capacity	6.95	6.95
APGPCL I - Unutilised capacity	0.00	0.00
APGPCL II - Allocated capacity	18.58	18.58
APGPCL II - Unutilised capacity	0.00	0.00
<b>Total APGPCL</b>	<b>25.53</b>	<b>25.53</b>
<b>IPPS</b>		
GVK	0.00	0.00
Spectrum	0.00	0.00
Kondapalli (Naphtha)	0.00	0.00
Kondapalli (Gas)	0.00	0.00
BSES	0.00	0.00
GVK Extension	0.00	0.00
Vemagiri	0.00	0.00
Gautami	0.00	0.00
Konaseema	0.00	0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>		
NCE - Bio-Mass	37.97	37.97
NCE - Bagasse	9.34	9.34
NCE - Municipal Waste to Energy	0.00	0.00
NCE - Industrial Waste based	14.06	14.06
NCE - Wind Power	185.19	185.19
NCE - Mini Hydel	2.99	2.99
NCE - NCL Energy Ltd	0.00	0.00
NCE-Solar	3564.93	3564.93
NCE - Bundled Power NVVNL	40.62	40.62
NCE - Bundled Power (Solar)	560.17	560.17
NCE-Others	0.00	0.00
<b>TOTAL NCE</b>	<b>4415.26</b>	<b>4415.26</b>
<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni I & II	6068.46	6068.46
Thermal Power Tech	1603.73	1603.73
CSPGCL	1583.90	1583.90
Thermal Power Tech Unit II	3191.82	3191.82
<b>TOTAL OTHERS</b>	<b>12447.91</b>	<b>12447.91</b>
<b>MARKET</b>		
Bilateral Sales (RTC, PTC etc)	4765.83	4765.83
D-D /Interstate Sale/UI	-2345.21	-2345.21
STOA Compensation	0.00	0.00
Interest on Pension Bonds	0.00	0.00

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Wheeling KPTCL	0.00	0.00
Wheeling TNEB/Asset Mainte	0.00	0.00
Reactive	0.00	0.00
Inter Discom Cost	0.00	0.00
Banked energy 16-17	0.00	0.00
Miscellaneous (Provisions reve	0.00	0.00
<b>TOTAL MARKET</b>	<b>2420.62</b>	<b>2420.62</b>
<b>TOTAL (From All Sources)</b>	<b>45607.22</b>	<b>45607.22</b>

## 2020-21

Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	0.00	0.00
VTPS II	0.00	0.00
VTPS III	0.00	0.00
VTPS IV	0.00	0.00
RTPP I	0.00	0.00
RTPP Stage-II	0.00	0.00
RTPP Stage-III	0.00	0.00
KTPS A	0.00	0.00
KTPS B	0.00	0.00
KTPS C	0.00	0.00
KTPS D	1724.11	1724.11
KTPS Stage VI	2389.17	2389.17
RTS B	176.72	176.72
NTS	0.00	0.00
Kakatiya Thermal Power Plant	1659.79	1659.79
Kakatiya Thermal Power Plant	2591.52	2591.52
<b>BTPS</b>	1169.87	1169.87
<b>KTPS VII</b>	4115.40	4115.40
<b>TOTAL THERMAL</b>	<b>13826.58</b>	<b>13826.58</b>
MACHKUND PH TS Share	0.00	0.00
TUNGBHADRA PH TS Share	0.00	0.00
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00
NSPH	937.81	937.81
NSRCPH	0.00	0.00
NSLCPH	0.00	0.00
POCHAMPAD PH	43.64	43.64
NIZAMSAGAR PH	6.11	6.11
PABM	0.00	0.00
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	18.18	18.18
SSLM LCPH	860.75	860.75
Nagarjunasagar Tail Pond Dar	0.00	0.00
Priyadarshini Jurala Hydro Ele	126.00	126.00
Lower Jurala Hydro Electric Pr	275.79	275.79
POCHAMPAD Stage-II	0.00	0.00
PULICHINTAL(New Project)	139.31	139.31
Ramagiri Wind Mills	0.00	0.00
Pochampad Stage-IV	7.25	7.25
Mini Hydel & Others (Peddapa	0.79	0.79
<b>TOTAL HYDRO</b>	<b>2415.64</b>	<b>2415.64</b>
<b>TOTAL TSGENCO</b>	<b>16242.22</b>	<b>16242.22</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1499.14	1499.14

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NTPC (SR) Stage III	353.62	353.62
<b>Total NTPC(SR)</b>	<b>1852.76</b>	<b>1852.76</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00
Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00
Talcher Stage 2	1061.37	1061.37
Others	0.00	0.00
<b>Total NTPC(ER)</b>	<b>1061.37</b>	<b>1061.37</b>
<b>Total NTPC</b>	<b>2914.13</b>	<b>2914.13</b>
<b>NLC TS-II</b>		
Stage-I	208.06	208.06
Stage-II	222.09	222.09
<b>Total NLC</b>	<b>430.15</b>	<b>430.15</b>
<b>NPC</b>		
NPC-MAPS	49.08	49.08
NPC-Kaiga unit I	742.21	742.21
NPC-Kaiga unit II	0.00	0.00
<b>Total NPC</b>	<b>791.29</b>	<b>791.29</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	1131.58	1131.58
NTPC Simhadri Stage II	770.72	770.72
<b>Total NTPC- Simhadri</b>	<b>1902.30</b>	<b>1902.30</b>
<b>CGS - New</b>		
Vallur Thermal Power Plant	153.54	153.54
Tuticorin/NLC Tamilnadu Power	568.77	568.77
NPC-Kundnkulam	207.65	207.65
kudigi	379.87	379.87
NCE-Bundled Power (NVVNL)	143.74	143.74
NCE - Bundled Power (Coal) (	815.71	815.71
NNTPS	133.94	133.94
<b>TOTAL CGS</b>	<b>8441.08</b>	<b>8441.08</b>
<b>APGPCL</b>		
APGPCL I - Allocated capacity	0.00	0.00
APGPCL I - Unutilised capacity	0.00	0.00
APGPCL II - Allocated capacity	0.00	0.00
APGPCL II - Unutilised capacity	0.00	0.00
<b>Total APGPCL</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>		
GVK	0.00	0.00
Spectrum	0.00	0.00
Kondapalli (Naphtha)	0.00	0.00
Kondapalli (Gas)	0.00	0.00
BSES	0.00	0.00
GVK Extension	0.00	0.00
Vemagiri	0.00	0.00
Gautami	0.00	0.00
Konaseema	0.00	0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>		
NCE - Bio-Mass	54.51	54.51
NCE - Bagasse	8.60	8.60
NCE - Municipal Waste to Energy	58.55	58.55
NCE - Industrial Waste based	35.99	35.99
NCE - Wind Power	191.55	191.55
NCE - Mini Hydel	2.83	2.83
NCE - NCL Energy Ltd	0.00	0.00
NCE-Solar	3553.00	3553.00
NCE - Bundled Power NVVNL	36.53	36.53
NCE - Bundled Power (Solar)	575.01	575.01
<b>TOTAL NCE</b>	<b>4516.58</b>	<b>4516.58</b>

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<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni I & II	4850.08	4850.08
Thermal Power Tech	2967.73	2967.73
CSPGCL	2310.75	2310.75
Thermal Power Tech Unit II	1325.47	1325.47
<b>TOTAL OTHERS</b>	<b>11454.02</b>	<b>11454.02</b>
<b>MARKET</b>		
Short Term Power (PTC & oth	6330.21	6330.21
D-D purchase/ sale	-2174.46	-2174.46
Interstate Sale/UI/Sale/Purcha	-757.79	-757.79
Interest on Pension Bonds	0.00	0.00
UI-SRPC/Deviation charges	0.00	0.00
Thermal Incentive 2020-21	0.00	0.00
Advance Income Tax 2020-21	0.00	0.00
Wheeling KPTCL/Reactive KP	0.00	0.00
Wheeling Tantransco/Asset M	0.00	0.00
Reactive	0.00	0.00
Receivable from TRANSCO to	0.00	0.00
Miscellaneous (GBI Receivabl	0.00	0.00
<b>TOTAL MARKET</b>	<b>3397.95</b>	<b>3397.95</b>
<b>TOTAL (From All Sources)</b>	<b>44051.86</b>	<b>44051.86</b>

## 2021-22

Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	0.00	0.00
VTPS II	0.00	0.00
VTPS III	0.00	0.00
VTPS IV	0.00	0.00
RTPP I	0.00	0.00
RTPP Stage-II	0.00	0.00
RTPP Stage-III	0.00	0.00
KTPS A	0.00	0.00
KTPS B	0.00	0.00
KTPS C	0.00	0.00
KTPS D	2060.64	2060.64
KTPS Stage VI	2085.73	2085.73
RTS B	166.28	166.28
NTS	0.00	0.00
Kakatiya Thermal Power Plant	2391.36	2391.36
Kakatiya Thermal Power Plant	2374.52	2374.52
BTPS (Manuguru New Project	3316.30	3316.30
BTPS (Manuguru New Project	0.00	0.00
BTPS (Manuguru New Project	0.00	0.00
BTPS (Manuguru New Project	0.00	0.00
KTPS VII	3941.38	3941.38
Interest on pension bonds	0.00	0.00
Infirm Power BTPS-IV	26.58	26.58
<b>TOTAL THERMAL</b>	<b>16362.80</b>	<b>16362.80</b>
MACHKUND PH TS Share	0.00	0.00
TUNGBHADRA PH TS Share	0.00	0.00
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00
NSPH	1676.64	1676.64



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NSRCPH	0.00	0.00
NSLCPH	0.00	0.00
POCHAMPAD PH	0.00	0.00
NIZAMSAGAR PH	12.16	12.16
PABM	0.00	0.00
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	0.00	0.00
SSLM LCPH	1450.73	1450.73
Nagarjunasagar Tail Pond Dar	0.00	0.00
Priyadarshini Jurala Hydro Ele	0.00	0.00
Lower Jurala Hydro Electric Pr	372.56	372.56
POCHAMPAD Stage-II	0.00	0.00
PULICHINTAL(New Project)	218.20	218.20
Ramagiri Wind Mills	0.00	0.00
Pochampad Stage-IV	11.68	11.68
MINI HYDRO&OTHERS	77.91	77.91
2014-21 Review petition order	0.00	0.00
Supplementary Bill	0.00	0.00
Colony Consumption	-7.19	-7.19
<b>TOTAL HYDRO</b>	<b>3812.68</b>	<b>3812.68</b>
<b>TOTAL TSGENCO</b>	<b>20175.48</b>	<b>20175.48</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1500.21	1500.21
NTPC (SR) Stage III	443.14	443.14
<b>Total NTPC(SR)</b>	<b>1943.34</b>	<b>1943.34</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00
Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00
Talcher Stage 2	1099.40	1099.40
NTPC Aravali	0.00	0.00
<b>Total NTPC(ER)</b>	<b>1099.40</b>	<b>1099.40</b>
<b>Total NTPC</b>	<b>3042.75</b>	<b>3042.75</b>
<b>NLC TS-II</b>		
Stage-I	253.62	253.62
Stage-II	392.64	392.64
<b>Total NLC</b>	<b>646.26</b>	<b>646.26</b>
<b>NPC</b>		
NPC-MAPS	30.11	30.11
NPC-Kaiga unit I	780.34	780.34
NPC-Kaiga unit II	0.00	0.00
<b>Total NPC</b>	<b>810.46</b>	<b>810.46</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	2247.33	2247.33
NTPC Simhadri Stage II	992.27	992.27
<b>Total NTPC- Simhadri</b>	<b>3239.60</b>	<b>3239.60</b>
<b>CGS - New</b>		
Vallur Thermal Power Plant	403.16	403.16
Tuticorin/NLC Tamilnadu Pow	457.47	457.47
NPC-Kundnkulam	246.38	246.38
kudigi	584.08	584.08
NCE-Bundled Power (NVVNL	155.20	155.20
NCE - Bundled Power (Coal)	863.07	863.07
Neyveli new unit - 1	0.00	0.00
Neyveli new unit - 2	0.00	0.00
NNTPS	257.19	257.19
NTPC Aravali	0.00	0.00
<b>TOTAL CGS</b>	<b>10705.61</b>	<b>10705.61</b>
<b>APGPCL</b>		

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APGPCL I - Allocated capacity	0.00	0.00
APGPCL I - Unutilised capacity	0.00	0.00
APGPCL II - Allocated capacity	0.00	0.00
APGPCL II - Unutilised capacity	0.00	0.00
<b>Total AGRPCL</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>		
M/s Thermal Powertech	1513.53	1513.53
Thermal Powertech 570	3081.48	3081.48
Kondapalli (Naphtha)	0.00	0.00
Kondapalli (Gas)	0.00	0.00
BSES	0.00	0.00
GVK Extension	0.00	0.00
Vemagiri	0.00	0.00
Gautami	0.00	0.00
Konaseema	0.00	0.00
<b>TOTAL IPPS</b>	<b>4595.01</b>	<b>4595.01</b>
<b>NCE</b>		
NCE - Bio-Mass	35.29	35.29
NCE - Bagasse	13.09	13.09
NCE - Municipal Waste to Energy	136.90	136.90
NCE - Industrial Waste based	46.25	46.25
NCE - Wind Power	237.64	237.64
NCE - Mini Hydel	0.53	0.53
NCE - NCL Energy Ltd	97.27	97.27
NCE-Solar	3367.65	3367.65
NCE - Bundled Power NRVNL	30.09	30.09
NCE - Bundled Power (Solar)	45.56	45.56
SECI 400 MW	0.00	0.00
NSM-Solar Phase II	0.00	0.00
NSM Sola Phase II	569.31	569.31
<b>TOTAL NCE</b>	<b>4579.57</b>	<b>4579.57</b>
<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni I & II	6189.57	6189.57
Thermal Power Tech	0.00	0.00
CSPGCL	1150.84	1150.84
Thermal Power Tech Unit II	0.00	0.00
<b>TOTAL OTHERS</b>	<b>7340.41</b>	<b>7340.41</b>
<b>MARKET</b>		
PTC	0.00	0.00
Other Short Term Sources	0.00	0.00
D-D purchase/ sale	-958.10	-958.10
Interstate Sale	-2552.75	-2552.75
Trading	4786.16	4786.16
Reactive	0.00	0.00
UI	0.00	0.00
Thermal Incentive 2020-21	0.00	0.00
Advance Income Tax 2020-21	0.00	0.00
Wheeling KPTCL/Reactive KP	0.00	0.00
Wheeling Tantransco/Asset M	0.00	0.00
Netting off GENCO dues TS-A	0.00	0.00
PP Cost 2020-21 Prov,FOR 2021-22	0.00	0.00
Banked Energy	0.00	0.00
GBI RECEIVABLES	0.00	0.00
Others	0.00	0.00
<b>TOTAL MARKET</b>	<b>1275.31</b>	<b>1275.31</b>
<b>TOTAL (From All Sources)</b>	<b>48671.38</b>	<b>48671.38</b>

2022-23

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Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	0.00	0.00
VTPS II	0.00	0.00
VTPS III	0.00	0.00
VTPS IV	0.00	0.00
RTPP I	0.00	0.00
RTPP Stage-II	0.00	0.00
RTPP Stage-III	0.00	0.00
KTPS A	0.00	0.00
KTPS B	0.00	0.00
KTPS C	0.00	0.00
KTPS D	2265.43	2265.43
KTPS Stage VI	2373.90	2373.90
RTS B	223.86	223.86
NTS	0.00	0.00
Kakatiya Thermal Power Plant	2155.02	2045.88
Kakatiya Thermal Power Plant	2870.48	2870.48
BTPS (Manuguru New Project)	1063.14	1063.14
BTPS (Manuguru New Project)	1063.14	1063.14
BTPS (Manuguru New Project)	1063.14	1063.14
BTPS (Manuguru New Project)	1063.14	1063.14
KTPS VII	3368.26	3368.26
YTPS - I	0.00	0.00
TSGENCO provision for water	0.00	0.00
<b>TOTAL THERMAL</b>	<b>17509.52</b>	<b>17400.37</b>
MACHKUND PH TS Share	0.00	0.00
TUNGBHADRA PH TS Share	0.00	0.00
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00
NSPH	1543.64	1543.64
NSRCPH	0.00	0.00
NSLCPH	85.29	85.29
POCHAMPAD PH	71.19	71.19
NIZAMSAGAR PH	18.88	18.88
PABM	0.00	0.00
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	21.53	21.53
SSLM LC PH	1413.43	1413.43
Nagarjunasagar Tail Pond Dam	0.00	0.00
Priyadarshini Jurala Hydro Electric	175.14	175.14
Lower Jurala Hydro Electric Project	313.91	313.91
POCHAMPAD Stage-II	10.62	10.62
PULICHINTAL(New Project)	179.31	179.31
Ramagiri Wind Mills	0.00	0.00
Pochampad Stage-IV	0.00	0.00
Mini Hydel & Others (Peddapati)	6.95	6.95
<b>TOTAL HYDRO</b>	<b>3839.88</b>	<b>3839.88</b>
<b>TOTAL TSGENCO</b>	<b>21349.40</b>	<b>21240.25</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1574.34	1574.34
NTPC (SR) Stage III	404.16	404.16
<b>Total NTPC(SR)</b>	<b>1978.50</b>	<b>1978.50</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00

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Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00
Talcher Stage 2	1211.19	1211.19
Others	0.00	0.00
<b>Total NTPC(ER)</b>	<b>1211.19</b>	<b>1211.19</b>
<b>Total NTPC</b>	<b>3189.69</b>	<b>3189.69</b>
<b>NLC TS-II</b>		
Stage-I	42.48	42.48
Stage-II	71.49	71.49
<b>Total NLC</b>	<b>113.98</b>	<b>113.98</b>
<b>NPC</b>		
NPC-MAPS	45.84	45.84
NPC-Kaiga unit I	550.17	550.17
NPC-Kaiga unit II	143.78	143.78
<b>Total NPC</b>	<b>739.79</b>	<b>739.79</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	2601.15	2601.15
NTPC Simhadri Stage II	1194.69	1194.69
<b>Total NTPC - Simhadri</b>	<b>3795.84</b>	<b>3795.84</b>
<b>CGS - New</b>		
Vallur Thermal Power Plant	555.18	371.10
Tuticorin/NLC Tamilnadu Power	871.58	463.56
NPC-Kundnkulam	252.08	252.08
kudigi	1193.13	638.59
NCE-Bundled Power (NVVNL)	210.68	210.68
NCE - Bundled Power (Coal) (	985.02	985.02
Neyveli new unit - 1	292.68	292.68
Neyveli new unit - 2	22.03	22.03
Telangana STPP (phase I)	816.94	816.94
<b>TOTAL CGS</b>	<b>13038.63</b>	<b>11891.99</b>
<b>APGPCL</b>		
APGPCL I - Allocated capacity	0.00	0.00
APGPCL I - Unutilised capacity	0.00	0.00
APGPCL II - Allocated capacity	0.00	0.00
APGPCL II - Unutilised capacity	0.00	0.00
<b>Total APGPCL</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>		
GVK	0.00	0.00
Spectrum	0.00	0.00
Kondapalli (Naphtha)	0.00	0.00
Kondapalli (Gas)	0.00	0.00
BSES	0.00	0.00
GVK Extension	0.00	0.00
Vemagiri	0.00	0.00
Gautami	0.00	0.00
Konaseema	0.00	0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>		
NCE - Bio-Mass	20.13	20.13
NCE - Bagasse	1.81	1.81
NCE - Municipal Waste to Energy	118.48	118.48
NCE - Industrial Waste based	20.18	20.18
NCE - Wind Power	237.80	237.80
NCE - Mini Hydel	0.00	0.00
NCE - NCL Energy Ltd	0.00	0.00
NCE-Solar	3511.95	3511.95
NCE - Bundled Power NVVNL	26.24	26.24
NCE - Bundled Power (Solar)	555.29	555.29
SECI 400 MW	490.45	490.45
NCE Nidhan Solar Ph I	300.20	300.20
NCE Others	896.55	896.55

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<b>TOTAL NCE</b>	<b>6179.08</b>	<b>6179.08</b>
<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni I & II	6082.49	5440.17
Thermal Power Tech	1577.78	1577.78
CSPGCL	1913.78	1913.78
Thermal Power Tech Unit II	3169.71	2007.97
<b>TOTAL OTHERS</b>	<b>12743.76</b>	<b>10939.69</b>
<b>MARKET</b>		
PTC	0.00	0.00
Other Short Term Sources	2551.34	3161.33
D-D purchase/ sale	838.91	1183.01
Other Costs (STOA, Asset Ma	0.00	0.00
Interest on Pension Bonds	0.00	0.00
Reactive	0.00	0.00
Surplus	-1180.67	-1180.67
UI	0.00	0.00
<b>TOTAL MARKET</b>	<b>2209.58</b>	<b>3163.67</b>
<b>TOTAL (From All Sources)</b>	<b>55520.45</b>	<b>53414.69</b>

2023-24

Generating Station	Availability and Dispatch (MU)	
	Net Availability	Dispatch
<b>TSGENCO</b>		
<b>Thermal</b>		
VTPS I	0.00	0.00
VTPS II	0.00	0.00
VTPS III	0.00	0.00
VTPS IV	0.00	0.00
RTPP I	0.00	0.00
RTPP Stage-II	0.00	0.00
RTPP Stage-III	0.00	0.00
KTPS A	0.00	0.00
KTPS B	0.00	0.00
KTPS C	0.00	0.00
KTPS D	2255.76	2255.76
KTPS Stage VI	2292.97	2292.97
RTS B	261.46	261.46
NTS	0.00	0.00
Kakatiya Thermal Power Plant	2292.93	1973.21
Kakatiya Thermal Power Plant	2766.42	2766.42
BTPS (Manuguru New Project	1301.35	1301.35
BTPS (Manuguru New Project	1301.35	1301.35
BTPS (Manuguru New Project	1301.35	1301.35
BTPS (Manuguru New Project	1301.35	1301.35
KTPS VII	3992.80	3992.80
YTPS - I	1298.95	1298.95
Yadradri - TPS - II	638.83	638.83
<b>TOTAL THERMAL</b>	<b>21005.51</b>	<b>20685.78</b>
MACHKUND PH TS Share	0.00	0.00
TUNGBHADRA PH TS Share	0.00	0.00
USL	0.00	0.00
LSR	0.00	0.00
DONKARAYI	0.00	0.00
SSLM	0.00	0.00
NSPH	0.00	0.00
NSRCPH	1561.74	1561.74
NSLCPH	0.00	0.00
POCHAMPAD PH	114.89	114.89

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NIZAMSAGAR PH	48.56	48.56
PABM	12.16	12.16
MINI HYDRO&OTHERS	0.00	0.00
SINGUR	0.00	0.00
SSLM LCPH	26.98	26.98
Nagarjunasagar Tail Pond Dar	1450.73	1450.73
Priyadarshini Jurala Hydro Ele	0.00	0.00
Lower Jurala Hydro Electric Pr	119.74	119.74
POCHAMPAD Stage-II	252.82	252.82
PULICHINTAL(New Project)	11.68	11.68
Ramagiri Wind Mills	218.20	218.20
Pochampad Stage-IV	0.00	0.00
<b>TOTAL HYDRO</b>	<b>3819.87</b>	<b>3819.87</b>
<b>TOTAL TSGENCO</b>	<b>24825.38</b>	<b>24505.65</b>
<b>Central Generating Stations</b>		
<b>NTPC</b>		
<b>NTPC (SR)</b>		
NTPC (SR)	1892.26	1892.26
NTPC (SR) Stage III	457.80	457.80
<b>Total NTPC(SR)</b>	<b>2350.06</b>	<b>2350.06</b>
<b>NTPC (ER)</b>		
Farakka	0.00	0.00
Kahalgaon	0.00	0.00
Talcher - Stage 1	0.00	0.00
Talcher Stage 2	1126.86	1126.86
Others	0.00	0.00
<b>Total NTPC(ER)</b>	<b>1126.86</b>	<b>1126.86</b>
<b>Total NTPC</b>	<b>3476.92</b>	<b>3476.92</b>
<b>NLC TS-II</b>		
Stage-I	24.80	24.80
Stage-II	32.67	32.67
<b>NNTPP</b>	269.32	269.32
Neyveli new unit - 1	28.75	28.75
Neyveli new unit - 2	21.18	21.18
<b>Total NLC</b>	<b>376.71</b>	<b>376.71</b>
<b>NPC</b>		
NPC-MAPS	39.81	39.81
NPC-Kaiga unit I	301.15	301.15
NPC-Kaiga unit II	326.32	326.32
NPC- Kudankulam	19.67	19.67
Kudankulam (KKNPP) Unit-II	236.20	236.20
<b>Total NPC</b>	<b>923.15</b>	<b>923.15</b>
<b>NTPC - Simhadri</b>		
NTPC Simhadri Stage I	2839.07	2834.96
NTPC Simhadri Stage II	1362.62	1362.62
<b>Total NTPC- Simhadri</b>	<b>4201.70</b>	<b>4197.58</b>
<b>CGS - New</b>		
Vallur Thermal Power Plant	571.78	49.30
Tuticorin/NLC Tamilnadu Powe	1012.83	91.89
kudigi	1453.59	127.14
NCE - Bundled power NVVNL	983.97	983.97
NCE-Bundled Power (NVVNL)	237.30	237.30
Telangana STPP (phase I)	5818.46	5818.46
<b>TOTAL CGS</b>	<b>19056.40</b>	<b>16282.43</b>
<b>APGPCL</b>		
APGPCL I - Allocated capacity	0.00	0.00
APGPCL I - Unutilised capaciti	0.00	0.00
APGPCL II - Allocated capacity	0.00	0.00
APGPCL II - Unutilised capacity	0.00	0.00
<b>Total APGPCL</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>		

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Thermal Power Tech Unit I	1501.24	1501.24
Thermal Power Tech Unit II	3175.75	368.75
<b>TOTAL IPPS</b>	<b>4676.98</b>	<b>1869.99</b>
<b>NCE</b>		
NCE - Bio-Mass	20.13	20.13
NCE - Bagasse	0.00	0.00
NCE - Municipal Waste to Energy	143.37	143.37
NCE - Industrial Waste based	46.24	46.24
NCE - Wind Power	273.83	273.83
NCE - Mini Hydel	0.00	0.00
NCE-Solar	3424.50	3424.50
NCE - Bundled Power NVVN	26.26	26.26
NCE - Bundled Power (Solar)	564.32	564.32
NTPC CPSU Ph-II Tr III (735 MW)	356.69	356.69
SECI 400 MW	558.75	558.75
NTPC CPSU - 1692 MW	1984.81	1984.81
SECI 1000 MW	607.89	607.89
<b>TOTAL NCE</b>	<b>8006.78</b>	<b>8006.78</b>
<b>OTHERS</b>		
Srivathsa	0.00	0.00
LVS	0.00	0.00
Vishakapatnam Steel Plant	0.00	0.00
NB Ferro Alloys	0.00	0.00
Singareni I & II	0.00	0.00
Thermal Power Tech	6307.86	2630.44
CSPGCL		
Thermal Power Tech Unit II	4814.85	4814.85
<b>TOTAL OTHERS</b>	<b>11122.71</b>	<b>7445.29</b>
<b>MARKET</b>		
PTC	0.00	0.00
RCL and Short-Term Sources	0.00	0.00
NPDCCL	0.00	0.00
SPDCL	0.00	0.00
UI	0.00	0.00
Other Short Term Sources	0.00	95.64
D-D Sales/Purchase	0.00	814.52
Interest on Pension Bonds	0.00	
STOA	0.00	0.00
Reactive	0.00	0.00
Wheeling KPTCL	0.00	0.00
Wheeling Tantransco/Asset M	0.00	0.00
Conjestion charges	0.00	0.00
<b>TOTAL MARKET</b>	<b>0.00</b>	<b>910.16</b>
<b>TOTAL (From All Sources)</b>	<b>67688.25</b>	<b>59020.29</b>

## Actual Station wise fixed cost, variable cost, income tax and other cost from FY 2016-17 to 2022-

23

2016-17

Generating Station	Cost (Rs. Crs.)					
	Fixed	Variable	Incentive	Income Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I	249.42	942.25	-	-	-	1191.68
VTPS II			-	-	-	0.00
VTPS III			-	-	-	0.00
VTPS IV	179.04	402.37	-	-	-	581.41
RTPP I	101.77	393.62	-	-	-	495.40
RTPP Stage-II	161.58	393.93	-	-	-	555.51
RTPP Stage-III	108.30	203.08	-	-	-	311.39
KTPS A	147.52	322.79	-			470.31
KTPS B			-			0.00
KTPS C			-			0.00
KTPS D	84.20	215.69	-			299.89
KTPS Stage VI	207.78	256.24	-			464.02
RTS B	19.32	46.87	-			66.18
NTS			-			0.00
Kakatiya Thermal Power Plant Stage I	207.65	237.46	-			445.10
Kakatiya Thermal Power Plant Stage II	596.91	555.72	-	-	-	1152.63
Interest on Pension Bonds(TS GENCO)	611.03	17.89	-	-	-	628.92
Interest on Pension Bonds(AP GENCO)	683.07	-0.91	-	-	-	682.16
<b>TOTAL THERMAL</b>	<b>3357.61</b>	<b>3986.99</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7344.60</b>
MACHKUND PH TS Share	17.71	0.00	-	-	-	17.71
TUNGBHADRA PH TSShare			-	-	-	0.00
USL			-	-	-	0.00
LSR			-	-	-	0.00
DONKARAYI			-	-	-	0.00
SSLM			-	-	-	0.00
NSPH	93.22		-	-	-	93.22
NSRCPH			-	-	-	0.00
NSLCPH	6.86		-	-	-	6.86
POCHAMPAD PH	11.60		-	-	-	11.60
NIZAMSAGAR PH	4.30		-	-	-	4.30
PABM			-	-	-	0.00
MINI HYDRO&OTHERS			-	-	-	0.00
SINGUR	6.44		-	-	-	6.44
SSLM LCPH	325.35		-	-	-	325.35
Nagarjunasagar Tail Pond Dam Power House			-	-	-	0.00
Priyadarshini Jurala Hydro Electric Project-TSShare	41.60		-	-	-	41.60
Lower Jurala Hydro Electric Project	137.06		-	-	-	137.06
POCHAMPAD PH Stage 2	0.00		-	-	-	0.00
PULICHINTAL(New Project)	5.47		-	-	-	5.47



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Mini hydel & others	1.56		-	-	-	1.56
Ramagiri wind mills			-	-	-	0.00
Pochampad St. IIIV (New)	3.74					3.74
<b>TOTAL HYDRO</b>	<b>654.91</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>654.91</b>
<b>TOTAL TSGENCO</b>	<b>4012.52</b>	<b>3986.99</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7999.51</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	-18.19	364.09		-	-	345.89
NTPC (SR) Stage III	38.65	90.61		-	-	129.26
<b>Total NTPC(SR)</b>	<b>20.46</b>	<b>454.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>475.16</b>
<b>NTPC (ER)</b>						
Farakka	0.00	0.00				0.00
Kahalgaon	0.07	0.00				0.07
Talcher - Stage 1	0.03	0.00				0.03
Talcher Stage 2	88.91	186.22				275.12
Others					-	0.00
<b>Total NTPC(ER)</b>	<b>89.00</b>	<b>186.22</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>275.22</b>
<b>Total NTPC</b>	<b>109.46</b>	<b>640.92</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>750.38</b>
<b>NLC TS-II</b>						
Stage-I	29.18	141.40		-	-	170.59
Stage-II	29.32	106.55		-	-	135.86
<b>Total NLC</b>	<b>58.50</b>	<b>247.95</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>306.45</b>
<b>NPC</b>						
NPC-MAPS	0.00	22.09				22.09
NPC-Kaiga unit I	0.00	119.27				119.27
NPC-Kaiga unit II	0.00	102.35				102.35
<b>Total NPC</b>	<b>0.00</b>	<b>243.71</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>243.71</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	243.72	721.01		-	-	964.73
NTPC Simhadri Stage II	191.23	239.11		-	-	430.34
<b>Total NTPC- Simhadri</b>	<b>434.95</b>	<b>960.12</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1395.07</b>
<b>CGS - New</b>						
<b>Vallur Thermal Power Plant</b>	<b>91.55</b>	<b>105.34</b>				<b>196.89</b>
NTPC Aravalli Power	13.44	30.35				43.79
NLC Tamilnadu Power Ltd.	98.79	137.02				235.82
NVVNL B.P.Coal	1.59	69.36				70.95
<b>TOTAL CGS</b>	<b>808.29</b>	<b>2434.77</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3243.06</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity	1.25	2.45	-	-	-	3.70
APGPCL I - Unutilised capacity			-	-	-	0.00
APGPCL II - Allocated capacity	1.83	7.80	-	-	-	9.63
APGPCL II - Unutilised capacity	-	-	-	-	-	0.00
<b>Total APGPCL</b>	<b>3.08</b>	<b>10.25</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>13.34</b>
<b>IPPS</b>						
GVK	-	-	-	-	-	0.00
Spectrum	0.00	3.73	-	-	-	3.73

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Kondapalli (Naphtha)			-	-	-	0.00
Kondapalli (Gas)	62.04	0.06			-	62.11
BSES					-	0.00
GVK Extension					-	0.00
Vemagiri	1.10	-0.78	-	-	-	0.31
Gautami	-	-	-	-	-	0.00
Konaseema	-	-	-	-	-	0.00
<b>TOTAL IPPS</b>	<b>63.14</b>	<b>3.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>66.15</b>
<b>NCE</b>						
NCE - Bio-Mass	28.14				-3.22	24.92
NCE - Bagasse	2.98					2.98
NCE - Municipal Waste to Energy						0.00
NCE - Industrial Waste based power project	7.11					7.11
NCE - Wind Power	97.30					97.30
NCE - Mini Hydel	0.38					0.38
NCE - NCL Energy Ltd						0.00
NCE-Others	649.38	39.47			-8.61	680.24
<b>TOTAL NCE</b>	<b>785.30</b>	<b>39.47</b>	<b>0.00</b>	<b>0.00</b>	<b>-11.82</b>	<b>812.95</b>
<b>OTHERS</b>						
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00
NB Ferro Alloys						0.00
Singareni-I	213.37	323.56				536.93
Singareni II	146.24	317.61				463.85
Thermal Power Unit 1	232.94	248.11				481.06
Thermal Power Unit 2	743.63	548.22				1291.85
<b>TOTAL OTHERS</b>	<b>1336.18</b>	<b>1437.50</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2773.68</b>
<b>MARKET</b>						
PTC						0.00
RCL and Short-Term Sources(IG Wells,Kesoram)						0.00
CPDCL						0.00
EPDCL						0.00
NPDCL						0.00
SPDCL						0.00
UI	0.00	16.63				16.63
Other Short Term Sources	0.00	2040.98				2040.98
STOA charges		232.88				232.88
						0.00
IBSS 15-16		172.88				172.88
IBSS 14-15		2.17				2.17
PP cost provision 16-17		15.38				15.38
Interstate sale		-24.02				-24.02
Others (RRAs, GBI, Penalty for non-booking corridor by TPCIL)		-61.77				-61.77
<b>TOTAL MARKET</b>	<b>0.00</b>	<b>2395.12</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2395.12</b>

<b>TOTAL (From All Sources)</b>	<b>7008.51</b>	<b>10307.11</b>	<b>0.00</b>	<b>0.00</b>	<b>-11.82</b>	<b>17303.80</b>
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## 2017-18

Generating Station	Cost (Rs. Crs.)					
	Fixed	Variable	Incentive	Income Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I	16.17	56.61	0.00	0.00	8.16	80.94
VTPS II	16.17	56.61	0.00	0.00	8.16	80.94
VTPS III	16.17	56.61	0.00	0.00	8.16	80.94
VTPS IV	34.81	78.95	0.00	0.00	9.72	123.48
RTPP I	19.79	83.88	0.00	0.00	8.16	111.84
RTPP Stage-II	31.42	87.14	0.00	0.00	8.16	126.72
RTPP Stage-III	21.06	38.04	0.00	0.00	4.08	63.18
KTPS A	121.20	175.23	0.00	0.00	22.28	318.71
KTPS B	121.20	203.13	0.00	0.00	22.28	346.60
KTPS C	121.20	203.13	0.00	0.00	22.28	346.61
KTPS D	178.38	405.88	0.00	0.00	46.41	630.68
KTPS Stage VI	340.95	471.65	0.00	0.00	46.41	859.02
RTS B	33.60	67.12	0.00	0.00	5.80	106.52
NTS	-	-	-	-	-	0.00
Kakatiya Thermal Power Plant Stage I	352.49	468.83	0.00	0.00	46.41	867.74
Kakatiya Thermal Power Plant Stage II	545.01	624.23	0.00	0.00	0.00	1169.24
BTPS (Manuguru New Project)						0.00
KTPS VII						0.00
<b>TOTAL THERMAL</b>	<b>1969.61</b>	<b>3077.02</b>	<b>0.00</b>	<b>0.00</b>	<b>266.50</b>	<b>5313.14</b>
MACHKUND PH TS Share	5.32	0.00	0.00	0.00	0.00	5.32
TUNGBHADRA PH TS Share	2.63	0.00	0.00	0.00	0.00	2.63
USL	-	-	-	-	-	0.00
LSR	-	-	-	-	-	0.00
DONKARAYI	-	-	-	-	-	0.00
SSLM	-	-	-	-	-	0.00
NSPH	93.98	0.00	0.00	0.00	75.71	169.70
NSRCPH	-	-	-	-	-	0.00
NSLCPH	6.91	0.00	0.00	0.00	5.57	12.48
POCHAMPAD PH	8.55	0.00	0.00	0.00	2.51	11.05
NIZAMSAGAR PH	4.81	0.00	0.00	0.00	0.93	5.74
PABM	-	-	-	-	-	0.00
MINI HYDRO&OTHERS	-	-	-	-	-	0.00
SINGUR	7.21	0.00	0.00	0.00	1.39	8.60
SSLM LCPH	319.98	0.00	0.00	0.00	83.55	403.53
Nagarjunasagar Tail Pond Dam Power House	-	-	-	-	-	0.00
Priyadarshini Jurala Hydro Electric Project- TS Share	42.15	0.00	0.00	0.00	10.86	53.01
Lower Jurala Hydro Electric Project	206.20	0.00	0.00	0.00	0.00	206.20
POCHAMPAD Stage-II	5.18	0.00	0.00	0.00	0.84	6.02
PULICHINTAL(New Project)	33.60	0.00	0.00	0.00	0.00	33.60

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Mini Hydel & Others (Peddapalli, Palair)	7.66	0.00	0.00	0.00	1.04	8.70
Ramagiri Wind Mills (AP)	—	—	—	—	—	0.00
Pochampad Stage-IV	—	—	—	—	—	0.00
<b>TOTAL HYDRO</b>	<b>744.19</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>182.39</b>	<b>926.58</b>
<b>TOTAL TSGENCO</b>	<b>2713.80</b>	<b>3077.02</b>	<b>0.00</b>	<b>0.00</b>	<b>448.89</b>	<b>6239.72</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	113.07	377.99	0.60	0.00	0.07	491.74
NTPC (SR) Stage III	31.68	97.10	0.00	0.00	0.04	128.81
<b>Total NTPC(SR)</b>	<b>144.75</b>	<b>475.09</b>	<b>0.60</b>	<b>0.00</b>	<b>0.11</b>	<b>620.55</b>
<b>NTPC (ER)</b>						
Farakka						0.00
Kahalgaon						0.00
Talcher - Stage 1						0.00
Talcher Stage 2	72.81	152.07	0.00	0.00	0.05	224.92
Others						0.00
<b>Total NTPC(ER)</b>	<b>72.81</b>	<b>152.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.05</b>	<b>224.92</b>
<b>Total NTPC</b>	<b>217.55</b>	<b>627.16</b>	<b>0.60</b>	<b>0.00</b>	<b>0.16</b>	<b>845.47</b>
<b>NLC TS-II</b>						
Stage-I	17.03	26.20	0.00	0.00	0.00	43.23
Stage-II	29.56	53.72	0.00	0.00	0.00	83.29
<b>Total NLC</b>	<b>46.59</b>	<b>79.92</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>126.52</b>
<b>NPC</b>						
NPC-MAPS	0.00	40.56	0.00	0.00	0.00	40.56
NPC-Kaiga unit I	0.00	119.76	0.00	0.00	0.01	119.77
NPC-Kaiga unit II	0.00	127.89	0.00	0.00	0.01	127.90
<b>Total NPC</b>	<b>0.00</b>	<b>288.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>288.24</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	261.55	511.06	0.91	0.00	0.04	773.56
NTPC Simhadri Stage II	159.02	119.74	0.00	0.00	0.04	278.80
<b>Total NTPC- Simhadri</b>	<b>420.57</b>	<b>630.80</b>	<b>0.91</b>	<b>0.00</b>	<b>0.08</b>	<b>1052.37</b>
<b>CGS - New</b>						
Vallur Thermal Power Plant	73.73	89.57	0.00	0.00	0.02	163.33
Tuticorin	107.63	59.16	0.00	0.00	0.03	166.81
NPC- Kudankulam	0.00	63.25	30.05	0.00	0.01	93.31
<b>NCE -Bundled power NVVNL (Coal)</b>	<b>0.00</b>	<b>225.69</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>225.70</b>
Kudigi	37.25	10.07	0.00	0.00	0.00	47.33
<b>TOTAL CGS</b>	<b>903.33</b>	<b>2073.82</b>	<b>31.57</b>	<b>0.00</b>	<b>0.35</b>	<b>3009.07</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity	1.74	3.86	0.00	0.00	0.00	5.60
APGPCL I - Unutilised capacity	—	—	—	—	—	0.00
APGPCL II - Allocated capacity	3.59	12.84	0.00	0.00	0.00	16.43
APGPCL II - Unutilised capacity						0.00
<b>Total APGPCL</b>	<b>5.33</b>	<b>16.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>22.03</b>
<b>IPPS</b>						
GVK						0.00

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Spectrum						0.00
Kondapalli (Naphtha)						0.00
Kondapalli (Gas)						0.00
BSES						0.00
GVK Extension						0.00
Vemagiri						0.00
Gautami						0.00
Konaseema						0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>						
NCE - Bio-Mass	0.00	24.49	0.00	0.00	0.00	24.49
NCE - Bagasse	0.00	3.49	0.00	0.00	0.00	3.49
NCE - Municipal Waste to Energy	0.00	0.00	0.00	0.00	0.00	0.00
NCE - Industrial Waste based power project	0.00	15.41	0.00	0.00	0.00	15.41
NCE - Wind Power	0.00	86.52	0.00	0.00	0.00	86.52
NCE - Mini Hydel	0.47	0.00	0.00	0.00	0.00	0.47
NCE - NCL Energy Ltd	0.00	0.00	0.00	0.00	0.00	0.00
NCE-Others	0.00	1515.89	0.00	0.00	0.00	1515.89
<b>TOTAL NCE</b>	<b>0.47</b>	<b>1645.80</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1646.27</b>
<b>OTHERS</b>						
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00
NB Ferro Alloys						0.00
Singareni	1012.44	1298.82	0.00	0.00	0.75	2312.01
Thermal Power Tech	263.12	272.92	0.97	0.00	0.00	537.01
CSPGCL	1210.46	409.90	0.00	0.00	0.00	1620.36
Thermal Power Tech Unit II	821.05	688.27	0.00	0.00	0.00	1509.32
<b>TOTAL OTHERS</b>	<b>3307.06</b>	<b>2669.92</b>	<b>0.97</b>	<b>0.00</b>	<b>0.75</b>	<b>5978.70</b>
<b>MARKET</b>						
PTC						0.00
RCL and Short-Term Sources(IG Wells,Kesoram)						0.00
CPDCL						0.00
EPDCL						0.00
NPDCL						0.00
SPDCL						0.00
UI						0.00
Other Short Term Sources	0.00	1439.03	0.00	0.00	124.04	1563.07
D-D Sales/Purchases		-151.69				-151.69
Bi-lateral Purchases( PTC etc.)						0.00
Pool Transaction (Purchases)						0.00
Pool Transaction ( Sales)						0.00
<b>TOTAL MARKET</b>	<b>0.00</b>	<b>1287.34</b>	<b>0.00</b>	<b>0.00</b>	<b>124.04</b>	<b>1411.38</b>
<b>TOTAL (From All Sources)</b>	<b>6929.98</b>	<b>10770.60</b>	<b>32.54</b>	<b>0.00</b>	<b>574.03</b>	<b>18307.16</b>

Base Year

	Cost (Rs. Crs.)
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Generating Station	Fixed	Variable	Incentive	Income Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I						0.00
VTPS II						0.00
VTPS III						0.00
VTPS IV						0.00
RTPP I						0.00
RTPP Stage-II						0.00
RTPP Stage-III						0.00
KTPS A	94.35	239.76				334.11
KTPS B	94.35	239.76				334.11
KTPS C	94.35	239.76				334.11
KTPS D	194.69	679.08				873.77
KTPS Stage VI	348.69	784.69				1133.38
RTS B	37.64	76.72				114.36
NTS	0.00	0.00				0.00
Kakatiya Thermal Power Plant Stage I	360.31	868.59				1228.90
Kakatiya Thermal Power Plant Stage II	437.57	751.06				1188.63
BTPS (Manuguru New Project)	0.00	0.00				0.00
KTPS VII	228.38	323.32				551.69
<b>TOTAL THERMAL</b>	<b>1890.32</b>	<b>4202.74</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6093.06</b>
MACHKUND PH TS Share						0.00
TUNGBHADRA PH TS Share						0.00
USL						0.00
LSR						0.00
DONKARAYI						0.00
SSLM						0.00
NSPH	194.56	0.00				194.56
NSRCPH						0.00
NSLCPH						0.00
POCHAMPAD PH	4.88	0.00				4.88
NIZAMSAGAR PH	-0.16	0.00				-0.16
PABM						0.00
MINI HYDRO&OTHERS						0.00
SINGUR	23.10	0.00				23.10
SSLM LCPH	283.00	0.00				283.00
Nagarjunasagar Tail Pond Dam Power House						0.00
Priyadarshini Jurala Hydro Electric Project- AP Share	37.98	0.00				37.98
Lower Jurala Hydro Electric Project	196.56	0.00				196.56
POCHAMPAD Stage-II						0.00
PULICHINTAL(New Project)	50.52	0.00				50.52
Mini Hydel & Others (Peddapalli, Palair)	4.77	0.00				4.77
Ramagiri Wind Mills (AP)						0.00
Pochampad Stage-IV						0.00

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<b>TOTAL HYDRO</b>	<b>795.22</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>795.22</b>
<b>TOTAL TSGENCO</b>	<b>2685.54</b>	<b>4202.74</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6888.28</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	132.28	431.34				563.61
NTPC (SR) Stage III	34.83	98.72				133.55
<b>Total NTPC(SR)</b>	<b>167.11</b>	<b>530.06</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>697.17</b>
<b>NTPC (ER)</b>						
Farakka	-0.01	0.00				-0.01
Kahalgaon	0.00	0.00				0.00
Talcher - Stage 1	-0.01	0.00				-0.01
Talcher Stage 2	83.71	169.66				253.37
Others						0.00
<b>Total NTPC(ER)</b>	<b>83.69</b>	<b>169.66</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>253.35</b>
<b>Total NTPC</b>	<b>250.80</b>	<b>699.72</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>950.52</b>
<b>NLC TS-II</b>						
Stage-I	33.18	56.34				89.52
Stage-II	28.68	105.74				134.41
<b>Total NLC</b>	<b>61.86</b>	<b>162.08</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>223.93</b>
<b>NPC</b>						
NPC-MAPS	0.00	11.77				11.77
NPC-Kaiga unit I	0.00	289.74				289.74
NPC-Kaiga unit II						0.00
<b>Total NPC</b>	<b>0.00</b>	<b>301.51</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>301.51</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	312.75	708.71				1021.46
NTPC Simhadri Stage II	189.47	260.83				450.30
<b>Total NTPC- Simhadri</b>	<b>502.22</b>	<b>969.54</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1471.76</b>
<b>CGS - New</b>						
Vallur Thermal Power Plant	93.70	126.02				219.72
Tuticorin/NLC Tamilnadu Power Ltd	139.69	159.38				299.06
NPC-Kundnkulam	0.00	45.17				45.17
kudigi	187.06	237.45				424.51
NTPC Aravali Power						0.00
NCE - Bundled Power (Coal) ( NTPC 200 MW)	0.00	367.68				367.68
NCE-Bundled Power (NVVNL) coal	0.00	72.68				72.68
<b>TOTAL CGS</b>	<b>1235.32</b>	<b>3141.23</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4376.55</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity	1.02	4.27				5.29
APGPCL I - Unutilised capacity						0.00
APGPCL II - Allocated capacity	1.76	11.12				12.88
APGPCL II - Unutilised capacity						0.00
<b>Total APGPCL</b>	<b>2.79</b>	<b>15.39</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>18.17</b>
<b>IPPS</b>						
GVK						0.00
Spectrum						0.00

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Kondapalli (Naphtha)						0.00
Kondapalli (Gas)	0.41					0.41
BSES						0.00
GVK Extension						0.00
Vemagiri						0.00
Gautami						0.00
Konaseema						0.00
<b>TOTAL IPPS</b>	<b>0.41</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.41</b>
<b>NCE</b>						
NCE - Bio-Mass		18.93				18.93
NCE - Bagasse		10.35				10.35
NCE - Municipal Waste to Energy		0.00				0.00
NCE - Industrial Waste based power project		28.79				28.79
NCE - Wind Power		108.18				108.18
NCE - Mini Hydel	0.61					0.61
NCE - NCL Energy Ltd		0.00				0.00
NCE-Solar		2162.67				2162.67
NCE - Bundled Power NVVNL (solar) JNNM Ph 1		43.24				43.24
NCE - Bundled Power (Solar) (NTPC 400 MW)		273.71				273.71
NCE-Others		0.00				0.00
<b>TOTAL NCE</b>	<b>0.61</b>	<b>2645.86</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2646.48</b>
<b>OTHERS</b>						
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00
NB Ferro Alloys						0.00
Singareni I & II	1052.56	1388.90				2441.46
Thermal Power Tech	233.38	281.61				514.99
CSPGCL	1015.10	451.16				1466.26
Thermal Power Tech Unit II	706.66	631.67				1338.34
<b>TOTAL OTHERS</b>	<b>3007.70</b>	<b>2753.34</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5761.05</b>
<b>MARKET</b>						
Bilateral Sales (PTC etc.)	47.77	2293.46			103.85	2445.09
Sale of Power		-432.21				-432.21
D-D Sales/Purchase & UI		-374.86				-374.86
UI-SRPC/Deviation charges		80.86				80.86
Interest on Pension Bonds	482.80					482.80
Reactive	4.11					4.11
Wheeling KPTCL	0.09					0.09
Wheeling Tantransco/Asset Maintenance & RKM (PTC)	41.30					41.30
Thermal incentive 18-19/ROCE True up	18.98					18.98
Adv Income Tax 2018-19	18.22					18.22
STOA Prov 2018-19	6.30					6.30
Miscellaneous (Provisional Reversal 2017-18 etc.,)	-47.15					-47.15
<b>TOTAL MARKET</b>	<b>572.43</b>	<b>1567.26</b>	<b>0.00</b>	<b>0.00</b>	<b>103.85</b>	<b>2243.53</b>



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<b>TOTAL (From All Sources)</b>	<b>7504.80</b>	<b>14325.82</b>	<b>0.00</b>	<b>0.00</b>	<b>103.85</b>	<b>21934.46</b>
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## 2019-20

Generating Station	Cost (Rs. Crs.)					
	Fixed	Variable	Incentive	Inc. Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I						0.00
VTPS II						0.00
VTPS III						0.00
VTPS IV						0.00
RTPP I						0.00
RTPP Stage-II						0.00
RTPP Stage-III						0.00
KTPS A	100.54	202.49			0.27	303.30
KTPS B	67.03	134.99			0.18	202.20
KTPS C	67.03	134.99			0.18	202.20
KTPS D	202.46	626.20			0.99	829.65
KTPS Stage VI	367.70	651.87			1.05	1020.62
RTS B	38.44	73.84			0.11	112.39
NTS						0.00
Kakatiya Thermal Power Plant Stage I	366.04	618.79			0.90	985.73
Kakatiya Thermal Power Plant Stage II	545.94	867.54			1.31	1414.79
BTPS (Manuguru New Project) - Unit 1						0.00
BTPS (Manuguru New Project) - Unit 2						0.00
BTPS (Manuguru New Project) - Unit 3						0.00
BTPS (Manuguru New Project) - Unit 4						0.00
KTPS VII	291.93	609.58			1.05	902.56
<b>TOTAL THERMAL</b>	<b>2047.11</b>	<b>3920.30</b>	<b>0.00</b>	<b>0.00</b>	<b>6.03</b>	<b>5973.44</b>
MACHKUND PH TS Share						0.00
TUNGBHADRA PH TS Share						0.00
USL						0.00
LSR						0.00
DONKARAYI						0.00
SSLM						0.00
NSPH	190.13				-0.26	189.88
NSRCPH						0.00
NSLCPH						0.00
POCHAMPAD PH	5.57				-0.01	5.56
NIZAMSAGAR PH	0.00				0.00	0.00
PABM						0.00
MINI HYDRO&OTHERS						0.00
SINGUR	23.27				-0.03	23.24
SSLM LCPH	310.46				-0.42	310.04
Nagarjunasagar Tail Pond Dam Power House						0.00
Priyadarshini Jurala Hydro Electric Project- AP Share	41.38				-0.06	41.33
Lower Jurala Hydro Electric Project	200.69				-0.27	200.42

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POCHAMPAD Stage-II						0.00
PULICHINTAL(New Project)	57.00				-0.08	56.92
Mini Hydel & Others (Peddapalli, Palair)	4.80				-0.01	4.80
Ramagiri Wind Mills (AP)						0.00
Pochampad Stage-IV						0.00
<b>TOTAL HYDRO</b>	<b>833.30</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>-1.12</b>	<b>832.18</b>
<b>TOTAL TSGENCO</b>	<b>2880.41</b>	<b>3920.30</b>	<b>0.00</b>	<b>0.00</b>	<b>4.91</b>	<b>6805.62</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	114.43	361.79			14.81	491.02
NTPC (SR) Stage III	30.47	99.04			4.03	133.53
<b>Total NTPC(SR)</b>	<b>144.90</b>	<b>460.82</b>	<b>0.00</b>	<b>0.00</b>	<b>18.84</b>	<b>624.56</b>
<b>NTPC (ER)</b>						
Farakka	0.002	0.00			0.00	0.00
Kahalgaoon	0.001	0.00			0.00	0.00
Talcher - Stage 1	0.00	0.00				0.00
Talcher Stage 2	76.10	197.04			8.49	281.63
Others						0.00
<b>Total NTPC(ER)</b>	<b>76.10</b>	<b>197.04</b>	<b>0.00</b>	<b>0.00</b>	<b>8.49</b>	<b>281.64</b>
<b>Total NTPC</b>	<b>221.00</b>	<b>657.86</b>	<b>0.00</b>	<b>0.00</b>	<b>27.33</b>	<b>906.19</b>
<b>NLC TS-II</b>						
Stage-I	19.76	70.05			2.83	92.64
Stage-II	35.78	120.20			4.91	160.90
<b>Total NLC</b>	<b>55.54</b>	<b>190.26</b>	<b>0.00</b>	<b>0.00</b>	<b>7.74</b>	<b>253.54</b>
<b>NPC</b>						
NPC-MAPS	0.00	2.33			0.07	2.40
NPC-Kaiga unit I	0.00	99.40			3.09	102.49
NPC-Kaiga unit II	0.00	99.40			3.09	102.49
<b>Total NPC</b>	<b>0.00</b>	<b>201.13</b>	<b>0.00</b>	<b>0.00</b>	<b>6.25</b>	<b>207.39</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	274.01	635.70			28.29	938.00
NTPC Simhadri Stage II	165.32	284.30			13.98	463.60
<b>Total NTPC- Simhadri</b>	<b>439.33</b>	<b>920.00</b>	<b>0.00</b>	<b>0.00</b>	<b>42.27</b>	<b>1401.60</b>
<b>CGS - New</b>						
Vallur Thermal Power Plant	98.18	134.90			7.25	240.33
Tuticorin/NLC Tamilnadu Power Ltd	112.61	154.79			8.32	275.71
NPC-Kundnkulam		53.12			1.65	54.78
kudigi	235.71	147.27			11.91	394.89
NCE-Bundled Power (NVVNL) coal		71.29			2.22	73.50
NCE - Bundled Power (Coal) ( NTPC 200 MW)		387.76			36.19	423.96
Neyveli new unit - 1	4.10	5.51			0.30	9.91
NTPC Aravali Power	3.77	0.00			0.12	3.88
<b>TOTAL CGS</b>	<b>1170.23</b>	<b>2923.90</b>	<b>0.00</b>	<b>0.00</b>	<b>151.55</b>	<b>4245.68</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity	0.53	2.24				2.76
APGPCL I - Unutilised capacity						0.00

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APGPCL II - Allocated capacity	0.97	5.73				6.70
APGPCL II - Unutilised capacity						0.00
<b>Total APGPCL</b>	<b>1.50</b>	<b>7.97</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9.47</b>
<b>IPPS</b>						
GVK						0.00
Spectrum						0.00
Kondapalli (Naphtha)						0.00
Kondapalli (Gas)						0.00
BSES						0.00
GVK Extension						0.00
Vemagiri						0.00
Gautami						0.00
Konaseema						0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>						
NCE - Bio-Mass		23.85				23.85
NCE - Bagasse		3.86				3.86
NCE - Municipal Waste to Energy		0.00				0.00
NCE - Industrial Waste based power project		5.89				5.89
NCE - Wind Power		82.24				82.24
NCE - Mini Hydel	0.81					0.81
NCE - NCL Energy Ltd						0.00
NCE-Solar		2134.83			-8.08	2126.75
NCE - Bundled Power NVVNL (solar) JNNM Ph 1		43.71				43.71
NCE - Bundled Power (Solar) (NTPC 400 MW)		269.32				269.32
NCE-Others						0.00
<b>TOTAL NCE</b>	<b>0.81</b>	<b>2563.69</b>	<b>0.00</b>	<b>0.00</b>	<b>-8.08</b>	<b>2556.42</b>
<b>OTHERS</b>						0.00
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00
NB Ferro Alloys						0.00
Singareni I & II	1074.32	1705.44				2779.76
Thermal Power Tech	243.22	491.11				734.34
CSPGCL	427.65	190.07				617.72
Thermal Power Tech Unit II	776.79	775.67				1552.46
<b>TOTAL OTHERS</b>	<b>2521.98</b>	<b>3162.30</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5684.28</b>
<b>MARKET</b>						
Bilateral Sales (RTC, PTC etc.,)		1770.26				1770.26
D-D /Interstate Sale/UI		-900.07				-900.07
STOA Compensation		60.26				60.26
Interest on Pension Bonds	1031.42	-209.69				821.73
Wheeling KPTCL	0.02					0.02
Wheeling TNEB/Asset Maintenance	0.19					0.19
Reactive	5.20					5.20
Inter Discom Cost	6.85					6.85

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Banked energy 16-17	0.97					0.97
Miscellaneous (Provisions reversal 18-19 CGS, NCEs,STOA etc..)	-28.99					-28.99
<b>TOTAL MARKET</b>	<b>1015.66</b>	<b>720.76</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1736.42</b>
<b>TOTAL (From All Sources)</b>	<b>7590.59</b>	<b>13298.91</b>	<b>0.00</b>	<b>0.00</b>	<b>148.38</b>	<b>21037.88</b>

2020-21

Generating Station	Cost (Rs. Crs.)					
	Fixed	Variable	Incentive	Income Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I						0.00
VTPS II						0.00
VTPS III						0.00
VTPS IV						0.00
RTPP I						0.00
RTPP Stage-II						0.00
RTPP Stage-III						0.00
KTPS A						0.00
KTPS B						0.00
KTPS C						0.00
KTPS D	193.88	458.07				651.95
KTPS Stage VI	362.66	638.36				1001.02
RTS B	35.90	54.38				90.28
NTS	0.00	0.00				0.00
Kakatiya Thermal Power Plant Stage I	374.41	430.56				804.97
Kakatiya Thermal Power Plant Stage II	534.56	658.86				1193.42
BTPS	393.57	294.75				688.32
KTPS VII	733.96	940.75				1674.71
<b>TOTAL THERMAL</b>	<b>2628.94</b>	<b>3475.74</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6104.68</b>
MACHKUND PH TS Share						0.00
TUNGBHADRA PH TS Share						0.00
USL						0.00
LSR						0.00
DONKARAYI						0.00
SSLM						0.00
NSPH	187.61					187.61
NSRCPH						0.00
NSLCPH						0.00
POCHAMPAD PH	16.43					16.43
NIZAMSAGAR PH	0.00					0.00
PABM						0.00
MINI HYDRO&OTHERS						0.00
SINGUR	6.85					6.85
SSLM LCPH	243.61					243.61
Nagarjunasagar Tail Pond Dam Power House						0.00
Priyadarshini Jurala Hydro Electric Project- AP Share	40.29					40.29

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Lower Jurala Hydro Electric Project	200.69					200.69
POCHAMPAD Stage-II						0.00
PULICHINTAL(New Project)	57.00					57.00
Ramagiri Wind Mills						0.00
Pochampad Stage-IV	5.57					5.57
Mini Hydel & Others (Peddapalli, Palair)	4.80					4.80
<b>TOTAL HYDRO</b>	<b>762.84</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>762.84</b>
<b>TOTAL TSGENCO</b>	<b>3391.79</b>	<b>3475.74</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6867.52</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	114.13	363.18			65.20	542.51
NTPC (SR) Stage III	28.62	84.11				112.73
<b>Total NTPC(SR)</b>	<b>142.75</b>	<b>447.29</b>	<b>0.00</b>	<b>0.00</b>	<b>65.20</b>	<b>655.24</b>
<b>NTPC (ER)</b>						
Farakka						0.00
Kahalgaon						0.00
Talcher - Stage 1						0.00
Talcher Stage 2	77.93	206.76				284.69
Others						0.00
<b>Total NTPC(ER)</b>	<b>77.93</b>	<b>206.76</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>284.69</b>
<b>Total NTPC</b>	<b>220.68</b>	<b>654.05</b>	<b>0.00</b>	<b>0.00</b>	<b>65.20</b>	<b>939.93</b>
<b>NLC TS-II</b>						
Stage-I	15.45	56.72			59.03	131.21
Stage-II	19.80	60.27				80.07
<b>Total NLC</b>	<b>35.25</b>	<b>116.99</b>	<b>0.00</b>	<b>0.00</b>	<b>59.03</b>	<b>211.28</b>
<b>NPC</b>						
NPC-MAPS	0.00	12.73				12.73
NPC-Kaiga unit I	0.00	255.87			9.37	265.24
NPC-Kaiga unit II						0.00
<b>Total NPC</b>	<b>0.00</b>	<b>268.60</b>	<b>0.00</b>	<b>0.00</b>	<b>9.37</b>	<b>277.97</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	284.61	372.53				657.14
NTPC Simhadri Stage II	171.49	238.96				410.45
<b>Total NTPC- Simhadri</b>	<b>456.09</b>	<b>611.49</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1067.58</b>
<b>CGS - New</b>						
Vallur Thermal Power Plant	91.99	56.82			25.72	174.54
Tuticorin/NLC Tamilnadu Power Ltd	119.97	162.33			32.42	314.72
NPC-Kundnkulam	0.00	85.99				85.99
kudigi	212.80	117.76				330.55
NCE-Bundled Power (NVVNL) coal	0.00	64.13				64.13
NCE - Bundled Power (Coal) ( NTPC 200 MW)	0.00	305.89			65.58	371.48
NNTPS	24.35	30.96				55.30
<b>TOTAL CGS</b>	<b>1161.13</b>	<b>2475.01</b>	<b>0.00</b>	<b>0.00</b>	<b>257.32</b>	<b>3893.46</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity	0.00	0.00				0.00
APGPCL I - Unutilised capacity						0.00

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APGPCL II - Allocated capacity	0.00	0.00				0.00
APGPCL II - Unutilised capacity						0.00
<b>Total APGPCL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>						
GVK						0.00
Spectrum						0.00
Kondapalli (Naphtha)						0.00
Kondapalli (Gas)						0.00
BSES						0.00
GVK Extension						0.00
Vemagiri						0.00
Gautami						0.00
Konaseema						0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>						
NCE - Bio-Mass	0.00	35.67			0.52	36.19
NCE - Bagasse	0.00	3.62			0.00	3.62
NCE - Municipal Waste to Energy	0.00	45.28			1.56	46.84
NCE - Industrial Waste based power project	0.00	22.06			0.63	22.69
NCE - Wind Power	0.00	91.56			2.37	93.93
NCE - Mini Hydel	0.81	0.00			0.003	0.82
NCE - NCL Energy Ltd						0.00
NCE-Solar	0.00	2125.05			-4.71	2120.34
NCE - Bundled Power NVVNL (solar) JNNM Ph 1	0.00	39.24				39.24
NCE - Bundled Power (Solar) (NTPC 400 MW)	0.00	276.54			52.21	328.75
<b>TOTAL NCE</b>	<b>0.81</b>	<b>2639.02</b>	<b>0.00</b>	<b>0.00</b>	<b>52.58</b>	<b>2692.41</b>
<b>OTHERS</b>						
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00
NB Ferro Alloys						0.00
Singareni I & II	1037.83	1235.46			8.93	2282.22
Thermal Power Tech	744.66	630.64			77.56	1452.86
CSPGCL	627.17	277.29				904.46
Thermal Power Tech Unit II	266.91	309.24			15.38	591.53
<b>TOTAL OTHERS</b>	<b>2676.57</b>	<b>2452.63</b>	<b>0.00</b>	<b>0.00</b>	<b>101.86</b>	<b>5231.07</b>
<b>MARKET</b>						
Short Term Power (PTC & others)	296.08	2130.63			70.89	2497.61
D-D purchase/ sale	0.00	-846.42				-846.42
Interstate Sale/UI/Sale/Purchase in 33kV & below		-217.80				-217.80
Interest on Pension Bonds	827.28					827.28
UI-SRPC/Deviation charges	24.24					24.24
Thermal Incentive 2020-21	11.80					11.80
Advance Income Tax 2020-21(Net)	1.07					1.07
Wheeling KPTCL/Reactive KPTCL/AP	0.01					0.01
Wheeling Tantransco/Asset Maintenance	0.16					0.16

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Reactive	9.65					9.65
Receivable from TRANSCO towards LIS Funds	-262.13					-262.13
Miscellaneous (GBI Receivables, Received from Saraswati power, LPSC, Banked energy in one time vendor)	25.38					25.38
<b>TOTAL MARKET</b>	<b>933.54</b>	<b>1066.41</b>	<b>0.00</b>	<b>0.00</b>	<b>70.89</b>	<b>2070.84</b>
<b>TOTAL (From All Sources)</b>	<b>8163.84</b>	<b>12108.80</b>	<b>0.00</b>	<b>0.00</b>	<b>482.66</b>	<b>20755.30</b>

2021-22

Generating Station	Cost (Rs. Crs.)					
	Fixed	Variable	Incentive	Income Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I						0.00
VTPS II						0.00
VTPS III						0.00
VTPS IV						0.00
RTPP I						0.00
RTPP Stage-II						0.00
RTPP Stage-III						0.00
KTPS A	0.00	0.00				0.00
KTPS B	0.00	0.00				0.00
KTPS C	0.00	0.00				0.00
KTPS D	249.11	586.83				835.94
KTPS Stage VI	360.88	612.93				973.81
RTS B	65.92	61.35				127.27
NTS						0.00
Kakatiya Thermal Power Plant Stage I	332.84	693.92				1026.76
Kakatiya Thermal Power Plant Stage II	492.56	680.73				1173.29
BTPS (Manuguru New Project) - Unit 1	872.46	931.11			(121)	1682.86
BTPS (Manuguru New Project) - Unit 2						0.00
BTPS (Manuguru New Project) - Unit 3						0.00
BTPS (Manuguru New Project) - Unit 4						0.00
KTPS VII	727.97	1020.17				1748.14
Interest on pension bonds	761.87					761.87
Infirm Power BTPS-IV	0.00	20.27				20.27
<b>TOTAL THERMAL</b>	<b>3863.61</b>	<b>4607.31</b>	<b>0.00</b>	<b>0.00</b>	<b>-120.71</b>	<b>8350.21</b>
MACHKUND PH TS Share	0.00					0.00
TUNGBHADRA PH TS Share	0.00					0.00
USL						0.00
LSR						0.00
DONKARAYI						0.00
SSLM						0.00
NSPH	223.86					223.86
NSRCPH						0.00
NSLCPH						0.00
POCHAMPAD PH						0.00
NIZAMSAGAR PH	0.00					0.00

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PABM						0.00
MINI HYDRO&OTHERS						0.00
SINGUR						0.00
SSLM LCPH	288.51					288.51
Nagarjunasagar Tail Pond Dam Power House						0.00
Priyadarshini Jurala Hydro Electric Project- AP Share						0.00
Lower Jurala Hydro Electric Project	221.03					221.03
POCHAMPAD Stage-II						0.00
PULICHINTAL(New Project)	72.86					72.86
Ramagiri Wind Mills						0.00
Pochampad Stage-IV	7.03					7.03
MINI HYDRO&OTHERS	39.23					39.23
2014-21 Review petition order/true up claim	414.65	-42.37				372.28
Supplementary Bill	292.04					292.04
Colony Consumption		-4.53				-4.53
<b>TOTAL HYDRO</b>	<b>1559.20</b>	<b>-46.90</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1512.30</b>
<b>TOTAL TSGENCO</b>	<b>5422.81</b>	<b>4560.42</b>	<b>0.00</b>	<b>0.00</b>	<b>-120.71</b>	<b>9862.51</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	128.89	420.85				549.74
NTPC (SR) Stage III	42.45	122.26				164.71
<b>Total NTPC(SR)</b>	<b>171.34</b>	<b>543.12</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>714.45</b>
<b>NTPC (ER)</b>						
Farakka	0.00	0.00				0.00
Kahalgaoon	0.00	0.00				0.00
Talcher - Stage 1	9.89	0.00				9.89
Talcher Stage 2	83.33	192.70				276.03
NTPC Aravali						0.00
<b>Total NTPC(ER)</b>	<b>93.22</b>	<b>192.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>285.92</b>
<b>Total NTPC</b>	<b>264.56</b>	<b>735.81</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1000.37</b>
<b>NLC TS-II</b>						
Stage-I	19.71	67.44				87.14
Stage-II	32.70	104.45				137.15
<b>Total NLC</b>	<b>52.41</b>	<b>171.88</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>224.29</b>
<b>NPC</b>						
NPC-MAPS		7.45				7.45
NPC-Kaiga unit I		273.26				273.26
NPC-Kaiga unit II						0.00
<b>Total NPC</b>	<b>0.00</b>	<b>280.72</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>280.72</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	298.23	679.75				977.99
NTPC Simhadri Stage II	182.28	298.61				480.88
<b>Total NTPC- Simhadri</b>	<b>480.51</b>	<b>978.36</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1458.87</b>
<b>CGS - New</b>						
Vallur Thermal Power Plant	98.34	147.81				246.15



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Tuticorin/NLC Tamilnadu Power Ltd	100.46	169.14				269.60
NPC-Kundnkulam		102.23				102.23
kudigi	215.05	229.26				444.31
NCE-Bundled Power (NVVNL) coal		72.83				72.83
NCE - Bundled Power (Coal) ( NTPC 200 MW)	0.00	342.98				342.98
Neyveli new unit - 1						0.00
Neyveli new unit - 2						0.00
NNTPS	47.92	67.63				115.55
NTPC Aravali		18.56				18.56
<b>TOTAL CGS</b>	<b>1259.24</b>	<b>3317.21</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4576.46</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity	0.00	0.00				0.00
APGPCL I - Unutilised capacity						0.00
APGPCL II - Allocated capacity	0.00	0.00				0.00
APGPCL II - Unutilised capacity						0.00
<b>Total APGPCL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>						
M/s Thermal Powertech	230.069855	776.815324				1006.89
Thermal Powertech 570 MW	772.983109	799.203561				1572.19
Kondapalli (Naphtha)						0.00
Kondapalli (Gas)						0.00
BSES						0.00
GVK Extension						0.00
Vemagiri						0.00
Gautami						0.00
Konaseema						0.00
<b>TOTAL IPPS</b>	<b>1003.05</b>	<b>1576.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2579.07</b>
<b>NCE</b>						
NCE - Bio-Mass		23.67				23.67
NCE - Bagasse		6.00				6.00
NCE - Municipal Waste to Energy		30.38				30.38
NCE - Industrial Waste based power project		81.67				81.67
NCE - Wind Power		102.54				102.54
NCE - Mini Hydel		0.14				0.14
NCE - NCL Energy Ltd		24.35				24.35
NCE-Solar		2015.12				2015.12
NCE - Bundled Power NVVNL (solar) JNNM Ph 1		32.247				32.25
NCE - Bundled Power (Solar) (NTPC 400 MW)		13.03				13.03
SECI 400 MW						0.00
NSM-Solar Phase II						0.00
NSM Sola Phase II		277.60				277.60
<b>TOTAL NCE</b>	<b>0.00</b>	<b>2606.75</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2606.75</b>
<b>OTHERS</b>						
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00

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NB Ferro Alloys						0.00
Singareni I & II	1018.33	1692.33				2710.66
Thermal Power Tech						0.00
CSPGCL	311.62	138.10				449.72
Thermal Power Tech Unit II						0.00
<b>TOTAL OTHERS</b>	<b>1329.95</b>	<b>1830.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3160.38</b>
<b>MARKET</b>						
PTC						0.00
Other Short Term Sources						0.00
D-D purchase/ sale		-396.66				-396.66
Interstate Sale		-1340.21				-1340.21
Trading	2.11	2175.23				2177.33
Reactive	20.54	0.00				20.54
UI	0.00	-53.63				-53.63
Thermal Incentive 2020-21		5.23				5.23
Advance Income Tax 2020-21(Net)	7.44	0.00				7.44
Wheeling KPTCL/Reactive KPTCL/AP	0	0				0.00
Wheeling Tantransco/Asset Maintenance	0.15	0.06				0.21
Netting off GENCO dues TS-AP		273.82				273.82
PP Cost 2020-21 Prov,FOR 2021-22		-4.56				-4.56
Banked Energy		14.95				14.95
GBI RECEIVABLES		-7.15				-7.15
Others		6.14				6.14
<b>TOTAL MARKET</b>	<b>30.24</b>	<b>673.23</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>703.46</b>
<b>TOTAL (From All Sources)</b>	<b>9045.29</b>	<b>14564.05</b>	<b>0.00</b>	<b>0.00</b>	<b>-120.71</b>	<b>23488.63</b>

## 2022-23

Generating Station	Cost (Rs. Crs.)					
	Fixed	Variable	Incentive	Income Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I						0.00
VTPS II						0.00
VTPS III						0.00
VTPS IV						0.00
RTPP I						0.00
RTPP Stage-II						0.00
RTPP Stage-III						0.00
KTPS A	0.00	0.00				0.00
KTPS B	0.00	0.00				0.00
KTPS C	0.00	0.00				0.00
KTPS D	258.29	686.00				944.28
KTPS Stage VI	368.13	752.61				1120.74
RTS B	70.36	80.83				151.19
NTS						0.00
Kakatiya Thermal Power Plant Stage I	300.06	652.71				952.78
Kakatiya Thermal Power Plant Stage II	508.03	899.38				1407.42

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BTPS (Manuguru New Project) - Unit 1	207.62	278.83				486.45
BTPS (Manuguru New Project) - Unit 2	207.62	278.83				486.46
BTPS (Manuguru New Project) - Unit 3	207.62	278.84				486.46
BTPS (Manuguru New Project) - Unit 4	207.62	278.85				486.47
KTPS VII	568.86	858.71				1427.57
YTPS - I						0.00
TSGENCO provision for water, IT, hydel sec EC, thermal incentives etc.						0.00
<b>TOTAL THERMAL</b>	<b>2904.23</b>	<b>5045.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7949.82</b>
MACHKUND PH TS Share	0.00					0.00
TUNGBHADRA PH TS Share	0.00					0.00
USL						0.00
LSR						0.00
DONKARAYI						0.00
SSLM						0.00
NSPH	228.03					228.03
NSRCPH						0.00
NSLCPH	16.77					16.77
POCHAMPAD PH	17.36					17.36
NIZAMSAGAR PH	6.43					6.43
PABM						0.00
MINI HYDRO&OTHERS						0.00
SINGUR	9.65					9.65
SSLM LCPH	327.34					327.34
Nagarjunasagar Tail Pond Dam Power House						0.00
Priyadarshini Jurala Hydro Electric Project- AP Share	43.92					43.92
Lower Jurala Hydro Electric Project	187.21					187.21
POCHAMPAD Stage-II	7.24					7.24
PULICHINTAL(New Project)	87.15					87.15
Ramagiri Wind Mills						0.00
Pochampad Stage-IV						0.00
Mini Hydel & Others (Peddapalli, Palair)	7.78					7.78
<b>TOTAL HYDRO</b>	<b>938.88</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>938.88</b>
<b>TOTAL TSGENCO</b>	<b>3843.11</b>	<b>5045.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>8888.70</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	120.84	543.96				664.81
NTPC (SR) Stage III	35.66	124.22				159.88
<b>Total NTPC(SR)</b>	<b>156.50</b>	<b>668.18</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>824.69</b>
<b>NTPC (ER)</b>						
Farakka	0.00	0.00				0.00
Kahalgaoon	0.00	0.00				0.00
Talcher - Stage 1	0.00	0.00				0.00
Talcher Stage 2	87.11	233.05				320.16
Others						0.00

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<b>Total NTPC(ER)</b>	87.11	233.05	0.00	0.00	0.00	320.16
<b>Total NTPC</b>	<b>243.61</b>	<b>901.24</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1144.85</b>
<b>NLC TS-II</b>						
Stage-I	2.16	11.21				13.37
Stage-II	3.18	19.02				22.20
<b>Total NLC</b>	<b>5.34</b>	<b>30.24</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>35.57</b>
<b>NPC</b>						
NPC-MAPS		11.82				11.82
NPC-Kaiga unit I		195.06				195.06
NPC-Kaiga unit II		50.07				50.07
<b>Total NPC</b>	<b>0.00</b>	<b>256.95</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>256.95</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	289.78	947.78				1237.56
NTPC Simhadri Stage II	212.35	420.25				632.60
<b>Total NTPC- Simhadri</b>	<b>502.13</b>	<b>1368.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1870.16</b>
<b>CGS - New</b>						
Vallur Thermal Power Plant	99.61	141.93				241.54
Tuticorin/NLC Tamilnadu Power Ltd	132.90	191.70				324.60
NPC-Kundnkulam		112.87				112.87
kudigi	230.23	340.46				570.69
NCE-Bundled Power (NVVNL) coal	68.49	132.23				200.72
NCE - Bundled Power (Coal) ( NTPC 200 MW)	0.00	405.11				405.11
Neyveli new unit - 1	50.93	64.61				115.54
Neyveli new unit - 2	3.16	4.86				8.02
Telangana STPP (phase I)	184.63	185.45				370.08
<b>TOTAL CGS</b>	<b>1521.03</b>	<b>4135.67</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5656.70</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity	0.00	0.00				0.00
APGPCL I - Unutilised capacity						0.00
APGPCL II - Allocated capacity	0.00	0.00				0.00
APGPCL II - Unutilised capacity						0.00
<b>Total APGPCL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>						
GVK						0.00
Spectrum						0.00
Kondapalli (Naphtha)						0.00
Kondapalli (Gas)						0.00
BSSES						0.00
GVK Extension						0.00
Vemagiri						0.00
Gautami						0.00
Konaseema						0.00
<b>TOTAL IPPS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>NCE</b>						
NCE - Bio-Mass		14.13				14.13
NCE - Bagasse		0.97				0.97
NCE - Municipal Waste to Energy		92.03				92.03

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NCE - Industrial Waste based power project		14.23				14.23
NCE - Wind Power		109.41				109.41
NCE - Mini Hydel		0.00				0.00
NCE - NCL Energy Ltd						0.00
NCE-Solar		2094.35				2094.35
NCE - Bundled Power NVVNL (solar) JNNSM Ph 1		28.09				28.09
NCE - Bundled Power (Solar) (NTPC 400 MW)		265.47				265.47
SECI 400 MW		134.74				134.74
NCE Nidhan Solar Ph I	25.93	59.70				85.62
NCE Others		253.25				253.25
<b>TOTAL NCE</b>	<b>25.93</b>	<b>3066.37</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3092.30</b>
<b>OTHERS</b>						
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00
NB Ferro Alloys						0.00
Singareni I & II	999.10	1773.93			7.06	2780.09
Thermal Power Tech	224.35	365.31			25.62	615.28
CSPGCL	516.72	229.65				746.37
Thermal Power Tech Unit II	768.64	615.71			3.11	1387.46
<b>TOTAL OTHERS</b>	<b>2508.80</b>	<b>2984.60</b>	<b>0.00</b>	<b>0.00</b>	<b>35.79</b>	<b>5529.20</b>
<b>MARKET</b>						
PTC	0.00					0.00
Other Short Term Sources		2079.96				2079.96
D-D purchase/ sale		451.10				451.10
Other Costs (STOA, Asset Maintenance)						0.00
Interest on Pension Bonds	922.40					922.40
Reactive	27.78					27.78
Surplus		-805.32				-805.32
UI	46.13					46.13
<b>TOTAL MARKET</b>	<b>996.31</b>	<b>1725.75</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2722.05</b>
<b>TOTAL (From All Sources)</b>	<b>8895.17</b>	<b>16957.99</b>	<b>0.00</b>	<b>0.00</b>	<b>35.79</b>	<b>25888.96</b>

2023-24

Generating Station	Cost (Rs. Crs.)					
	Fixed	Variable	Incentive	Income Tax	Others	Total
<b>TSGENCO</b>						
<b>Thermal</b>						
VTPS I						0.00
VTPS II						0.00
VTPS III						0.00
VTPS IV						0.00
RTPP I						0.00
RTPP Stage-II						0.00
RTPP Stage-III						0.00
KTPS A	0.00	0.00				0.00

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KTPS B	0.00	0.00				0.00
KTPS C	0.00	0.00				0.00
KTPS D	268.82	601.84				870.65
KTPS Stage VI	365.07	626.67				991.74
RTS B	82.78	78.12				160.91
NTS						0.00
Kakatiya Thermal Power Plant Stage I	293.51	598.87				892.38
Kakatiya Thermal Power Plant Stage II	501.24	809.18				1310.42
BTPS (Manuguru New Project) - Unit 1	334.09	307.51				641.60
BTPS (Manuguru New Project) - Unit 2	334.09	307.52				641.61
BTPS (Manuguru New Project) - Unit 3	334.09	307.53				641.62
BTPS (Manuguru New Project) - Unit 4	334.09	307.55				641.63
KTPS VII	732.29	961.87				1694.15
YTPS - I	282.76	372.81				655.58
Yadradri - TPS - II	141.38	183.36				324.74
<b>TOTAL THERMAL</b>	<b>4004.21</b>	<b>5462.82</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9467.03</b>
MACHKUND PH TS Share						0.00
TUNGBHADRA PH TS Share						0.00
USL						0.00
LSR						0.00
DONKARAYI						0.00
SSLM						0.00
NSPH						0.00
NSRCPH	225.69					225.69
NSLCPH						0.00
POCHAMPAD PH	16.60					16.60
NIZAMSAGAR PH	17.97					17.97
PABM	6.65					6.65
MINI HYDRO&OTHERS						0.00
SINGUR						0.00
SSLM LCPH	9.98					9.98
Nagarjunasagar Tail Pond Dam Power House	324.18					324.18
Priyadarshini Jurala Hydro Electric Project- AP Share						0.00
Lower Jurala Hydro Electric Project	43.37					43.37
POCHAMPAD Stage-II	183.08					183.08
PULICHINTAL(New Project)	6.55					6.55
Ramagiri Wind Mills	87.39					87.39
Pochampad Stage-IV						0.00
						0.00
	8.02					8.02
<b>TOTAL HYDRO</b>	<b>929.50</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>929.50</b>
<b>TOTAL TSGENCO</b>	<b>4933.71</b>	<b>5462.82</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>10396.53</b>
<b>Central Generating Stations</b>						
<b>NTPC</b>						
<b>NTPC (SR)</b>						
NTPC (SR)	137.76	529.83				667.59

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

NTPC (SR) Stage III	38.10	126.28				164.38
<b>Total NTPC(SR)</b>	<b>175.85</b>	<b>656.12</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>831.97</b>
<b>NTPC (ER)</b>						
Farakka	0.00	0.00				0.00
Kahalgaon	0.00	0.00				0.00
Talcher - Stage 1	0.00	0.00				0.00
Talcher Stage 2	80.46	197.09				277.55
Others						0.00
<b>Total NTPC(ER)</b>	<b>80.46</b>	<b>197.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>277.55</b>
<b>Total NTPC</b>	<b>256.31</b>	<b>853.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1109.51</b>
<b>NLC TS-II</b>						
Stage-I	1.76	6.79				8.55
Stage-II	2.40	8.94				11.35
<b>NNTPP</b>	<b>48.58</b>	<b>59.44</b>				<b>108.02</b>
Neyveli new unit - 1	2.77	7.05				9.82
Neyveli new unit - 2	4.89	5.60				10.49
<b>Total NLC</b>	<b>60.42</b>	<b>87.81</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>148.23</b>
<b>NPC</b>						
NPC-MAPS	0.00	10.12				10.12
NPC-Kaiga unit I	0.00	104.87				104.87
NPC-Kaiga unit II	0.00	113.63				113.63
NPC- Kudankulam	0.00	8.18				8.18
<b>Kudankulam (KKNPP) Unit-II</b>	<b>0.00</b>	<b>98.22</b>				<b>98.22</b>
<b>Total NPC</b>	<b>0.00</b>	<b>335.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>335.01</b>
<b>NTPC - Simhadri</b>						
NTPC Simhadri Stage I	255.16	855.59				1110.75
NTPC Simhadri Stage II	195.97	409.06				605.03
<b>Total NTPC- Simhadri</b>	<b>451.13</b>	<b>1264.65</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1715.78</b>
<b>CGS - New</b>						
Vallur Thermal Power Plant	101.49	19.04				120.53
<b>Tuticorin/NLC Tamilnadu Power Ltd</b>	<b>157.33</b>	<b>40.28</b>				<b>197.61</b>
kudigi	458.21	49.75				507.96
NCE - Bundled power NVVNL (Coal) JNNSM Ph2	136.98	352.11				489.09
<b>NCE-Bundled Power (NVVNL) coal</b>	<b>0.00</b>	<b>153.45</b>				<b>153.45</b>
<b>Telangana STPP (phase I)</b>	<b>1189.83</b>	<b>1195.10</b>				<b>2384.93</b>
<b>TOTAL CGS</b>	<b>2811.70</b>	<b>4350.41</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>7162.11</b>
<b>APGPCL</b>						
APGPCL I - Allocated capacity						0.00
APGPCL I - Unutilised capacity						0.00
APGPCL II - Allocated capacity						0.00
APGPCL II - Unutilised capacity						0.00
<b>Total APGPCL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>IPPS</b>						
Thermal Power Tech Unit I	224.05	347.42			42.67	614.14
Thermal Power Tech Unit II	800.76	142.28				943.04
<b>TOTAL IPPS</b>	<b>1024.81</b>	<b>489.70</b>	<b>0.00</b>	<b>0.00</b>	<b>42.67</b>	<b>1557.17</b>

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

<b>NCE</b>						
NCE - Bio-Mass		14.96				14.96
NCE - Bagasse		0.00				0.00
NCE - Municipal Waste to Energy		112.40				112.40
NCE - Industrial Waste based power project		33.36				33.36
NCE - Wind Power		118.02				118.02
NCE - Mini Hydel		0.00				0.00
NCE-Solar		2048.20				2048.20
NCE - Bundled Power NVVNL (solar) JNNM Ph 1		28.07				28.07
NCE - Bundled Power (Solar) (NTPC 400 MW)		267.44				267.44
NTPC CPSU Ph-II Tr III (735 MW)		87.39				87.39
SECI 400 MW		155.33				155.33
NTPC CPSU - 1692 MW		560.29				560.29
SECI 1000 MW		148.53				148.53
<b>TOTAL NCE</b>	<b>0.00</b>	<b>3574.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3574.00</b>
<b>OTHERS</b>						<b>0.00</b>
Srivathsa						0.00
LVS						0.00
Vishakapatnam Steel Plant						0.00
NB Ferro Alloys						0.00
Singareni I & II				1.10		1.10
Thermal Power Tech	980.29	838.83				1819.12
CSPGCL						0.00
Thermal Power Tech Unit II	1300.01	577.78				1877.79
<b>TOTAL OTHERS</b>	<b>2280.29</b>	<b>1416.61</b>	<b>0.00</b>	<b>0.00</b>	<b>1.10</b>	<b>3698.00</b>
<b>MARKET</b>						
PTC						0.00
RCL and Short-Term Sources(IG Wells,Kesoram)						0.00
NPDCL						0.00
SPDCL						0.00
UI						0.00
Other Short Term Sources		43.36				43.36
D-D Sales/Purchase		250.96				250.96
Interest on Pension Bonds	972.86					972.86
STOA						0.00
Reactive						0.00
Wheeling KPTCL						0.00
Wheeling Tantransco/Asset Maintenance						0.00
Conjestion charges						0.00
<b>TOTAL MARKET</b>	<b>972.86</b>	<b>294.32</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1267.18</b>
<b>TOTAL (From All Sources)</b>	<b>12023.37</b>	<b>15587.85</b>	<b>0.00</b>	<b>0.00</b>	<b>43.76</b>	<b>27654.99</b>



**TELANGANA STATE POWER CO-ORDINATION COMMITTEE  
VIDYUT SOUDHA::HYDERABAD**

From:  
Executive Director  
(Commercial)/TSPCC  
Vidyut Soudha  
Hyderabad – 82.

To:  
(1) The Chief General Manager (RAC)  
Corporate Office, TSSPDCL,  
Hyderabad.  
  
(2) The Chief General Manager (IPC & RAC)  
Corporate Office, TSNPDCL  
Warangal.

Lr.No.ED(Comml)/SE(Comml)/DE(BPP, STPP&Co-orn)/D.No.156, Dt.16.02.2023.

Sir,

Sub: TSPCC- Comml – Furnishing of certain additional information in respect of Power purchases for True-up filings of RST for FY 2016-17 to 2022-23 - Regarding.

Ref: 1) TSERC E-Mail dated 21.01.2023  
2) Lr.No.CGM(I&R)/GM(I&R) DE(RAC)/TSNPDCL/WGL/F.No.02/  
D.No.470/22, Dt:23.01.2023 (TSNPDCL).  
3) Lr.No.CGM(RAC)/SE(RAC)/DE(RAC)/F.No.B/80/D.No.705/23,  
Dt:09.02.2023 (TSSPDCL).  
4) U.O.No.FA&CCA/TSPCC/Dy.CCA/SAO(PP&S)/D.No.555-23,  
Dt:08.02.2023.  
5) U.O.No.FA&CCA/TSPCC/Dy.CCA/SAO(PP&S)/D.No.560/23,  
Dt:15.02.2023.

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In the references cited (2) & (3) above, it was requested to furnish certain additional information in respect of Power purchases for True-up filings of Retail Supply Business for FY 2016-17 to 2022-23 as sought by Hon'ble TSERC.

In this regard, the following additional information in respect of Power purchases for True-up filings of Retail Supply Business for FY 2016-17 to 2022-23 as sought for is furnished hereunder:

**Para No.(5):** The invoices submitted by each generator from FY 2016-17 to 2022-23 in excel format:

**Reply:** The Invoices submitted by each generator (except NCE) from FY 2016-17 to 2022-23 (Upto January 2023) in excel format is enclosed as **Annexure-A.**

[P.T.O]

**Para No.(6):** The details of additional energy procured along with cost to meet the power demand in the state from FY 2016-17 to 2022-23 in excel format.

**Reply:** TSDISCOMs have procured the power through Short term Purchase Orders and through Power Exchanges to meet the power demand in the state. The details are enclosed as **Annexure-B**.

**Para No.(8):** The details of additional payments made towards pension liabilities and justification for payment of such additional amounts from FY 2016-17 to 2022-23.

**Reply:** Additional Interest on pension bonds claimed by TSGENCO in monthly invoices were admitted by TSDISCOMs to the extent as approved by Hon'ble TSERC from time to time and details enclosed as **Annexure-C**.

**Para No.(9):** The details of PGCIL notified charges along with the invoices from FY 2016-17 to 2022-23.

**Reply:** The details of PGCIL notified charges along with the invoices from FY 2016-17 to 2022-23 are enclosed as **Annexure-D**.

**Para No.(10):** The copies of tariff orders issued by CERC for the contracted CGS for the control period from FY 2016-17 to 2022-23.

**Reply:** The copies of tariff orders issued by CERC for the contracted CGS for the control period from FY 2016-17 to 2022-23 are enclosed in soft copy.

**Para No.(11):** The month-wise details of quantum of sale of surplus energy, stations dispatched and cost incurred for sale of such surplus energy, rate at which the energy is sold for the period from FY 2016-17 to FY 2022-23.

**Reply:** The month-wise details of quantum of sold through Power Exchanges and average rate for the period from FY 2016-17 to FY 2022-23 (Upto January 2023) are enclosed as **Annexure-E**.

Encl: As above.

Yours faithfully,

*B.V. Shanthi Latha 16/2/23*

Executive Director (Commercial)/TSPCC



**TELANGANA STATE POWER CO-ORDINATION COMMITTEE  
VIDYUT SOUDHA::HYDERABAD**

From:  
Executive Director  
(Commercial)/TSPCC  
Vidyut Soudha  
Hyderabad – 82.

To:  
✓(1) The Chief General Manager (RAC)  
Corporate Office, TSSPDCL,  
Hyderabad.  
  
(2) The Chief General Manager (IPC & RAC)  
Corporate Office, TSNPDCL  
Warangal.

Lr.No.ED(Comml)/SE(Comml)/DE(BPP, STPP&Co-orn)/D.No. 156 Dt.16.02.2023.

Sir,

Sub: TSPCC- Comml – Furnishing of certain additional information in respect of Power purchases for True-up filings of RST for FY 2016-17 to 2022-23 - Regarding.

Ref: 1) TSERC E-Mail dated 21.01.2023  
2) Lr.No.CGM(I&R)/GM(I&R) DE(RAC)/TSNPDCL/WGL/F.No.02/  
D.No.470/22, Dt:23.01.2023 (TSNPDCL).  
3) Lr.No.CGM(RAC)/SE(RAC)/DE(RAC)/F.No.B/80/D.No.705/23,  
Dt:09.02.2023 (TSSPDCL).  
4) U.O.No.FA&CCA/TSPCC/Dy.CCA/SAO(PP&S)/D.No.555-23,  
Dt:08.02.2023.  
5) U.O.No.FA&CCA/TSPCC/Dy.CCA/SAO(PP&S)/D.No.560/23,  
Dt:15.02.2023.

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In the references cited (2) & (3) above, it was requested to furnish certain additional information in respect of Power purchases for True-up filings of Retail Supply Business for FY 2016-17 to 2022-23 as sought by Hon'ble TSERC.

In this regard, the following additional information in respect of Power purchases for True-up filings of Retail Supply Business for FY 2016-17 to 2022-23 as sought for is furnished hereunder:

**Para No.(5):** The invoices submitted by each generator from FY 2016-17 to 2022-23 in excel format:

**Reply:** The Invoices submitted by each generator (except NCE) from FY 2016-17 to 2022-23 (Upto January 2023) in excel format is enclosed as **Annexure-A.**

[P.T.O]

**Para No.(6):** The details of additional energy procured along with cost to meet the power demand in the state from FY 2016-17 to 2022-23 in excel format.

**Reply:** TSDISCOMs have procured the power through Short term Purchase Orders and through Power Exchanges to meet the power demand in the state. The details are enclosed as **Annexure-B**.

**Para No.(8):** The details of additional payments made towards pension liabilities and justification for payment of such additional amounts from FY 2016-17 to 2022-23.

**Reply:** Additional Interest on pension bonds claimed by TSGENCO in monthly invoices were admitted by TSDISCOMs to the extent as approved by Hon'ble TSERC from time to time and details enclosed as **Annexure-C**.

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**Reply:** The details of PGCIL notified charges along with the invoices from FY 2016-17 to 2022-23 are enclosed as **Annexure-D**.

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**Para No.(11):** The month-wise details of quantum of sale of surplus energy, stations dispatched and cost incurred for sale of such surplus energy, rate at which the energy is sold for the period from FY 2016-17 to FY 2022-23.

**Reply:** The month-wise details of quantum of sold through Power Exchanges and average rate for the period from FY 2016-17 to FY 2022-23 (Upto January 2023) are enclosed as **Annexure-E**.

Encl: As above.

Yours faithfully,

*B.V. Shanthi* 16/2/23

Executive Director (Commercial)/TSPCC



ANNEXURE - A.

## M/s NTPC Monthly Invoice Claim

BILL MONTH	BILL AMOUNT	INVOICE DATE	DUE DATE
MAR'16	2866710467	06-04-16	05-06-16
APR'16	3053889942	06-05-16	05-07-16
MAY'16	2637325163	06-06-16	05-08-16
JUN'16	2440647859	06-07-16	04-09-16
JULY'16	2808391541	06-08-16	05-10-16
AUG'16	2425950467	06-09-16	05-11-16
SEP'16	2512927761	06-10-16	05-12-16
OCT'16	2504093805	08-11-16	07-01-17
NOV'16	2064076675	06-12-16	04-02-17
DEC'16	2506557957	06-01-17	07-03-17
JAN'17	3363004776	06-02-17	07-04-17
FEB'17	3095840085	06-03-17	05-05-17
MAR'17	2962199903	06-04-17	05-06-17
APR'17	3149807497	06-05-17	05-07-17
MAY'17	2325180228	06-06-17	05-08-17
JUN'17	2101125619	07-07-17	05-09-17
JULY'17	2079905699	05-08-17	04-10-17
AUG'17	2090208633	06-09-17	05-11-17
SEP'17	2290626182	06-10-17	05-12-17
OCT'17	2497504234	06-11-17	05-01-18
NOV'17	2275830730	06-12-17	04-02-18
DEC'17	2961141415	06-01-18	07-03-18
JAN'18	2561869124	06-02-18	07-04-18
FEB'18	2914633697	06-03-18	05-05-18
MAR'18	3585747702	06-04-18	05-06-18
APR'18	3123055563	05-05-18	04-07-18
MAY'18	3004462559	06-06-18	05-08-18
JUN'18	2792923554	06-07-18	04-09-18
JULY'18	2898819263	06-08-18	05-10-18
AUG'18	2626819440	06-09-18	05-11-18
SEP'18	3246897320	06-10-18	05-12-18
OCT'18	3196110212	03-11-18	02-01-19
NOV'18	3265421385	05-12-18	03-02-19
DEC'18	3918181321	05-01-19	06-03-19
JAN'19	3951794391	06-02-19	07-04-19
FEB'19	3922675849	06-03-19	05-05-19
MAR-19	3922675849	06-03-19	05-05-19
APR-19	4187912887	05-04-19	04-06-19
MAY-19	3427014624	06-05-19	20-06-19
JUN-19	3049447778	07-06-19	22-07-19
JULY-19	2335764847	05-07-19	19-08-19
AUG-19	3183546409	06-08-19	20-09-19
SEP-19	3075977436	06-09-19	21-10-19
OCT-19	2102121931	05-10-19	19-11-19

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

NOV-19	1966472664	06-11-19	21-12-19
DEC-19	2767120934	06-12-19	20-01-20
JAN-20	4586791501	06-01-20	20-02-20
FEB-20	4364301070	07-02-20	23-03-20
MAR-20	4100404214	06-03-20	20-04-20
APR-20	4418088103	06-04-20	21-05-20
MAY-20	2942589757	06-05-20	20-06-20
JUN-20	2137417084	08-06-20	23-07-20
JULY-20	2403699482	06-07-20	20-08-20
AUG-20	3657807407	06-08-20	20-09-20
SEP-20	2325088101	05-09-20	20-10-20
OCT-20	2246444788	06-10-20	20-11-20
NOV-20	1951769712	06-11-20	21-12-20
DEC-20	1845231804	05-12-20	19-01-21
JAN-21	2415526575	06-01-21	20-02-21
FEB-21	3275841781	05-02-21	22-03-21
MAR-21	3958288696	05-03-21	19-04-21
APR-21	4133679922	06-04-21	21-05-21
MAY-21	3629455401	06-05-21	20-06-21
JUN-21	2445634459	05-06-21	20-07-21
JULY-21	2868148950	06-07-21	20-08-21
AUG-21	3635636058	06-08-21	20-09-21
SEP-21	3719254473	06-09-21	21-10-21
OCT-21	3456110060	06-10-21	20-11-21
NOV-21	3501233515	06-11-21	21-12-21
DEC-21	2820444046	06-12-21	20-01-22
JAN-22	3678702875	06-01-22	20-02-22
FEB-22	3619948227	05-02-22	22-03-22
MAR-22	3711576417	05-03-22	19-04-22
APR-22	4567027533	06-04-22	21-05-22
MAY-22	4901407553	06-05-22	20-06-22
JUN-22	5723196436	06-06-22	21-07-22
JUL-22	5111980844	06-07-22	20-08-22
AUG-22	5076497884	05-08-22	19-09-22
SEP-22	4786159939	05-09-22	20-10-22
OCT-22	4920852255	06-10-22	20-11-22
NOV-22	5227553067	05-11-22	20-12-22
Dec-22	2699897813	06-12-22	20-01-23
Jan-23	4909934458	06-02-23	23-03-23



Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

**M/s NTECL Valluru Monthly Invoice Claim**

BILL	Bill date	Due Date	BILL AMOUNT
Mar-15	07-04-15	06-06-15	150972433
Apr-15	06-05-15	05-07-15	170432041
May-15	06-06-15	05-08-15	190531066
Jun-15	06-07-15	04-09-15	158471259
Jul-15	05-08-15	04-10-15	159402581
Aug-15	07-09-15	06-11-15	163546945
Sep-15	06-10-15	05-12-15	146849581
Oct-15	06-11-15	05-01-16	198905311
Nov-15	07-12-15	05-02-16	135623959
Dec-15	06-01-16	06-03-16	140646490
Jan-16	06-02-16	06-04-16	176633275
Feb-16	08-03-16	07-05-16	260874159
Mar-16	06-04-16	05-06-16	100961103
Apr-16	06-05-16	05-07-16	229093310
May-16	06-06-16	05-08-16	178245911
Jun-16	06-07-16	04-09-16	158456790
Jul-16	06-08-16	05-10-16	168099667
Aug-16	06-09-16	05-11-16	248402652
Sep-16	06-10-16	05-12-16	264422819
Oct-16	08-11-16	07-01-17	201697199
Nov-16	06-12-16	04-02-17	188968521
Dec-16	06-01-17	07-03-17	274880807
Jan-17	06-02-17	07-04-17	338091325
Feb-17	06-03-17	05-05-17	228833905
Mar-17	06-04-17	05-06-17	310701949
Apr-17	06-05-17	05-07-17	201620067
May-17	06-06-17	05-08-17	103964781
Jun-17	06-07-17	04-09-17	123766651
Jul-17	07-08-17	06-10-17	254338877
Aug-17	06-09-17	05-11-17	162947166
Sep-17	06-10-17	05-12-17	185468853
Oct-17	06-11-17	05-01-18	154542922
Nov-17	06-12-17	04-02-18	163771392
Dec-17	06-01-18	07-03-18	213565614
Jan-18	06-02-18	07-04-18	103494971
Feb-18	06-03-18	05-05-18	210468941
Mar-18	06-04-18	05-06-18	300935543
Apr-18	05-05-18	04-07-18	196674106
May-18	06-06-18	05-08-18	249052093
Jun-18	06-07-18	04-09-18	136040695
Jul-18	06-08-18	05-10-18	225999274
Aug-18	06-09-18	05-11-18	239745864

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

Sep-18	06-10-18	05-12-18	218845229
Oct-18	03-11-18	02-01-19	260603145
Nov-18	05-12-18	03-02-19	289142927
Dec-18	04-01-19	05-03-19	301460081
Jan-19	05-02-19	06-04-19	244301185
Feb-19	05-03-19	04-05-19	356875801
Mar-19	04-04-19	03-06-19	418749492
Apr-19	06-05-19	20-06-19	266486750
May-19	07-06-19	22-07-19	334063850
Jun-19	05-07-19	19-08-19	274316477
Jul-19	05-08-19	19-09-19	323610824
Aug-19	06-09-19	21-10-19	237085717
Sep-19	04-10-19	18-11-19	133392565
Oct-19	06-11-19	21-12-19	181114365
Nov-19	06-12-19	20-01-20	272209099
Dec-19	06-01-20	20-02-20	428306942
Jan-20	06-02-20	22-03-20	323946404
Feb-20	06-03-20	20-04-20	323792103
Mar-20	06-04-20	21-05-20	267762973
Apr-20	06-05-20	20-06-20	228397559
May-20	06-06-20	21-07-20	170484874
Jun-20	06-07-20	20-08-20	157031531
Jul-20	06-08-20	20-09-20	279693484
Aug-20	05-09-20	20-10-20	140488499
Sep-20	06-10-20	20-11-20	132027631
Oct-20	06-11-20	21-12-20	120432787
Nov-20	05-12-20	19-01-21	144476730
Dec-20	06-01-21	20-02-21	187669237
Jan-21	06-02-21	23-03-21	263360145
Feb-21	06-03-21	20-04-21	544955889
Mar-21	06-04-21	21-05-21	278149207
Apr-21	07-05-21	21-06-21	311969876
May-21	06-06-21	21-07-21	204119077
Jun-21	07-07-21	21-08-21	254364083
Jul-21	06-08-21	20-09-21	323522246
Aug-21	06-09-21	21-10-21	282482770
Sep-21	06-10-21	20-11-21	311037866
Oct-21	06-11-21	21-12-21	292755199
Nov-21	06-12-21	20-01-22	249239687
Dec-21	06-01-22	20-02-22	370487764
Jan-22	05-02-22	22-03-22	321660836
Feb-22	05-03-22	19-04-22	271442090
Mar-22	07-04-22	22-05-22	387802649
Apr-22	06-05-22	20-06-22	408459520



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May-22	06-06-22	21-07-22	489829567
Jun-22	05-07-22	19-08-22	434230870
Jul-22	05-08-22	19-09-22	296718465
Aug-22	05-09-22	20-10-22	292499124
Sep-22	06-10-22	20-11-22	342435471
Oct-22	05-11-22	20-12-22	228348472
Nov-22	05-12-22	19-01-23	258953852
Dec-22	06-01-23	20-02-23	264219051
Jan-23	04-02-23	21-03-23	250735530

## M/s NTPC-NSM Phase II Monthly Invoice Claim

Project	EGY MONTH	INVOICE DATE	DUE DATE	LPSC- DUE DATE	BILL AMOUNT
NSM Ph II	Oct-17	1 Nov 17	30 Nov 17	30 Dec 17	38906417
Kanti	Oct-17	1 Nov 17	30 Nov 17	30 Dec 17	0
NSM Ph II	Nov-17	1 Dec 17	31 Dec 17	30 Jan 18	27002339
Kanti	Nov-17	1 Dec 17	31 Dec 17	30 Jan 18	0
NSM Ph II	Dec-17	1 Jan 18	31 Jan 18	2 Mar 18	194263617
NSM Ph II	Dec-17	6 Jan 18	5 Feb 18	7 Mar 18	11714506
Kanti	Dec-17	1 Jan 18	31 Jan 18	2 Mar 18	1828857
Kanti	Dec-17	4 Jan 18	31 Jan 18	2 Mar 18	-469684
NSM Ph II	Jan-18	1 Feb 18	28 Feb 18	30 Mar 18	305059018
Kanti	Jan-18	1 Feb 18	28 Feb 18	30 Mar 18	875156
NSM Ph II	Feb-18	28 Feb 18	31 Mar 18	30 Apr 18	381993450
Kanti	Feb-18	28 Feb 18	31 Mar 18	30 Apr 18	2178717
NSM Ph II	Mar-18	28 Mar 18	30 Apr 18	30 May 18	889719727
Kanti	Mar-18	28 Mar 18	30 Apr 18	30 May 18	2417114
NSM Ph II	Apr-18	30 Apr 18	31 May 18	30 Jun 18	605714613
Kanti	Apr-18	30 Apr 18	31 May 18	30 Jun 18	2383467
NSM Ph II	May-18	31 May 18	30 Jun 18	30 Jul 18	597009407
Kanti	May-18	31 May 18	30 Jun 18	30 Jul 18	2417631
NSM Ph II	Jun-18	29 Jun 18	31 Jul 18	30 Aug 18	642274932
Kanti	Jun-18	29 Jun 18	31 Jul 18	30 Aug 18	2095180
NSM Ph II	Jul-18	31 Jul 18	31 Aug 18	30 Sep 18	724021437
Kanti	Jul-18	31 Jul 18	31 Aug 18	30 Sep 18	1582811
NSM Ph II	Aug-18	31 Aug 18	30 Sep 18	30 Oct 18	588033577
Kanti	Aug-18	31 Aug 18	30 Sep 18	30 Oct 18	2437023
NSM Ph II	Sep-18	28 Sep 18	31 Oct 18	30 Nov 18	805806216
Kanti	Sep-18	28 Sep 18	31 Oct 18	30 Nov 18	15777070
NSM Ph II	Oct-18	31 Oct 18	30 Nov 18	30 Dec 18	946577925
Kanti	Oct-18	31 Oct 18	30 Nov 18	30 Dec 18	20800386
NSM Ph II	Nov-18	30 Nov 18	31 Dec 18	30 Jan 19	1035372497
Kanti	Nov-18	30 Nov 18	31 Dec 18	30 Jan 19	7224235
NSM Ph II	Dec-18	31 Dec 18	31 Jan 19	2 Mar 19	769501114
Kanti	Dec-18	31 Dec 18	31 Jan 19	2 Mar 19	15498818
NSM Ph II	Jan-19	31 Jan 19	28 Feb 19	30 Mar 19	765854012
Kanti	Jan-19	31 Jan 19	28 Feb 19	30 Mar 19	12027744
NSM Ph II	Feb-19	28 Feb 19	31 Mar 19	30 Apr 19	904190929
Kanti	Feb-19	28 Feb 19	31 Mar 19	30 Apr 19	4553119
NSM Ph II	Mar-19	29 Mar 19	30 Apr 19	30 May 19	1059171496
Kanti	Mar-19	29 Mar 19	30 Apr 19	30 May 19	12957852
NSM Ph II	Apr-19	30 Apr 19	31 May 19	30 Jun 19	731827682
NSM Ph II	May-19	31 May 19	30 Jun 19	30 Jul 19	831992061
NSM Ph II	Jun-19	28 Jun 19	31 Jul 19	30 Aug 19	761374927



NSM Ph II	Jul-19	31 Jul 19	31 Aug 19	30 Sep 19	685029828
NSM Ph II	Aug-19	31 Aug 19	30 Sep 19	30 Oct 19	697246639
NSM Ph II	Sep-19	30 Sep 19	31 Oct 19	30 Nov 19	846146205
Kanti	Sep-19	0 Jan 00	0 Jan 00	0 Jan 00	1969398
NSM Ph II	Oct-19	31 Oct 19	30 Nov 19	30 Dec 19	374576836
Kanti	Oct-19	31 Oct 19	30 Nov 19	30 Dec 19	5997699
NSM Ph II	Nov-19	30 Nov 19	31 Dec 19	30 Jan 20	633080517
Kanti	Nov-19	30 Nov 19	31 Dec 19	30 Jan 20	7342561
NSM Ph II	Dec-19	31 Dec 19	31 Jan 20	1 Mar 20	745904240
Kanti	Dec-19	31 Dec 19	31 Jan 20	1 Mar 20	2941737
NSM Ph II	Jan-20	31 Jan 20	29 Feb 20	30 Mar 20	939400594
Kanti	Jan-20	31 Jan 20	29 Feb 20	30 Mar 20	5677273
NSM Ph II	Feb-20	28 Feb 20	31 Mar 20	30 Apr 20	927401759
Kanti	Feb-20	28 Feb 20	31 Mar 20	30 Apr 20	2132548
NSM Ph II	Mar-20	31 Mar 20	30 Apr 20	30 May 20	1189471539
Kanti	Mar-20	31 Mar 20	30 Apr 20	30 May 20	4363186
NSM Ph II	Apr-20	30 Apr 20	31 May 20	30 Jun 20	765947759
Kanti	Apr-20	30 Apr 20	31 May 20	30 Jun 20	2203378
NSM Ph II	May-20	30 May 20	30 Jun 20	30 Jul 20	800934015
Kanti	May-20	30 May 20	30 Jun 20	30 Jul 20	3125073
NSM Ph II	Jun-20	30 Jun 20	31 Jul 20	30 Aug 20	688925967
Kanti	Jun-20	30 Jun 20	31 Jul 20	30 Aug 20	3750917
NSM Ph II	Jul-20	31 Jul 20	31 Aug 20	30 Sep 20	1340698719
Kanti	Jul-20	31 Jul 20	31 Aug 20	30 Sep 20	3260080
NSM Ph II	Aug-20	31 Aug 20	30 Sep 20	30 Oct 20	775237177
Kanti	Aug-20	31 Aug 20	30 Sep 20	30 Oct 20	1670139
NSM Ph II	Sep-20	30 Sep 20	31 Oct 20	30 Nov 20	769337524
Kanti	Sep-20	30 Sep 20	31 Oct 20	30 Nov 20	1746829
NSM Ph II	Oct-20	30 Oct 20	30 Nov 20	30 Dec 20	720110728
Kanti	Oct-20	30 Oct 20	30 Nov 20	30 Dec 20	2682576
NSM Ph II	Nov-20	30 Nov 20	31 Dec 20	30 Jan 21	564004771
Kanti	Nov-20	30 Nov 20	31 Dec 20	30 Jan 21	2365453
NSM Ph II	Dec-20	31 Dec 20	31 Jan 21	2 Mar 21	749251102
Kanti	Dec-20	31 Dec 20	31 Jan 21	2 Mar 21	4420643
NSM Ph II	Jan-21	29 Jan 21	28 Feb 21	30 Mar 21	731252403
Kanti	Jan-21	29 Jan 21	28 Feb 21	30 Mar 21	3681956
NSM Ph II	Feb-21	26 Feb 21	31 Mar 21	30 Apr 21	1407014747
Kanti	Feb-21	26 Feb 21	31 Mar 21	30 Apr 21	3458186
NSM Ph II	Mar-21	31 Mar 21	30 Apr 21	30 May 21	981351788
Kanti	Mar-21	31 Mar 21	30 Apr 21	30 May 21	5579490
NSM Ph II	Apr-21	3 May 21	31 May 21	30 Jun 21	779365456
Kanti	Apr-21	3 May 21	31 May 21	30 Jun 21	5331816
NSM Ph II	May-21	31 May 21	30 Jun 21	30 Jul 21	840452967
Kanti	May-21	31 May 21	30 Jun 21	30 Jul 21	3769083



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NSM Ph II	Jun-21	1 Jul 21	31 Jul 21	30 Aug 21	728135337
Kanti	Jun-21	1 Jul 21	31 Jul 21	30 Aug 21	2517507
NSM Ph II	Jul-21	30 Jul 21	31 Aug 21	30 Sep 21	711088213
Kanti	Jul-21	30 Jul 21	31 Aug 21	30 Sep 21	4759352
NSM Ph II	Aug-21	31 Aug 21	30 Sep 21	30 Oct 21	602787680
Kanti	Aug-21	31 Aug 21	30 Sep 21	30 Oct 21	6089084
NSM Ph II	Sep-21	30 Sep 21	31 Oct 21	30 Nov 21	740249661
Kanti	Sep-21	30 Sep 21	31 Oct 21	30 Nov 21	2149543
NSM Ph II	Oct-21	29 Oct 21	30 Nov 21	30 Dec 21	696295713
Kanti	Oct-21	29 Oct 21	30 Nov 21	30 Dec 21	3569228
NSM Ph II	Nov-21	30 Nov 21	31 Dec 21	30 Jan 22	743624137
Kanti	Nov-21	30 Nov 21	31 Dec 21	30 Jan 22	7278505
NSM Ph II	Dec-21	28 Dec 21	31 Jan 21	2 Mar 21	563556590
Kanti	Dec-21	28 Dec 21	31 Jan 21	2 Mar 21	3860614
NSM Ph II	Jan-22	31 Jan 22	28 Feb 22	30 Mar 22	784131809
Kanti	Jan-22	31 Jan 22	28 Feb 22	30 Mar 22	5729292
NSM Ph II	Feb-22	26 Feb 22	31 Mar 22	30 Apr 22	726331852
Kanti	Feb-22	28 Feb 22	31 Mar 22	30 Apr 22	4539146
NSM Ph II	Mar-22	31 Mar 22	30 Apr 22	30 May 22	1022989761
Kanti	Mar-22	31 Mar 22	30 Apr 22	30 May 22	10601272
NSM Ph II	Apr-22	30 Apr 22	31 May 22	30 Jun 22	731234188
Kanti	Apr-22	30 Apr 22	31 May 22	30 Jun 22	19047767
NSM Ph II	May-22	31 May 22	30 Jun 22	30 Jul 22	952442140
Kanti	May-22	31 May 22	30 Jun 22	30 Jul 22	8116762
NSM Ph II	Jun-22	30 Jun 22	31 Jul 22	30 Aug 22	1058269177
Kanti	Jun-22	30 Jun 22	31 Jul 22	30 Aug 22	33899178
NSM Ph II	Jul-22	29 Jul 22	31 Aug 22	30 Sep 22	785680384
Kanti	Jul-22	29 Jul 22	31 Aug 22	30 Sep 22	1713500
NSM Ph II	Aug-22	30 Aug 22	30 Sep 22	30 Oct 22	734105157
NSM Ph II	Sep-22	29 Sep 22	31 Oct 22	30 Nov 22	793023413
NSM Ph II	Oct-22	31 Oct 22	30 Nov 22	30 Dec 22	728487983
NSM Ph II	Nov-22	30 Nov 22	31 Dec 22	30 Jan 23	882661107
NSM Ph II	Dec-22	30 Dec 22	31 Jan 23	2 Mar 23	827107764
NSM Ph II	Jan-23	29 Jan 23	28 Feb 23	31 Mar 23	791306275

M/s. Singareni TPP Monthly Invoice claim.

Billing period	Billing Date	Bill presentation Date	Bill claimed by M/s SCCL Rs.
12-03-16 to 13-03-16	25:05:16	25:05:16	3,223,786
24-05-16 to 25-06-16	2:07:16	4:07:16	170,223,924
26-06-16 to 25-07-16	28:07:16	29:07:16	208,384,476
26-07-16 to 25-08-16	30:08:16	31:08:16	265,969,297
26-08-16 to 25-09-16	29:09:16	1:10:16	601,902,817
25-09-16 to 25-06-16	1:11:16	2:11:16	730,393,220
25-09-16 to 25-10-16	1:11:16	2:11:16	99,527,822
26-10-16 to 25-11-16	1:12:16	2:12:16	1,078,408,000
26-10-16 to 25-11-16	1:12:16	2:12:16	348,964,136
26-11-16 to 02-12-16	2:01:17	4:01:17	202,012,420
26-11-16 to 02-12-16	4:01:17	11:01:17	161,718,240
03-12-16 to 31-12-16	2:01:17	4:01:17	1,769,182,440
01.01.17 to 31.01.17	3:02:17	4:02:17	2,209,086,840
31.01.17 to 28.02.17	2:03:17	6:03:17	2,319,424,800
28.02.17 to 31.03.17	4:04:17	6:04:17	2,411,982,720
01-04-2017 to 30-04-2017	03-05-17	04-05-17	2,252,542,640
01-05-2017 to 31-05-2017	31-05-17	01-06-17	2,190,407,040
01-06-2017 to 30-06-2017	04-07-17	05-07-17	2,355,443,607
Supplementary bill (16-17)	02-08-17	03-08-17	1,604,869,367
01-07-2017 to 31-07-2017	02-08-17	03-08-17	2,485,799,003
Supplementary bill(Apr-May-17)	02-08-17	03-08-17	396,802,974
FPA Q1	31-08-17	06-09-17	712,781,703
01-08-2017 to 31-08-2017	01-09-17	06-09-17	3,004,964,820
01-09-2017 to 30-09-2017	05-10-17	07-10-17	2,867,773,461
01-10-2017 to 31-10-2017	01-11-17	03-11-17	2,998,604,784
FPAQ2	04-12-17	07-12-17	(126,589,737)
OCT-17 FPA	04-12-17	07-12-17	(97,467,034)
01-11-2017 to 30-11-2017	04-12-17	07-12-17	2,716,589,438
NOV-17 FPA	02-01-18	03-01-18	236,414,961
01-12-2017 to 31-12-2017	02-01-18	03-01-18	3,212,730,219
DEC-17 FPA	06-02-18	07-02-18	(145,984,193)
01-01-2018 to 31-01-2018	05-02-18	07-02-18	2,937,203,304
JAN-18 FPA	03-03-18	06-03-18	127,541,727
01-02-2018 to 31-02-2018	05-03-18	06-03-18	2,916,587,127
FEB-18 FPA	05-04-18	06-04-18	(46,371,520)
01-03-2018 to 31-03-2018	05-04-18	06-04-18	3,381,574,115
MAR-18 FPA	02-05-18	08-05-18	(15,446,772)
Difference of revised bills for 2016-17 with earlier bill as per CERC reg 30(6)	31-03-18	05-06-18	(425,450)
Difference of revised bills for 2017-18 with earlier bill as per CERC reg 30(6)	31-03-18	05-06-18	(1,771,193)
April Prov (01-04-2018 to 30-04-2018)	02-05-18	08-05-18	2,785,946,709
April-18 FPA	02-06-18	05-06-18	10,036,320
May Prov (01-05-2018 to 31-05-2018)	02-06-18	05-06-18	3,019,067,973
May-18 FPA	02-07-18	04-07-18	(18,394,080)
June Prov (01-06-2018 to 30-06-2018)	02-07-18	04-07-18	2,232,030,549
June-18 FPA	01-08-18	03-08-18	(11,970,336)
July Prov (01-07-2018 to 31-07-2018)	01-08-18	03-08-18	2,606,836,533
July-18 FPA	01-09-18	04-09-18	33,009,900



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August Prov (01-08-2018 to 31-08-2018)	01-09-18	04-09-18	3,010,807,938
August-18 FPA	03-10-18	05-10-18	(40,376,407)
September Prov (01-09-2018 to 30-09-2018)	03-10-18	05-10-18	3,080,558,571
September-18 FPA	01-11-18	02-11-18	82,715,778
October Prov (01-10-2018 to 31-10-2018)	01-11-18	02-11-18	3,219,206,877
October-18 FPA	01-12-18	03-12-18	25,878,831
November Prov (01-11-2018 to 30-11-2018)	01-12-18	03-12-18	2,443,867,583
November-18 FPA	01-01-19	03-01-19	(92,027,510)
December Prov (01-12-2018 to 31-12-2018)	01-01-19	03-01-19	2,262,682,983
December-18 FPA	01-02-19	04-02-19	(5,024,085)
January Prov (01-01-2019 to 31-01-2019)	01-02-19	04-02-19	3,070,706,989
January-19 FPA	01-03-19	05-03-19	102,073,272
February Prov (01-02-2019 to 28-02-2019)	01-03-19	05-03-19	3,026,421,403
February FPA	03-04-19	04-04-19	(17,624,555)
March Prov (01-03-2019 to 31-03-2019)	03-04-19	04-04-19	2,865,546,622
Mar FPA	05-02-19	05-03-19	(75,564,000)
Additional coal bill			1,214,335,923
April-19 Prov (01-04-2019 to 30-04-2019)	02-05-19	02-05-19	2,913,395,716
April-19 FPA	04-06-19	04-06-19	382,943,911
May-19 Prov (01-05-2019 to 31-05-2019)	04-06-19	04-06-19	3,334,817,079
May-19 FPA	02-07-19	02-07-19	66,925,533
June-19 Prov (01-06-2019 to 30-06-2019)	02-07-19	02-07-19	3,380,025,783
June-19 FPA	02-08-19	02-08-19	(101,272,850)
July-19 Prov (01-07-2019 to 31-07-2019)	02-08-19	02-08-19	3,218,230,245
July-19 FPA	01-09-19	01-09-19	40,622,670
August-19 Prov (01-08-2019 to 31-08-2019)	01-09-19	01-09-19	3,197,040,711
August-19 FPA	01-10-19	01-10-19	159,606,898
September-19 Prov (01-09-2019 to 30-09-2019)	01-10-19	01-10-19	3,236,011,555
September-19 FPA	01-11-19	01-11-19	97,127,568
October-19 Prov (01-10-2019 to 31-10-2019)	01-11-19	01-11-19	2,959,999,043
October-19 FPA	30-11-19	30-11-19	(117,778,989)
November-19 Prov (01-11-2019 to 30-11-2019)	30-11-19	30-11-19	2,963,331,141
November-19 FPA	31-12-19	31-12-19	31,553,232
December-19 Prov (01-12-2019 to 31-12-2019)	31-12-19	31-12-19	3,501,532,833
December-19 FPA	31-01-20	31-01-20	(50,014,250)
January-20 Prov (01-01-2020 to 31-01-2020)	31-01-20	31-01-20	3,428,912,213
January-20 FPA	29-02-20	29-02-20	(15,991,584)
February-20 Prov (01-02-2020 to 28-02-2020)	29-02-20	29-02-20	3,492,548,957
February-20 FPA	31-03-20	31-03-20	48,171,761
March-20 Prov (01-03-2020 to 31-03-2020)	01-04-20	01-04-20	3,664,613,383
Mar-20 FPA	02-05-20	02-05-20	341,408,255
April-20 Prov (01-04-2020 to 30-04-2020)	02-05-20	02-05-20	3,184,940,729
April-20 FPA	01-06-20	01-06-20	(365,003,668)
May-20 Prov (01-05-2020 to 31-05-2020)	01-06-20	01-06-20	3,036,868,677
May-20 FPA	01-07-20	01-07-20	(113,050,836)
June-20 Prov (01-06-2020 to 30-06-2020)	01-07-20	01-07-20	1,363,435,829
June-20 FPA	01-08-20	01-08-20	(562,688)
<b>Supplementary bill Water royalty charges</b>	<b>01-08-20</b>	<b>01-08-20</b>	<b>10,583,211</b>
July-20 Prov (01-07-2020 to 31-07-2020)	01-08-20	01-08-20	2,184,574,329
July-20 FPA	31-08-20	31-08-20	25,092,272
August-20 Prov (01-08-2020 to 31-08-2020)	31-08-20	31-08-20	2,833,545,147
<b>Revision for 2016-19</b>	<b>03-09-20</b>	<b>03-09-20</b>	<b>686,672,600</b>



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September-20 Prov (01-09-2020 to 30-09-2020)	30-09-20	30-09-20	2,832,190,553
<b>Rev (1st Instalment bill)</b>	<b>01-10-20</b>	<b>01-10-20</b>	<b>(13,954,520)</b>
September-20 FPA	31-10-20	31-10-20	(8,498,980)
October-20 Prov (01-10-2020 to 31-10-2020)	31-10-20	31-10-20	3,044,387,405
<b>Rev (2nd Instalment bill)</b>	<b>31-10-20</b>	<b>31-10-20</b>	<b>(13,954,520)</b>
October-20 FPA	30-11-20	30-11-20	(63,564,732)
November-20 Prov (01-11-2020 to 30-11-2020)	30-11-20	30-11-20	3,030,215,513
<b>Rev (3rd Instalment bill)</b>	<b>30-11-20</b>	<b>30-11-20</b>	<b>(13,954,520)</b>
November-20 FPA	31-12-20	31-12-20	(9,945,138)
December-20 Prov (01-12-2020 to 31-12-2020)	31-12-20	31-12-20	3,070,962,143
<b>Rev (4th Instalment bill)</b>	<b>31-12-20</b>	<b>31-12-20</b>	<b>(13,954,520)</b>
December-20 FPA	01-02-21	01-02-21	41,634,795
January-21 Prov (01-01-2021 to 31-01-2021)	01-02-21	01-02-21	3,306,621,566
<b>Rev (5th Instalment bill)</b>	<b>01-02-21</b>	<b>01-02-21</b>	<b>(13,954,520)</b>
January-21 FPA	01-03-21	01-03-21	(34,638,693)
February-21 Prov (01-02-2021 to 28-02-2021)	01-03-21	01-03-21	2,432,333,448
<b>Rev (6th Instalment bill)</b>	<b>01-03-21</b>	<b>01-03-21</b>	<b>(13,954,520)</b>
February-21 FPA	01-04-21	01-04-21	(49,872,938)
March-21 Prov (01-03-2021 to 31-03-2021)	01-04-21	01-04-21	2,719,412,498
Mar-21 FPA	30-04-21	30-04-21	34,961,463
April-21 Prov (01-04-2021 to 30-04-2021)	30-04-21	30-04-21	3,209,253,851
April-21 FPA	31-05-21	31-05-21	23,567,880
May-21 Prov (01-05-2021 to 31-05-2021)	31-05-21	31-05-21	3,142,242,195
May-21 FPA	30-06-21	30-06-21	(19,514,092)
June-21 Prov (01-06-2021 to 30-06-2021)	30-06-21	30-06-21	3,075,013,729
June-21 FPA	31-07-21	31-07-21	16,101,558
July-21 Prov (01-07-2021 to 31-07-2021)	31-07-21	31-07-21	2,859,312,607
July-21 FPA	31-08-21	31-08-21	150,238,062
August-21 Prov (01-08-2021 to 31-08-2021)	31-08-21	31-08-21	2,728,060,621
August-21 FPA	30-09-21	30-09-21	4,878,099
September-21 Prov (01-09-2021 to 30-09-2021)	30-09-21	30-09-21	3,296,708,758
September-21 FPA	01-11-21	01-11-21	(16,317,774)
October-21 Prov (01-10-2021 to 31-10-2021)	01-11-21	01-11-21	3,354,609,081
October-21 FPA	30-11-21	30-11-21	122,146,026
November-21 Prov (01-11-2021 to 30-11-2021)	30-11-21	30-11-21	3,453,069,187
November-21 FPA	31-12-21	31-12-21	(3,801,060)
December-21 Prov (01-12-2021 to 31-12-2021)	31-12-21	31-12-21	3,455,745,487
December-21 FPA	31-01-22	31-01-22	(134,183,104)
January-22 Prov (01-01-2022 to 31-01-2022)	31-01-22	31-01-22	3,382,111,235
January-22 FPA	28-02-22	28-02-22	25,094,144
February-22 Prov (01-02-2022 to 28-02-2022)	28-02-22	28-02-22	3,113,641,405
February-22 FPA	01-04-22	01-04-22	(42,824,754)
March-22 Prov (01-03-2022 to 31-03-2022)	01-04-22	01-04-22	3,756,407,443
Mar-22 FPA	02-05-22	02-05-22	(166,632,675)
Apr'22 Provisional	02-05-22	02-05-22	3,135,222,693
Apr'22 FPA	31-05-22	31-05-22	365,950,640
May'22 Provisional	31-05-22	31-05-22	3,163,397,333
May'22 FPA	30-06-22	30-06-22	107,096,256
June'22 Provisional	30-06-22	30-06-22	3,453,981,287
June'22 FPA	01-08-22	01-08-22	53,933,775
July'22 Provisional	01-08-22	01-08-22	3,685,105,205
July'22 FPA	31-08-22	31-08-22	27,084,960

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Aug'22 Provisional	31-08-22	31-08-22	3,534,019,949
Aug'22 FPA	30-09-22	30-09-22	15,107,463
Sep'22 Provisional	30-09-22	30-09-22	3,807,980,263
Sep'22 FPA	31-10-22	31-10-22	(7,980,100)
Oct'22 Provisional	31-10-22	31-10-22	3,709,537,098
Oct'22 FPA	30-11-22	30-11-22	122,146,026
Nov'22 Provisional	30-11-22	30-11-22	3,833,140,613
Nov'22 FPA	31-12-22	31-12-22	67,343,160
Dec'22 Provisional	31-12-22	31-12-22	3,874,737,959
Dec'22 FPA	31-01-23	31-01-23	(17,839,927)
Jan'23 Provisional	31-01-23	31-01-23	3,930,093,742



**M/s NLC India Ltd- Monthwise claims**

Sl.No	Period of Supply	Invoice Amount	Invoice Date
1	April'2016	204079509	04-May-16
2	May'2016	248805853	03-Jun-16
3	June'2016	210615192	05-Jul-16
4	July'2016	209082900	03-Aug-16
5	Aug'2016	288995763	03-Sep-16
6	Sep-16	285820848	05-Oct-16
7	Oct-16	217721684	04-Nov-16
8	Nov-16	19,05,90,976	03-Dec-16
9	Dec-16	23,12,94,731	04-Jan-17
10	Jan-17	28,84,15,001	04-Feb-17
11	Feb-17	28,68,28,172	04-Mar-17
12	Mar-17	34,94,11,038	05-Apr-17
13	Apr-17	29,84,57,225	05-May-17
14	May-17	10,39,79,537	06-Jun-17
15	Jun-17	15,02,54,493	05-Jul-17
16	Jul-17	19,06,62,938	05-Aug-17
17	Aug-17	10,94,21,089	04-Sep-17
18	Sep-17	21,46,95,294	05-Oct-17
19	Oct-17	20,24,83,378	03-Nov-17
20	Nov-17	16,68,18,753	05-Dec-17
21	Dec-17	22,50,39,594	04-Jan-18
22	Jan-18	22,67,35,911	05-Feb-18
23	Feb-18	22,91,34,664	03-Mar-18
24	Mar-18	28,35,50,782	04-Apr-18
25	Apr-18	13,94,58,759	03-May-18
26	May-18	19,09,22,513	05-Jun-18
27	Jun-18	21,55,96,420	04-Jul-18
28	Jul-18	25,63,16,162	03-Aug-18
29	Aug-18	21,86,86,707	05-Sep-18
30	Sep-18	29,58,20,319	04-Oct-18
31	Oct-18	30,38,62,678	03-Nov-18
32	Nov-18	30,10,77,108	05-Dec-18
33	Dec-18	30,88,22,459	04-Jan-19
34	Jan-19	30,25,00,667	05-Feb-19
35	Feb-19	27,84,49,593	05-Mar-19
36	Mar-19	30,91,68,225	03-Apr-19
37	Apr-19	28,81,36,710	04-May-19
38	May-19	23,37,86,669	06-Jun-19
39	Jun-19	19,97,24,723	03-Jul-19
40	Jul-19	25,95,14,425	03-Aug-19
41	Aug-19	36,92,79,114	05-Sep-19
42	Sep-19	22,76,69,381	04-Oct-19
43	Oct-19	29,09,44,453	05-Nov-19
44	Nov-19	35,98,13,099	04-Dec-19
45	Dec-19	41,50,93,160	04-Jan-20
46	Jan-20	53,10,40,677	04-Feb-20

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Sl.No	Period of Supply	Invoice Amount	Invoice Date
47	Feb-20	50,85,45,289	04-Mar-20
48	Mar-20	44,60,06,122	04-Apr-20
49	Apr-20	46,19,19,712	05-May-20
50	May-20	41,04,00,642	05-Jun-20
51	Jun-20	47,00,59,004	04-Jul-20
52	Jul-20	13,32,50,475	03-Aug-20
53	Aug-20	14,69,21,745	04-Sep-20
54	Sep-20	25,33,65,883	06-Oct-20
55	Oct-20	22,95,73,323	05-Nov-20
56	Nov-20	29,78,54,283	05-Dec-20
57	Dec-20	33,20,11,334	05-Jan-21
58	Jan-21	36,51,96,334	04-Feb-21
59	Feb-21	39,47,52,746	05-Mar-21
60	Mar-21	44,73,70,173	05-Apr-21
61	Apr'21	41,86,32,758	04-May-21
62	May'21	39,64,85,761	04-Jun-21
63	Jun'21	41,31,24,060	03-Jul-21
64	Jul'21	41,93,10,520	31-Jul-21
65	Aug'21	42,75,47,361	01-Sep-21
66	Sep'21	45,20,29,062	04-Oct-21
67	Oct'21	38,74,44,570	05-Nov-21
68	Nov'21	30,04,65,214	02-Dec-21
69	Dec'21	40,93,34,500	04-Jan-22
70	Jan'22	44,92,54,235	04-Feb-22
71	Feb'22	40,66,05,635	03-Mar-22
72	Mar'22	43,96,52,205	02-Apr-22
73	Apr'22	205542617	04-May-22
74	May'22	272159606	03-Jun-22
75	Jun'22	207382890	02-Jul-22
76	Jul'22	255911688	03-Aug-22
77	Aug'22	222398027	03-Sep-22
78	Sep'22	186289133	04-Oct-22
79	Oct'22	186436366	03-Nov-22
80	Nov'22	188918228	03-Dec-22

M/s.NLC TAMILANADU POWER LIMITED			
Month wise claims			
SI.No.	Period of supply	Invoice Amount	Invoice Date
1	Apr-16	194399445	05-May-16
2	May-16	268776710	04-Jun-16
3	Jun-16	177149974	05-Jul-16
4	Jul-16	280299148	04-Aug-16
5	Aug-16	286668925	03-Sep-16
6	Sep-16	340980387	05-Oct-16
7	Oct-16	268142396	04-Nov-16
8	Nov-16	269188649	03-Dec-16
9	Dec-16	284684592	04-Jan-17
10	Jan-17	392595874	04-Feb-17
11	Feb-17	361648534	04-Mar-17
12	Mar-17	218016322	06-Apr-17
13	Apr-17	165332045	05-May-17
14	May-17	240191662	06-Jun-17
15	Jun-17	152816531	05-Jul-17
16	Jul-17	434174968	05-Aug-17
17	Aug-17	292560810	05-Sep-17
18	Sep-17	92847334	06-Oct-17
19	Oct-17	235253380	06-Nov-17
20	Nov-17	261547415	06-Dec-17
21	Dec-17	397507923	04-Jan-18
22	Jan-18	381040700	06-Feb-18
23	Feb-18	397136974	03-Mar-18
24	Mar-18	397347630	04-Apr-18
25	Apr-18	207647085	04-May-18
26	May-18	345792878	05-Jun-18
27	Jun-18	298519122	05-Jul-18
28	Jul-18	288321239	07-Aug-18
29	Aug-18	279537126	05-Sep-18
30	Sep-18	405239961	06-Oct-18
31	Oct-18	550003133	05-Nov-18



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Sl.No.	Period of supply	Invoice Amount	Invoice Date
32	Nov-18	464953948	10-Dec-18
33	Dec-18	382352833	07-Jan-19
34	Jan-19	339066847	06-Feb-19
35	Feb-19	189009302	07-Mar-19
36	Mar-19	215978646	04-Apr-19
37	Apr-19	223615422	07-May-19
38	May-19	179356158	06-Jun-19
39	Jun-19	167991718	05-Jul-19
40	Jul-19	238609849	06-Aug-19
41	Aug-19	481769220	06-Sep-19
42	Sep-19	299257278	04-Oct-19
43	Oct-19	275817479	05-Nov-19
44	Nov-19	327536057	05-Dec-19
45	Dec-19	527282515	04-Jan-20
46	Jan-20	520910540	05-Feb-20
47	Feb-20	483338389	04-Mar-20
48	Mar-20	414668316	06-Apr-20
49	Apr-20	413011738	07-May-20
50	May-20	361382675	06-Jun-20
51	Jun-20	442065941	06-Jul-20
52	Jul-20	435326120	06-Aug-20
53	Aug-20	357616105	05-Sep-20
54	Sep-20	369962121	06-Oct-20
55	Oct-20	358290720	06-Nov-20
56	Nov-20	353180696	04-Dec-20
57	Dec-20	328603151	05-Jan-21
58	Jan-21	427666268	05-Feb-21
59	Feb-21	444492918	05-Mar-21
60	Mar-21	405158624	06-Apr-21
61	Apr-21	453418939	05-May-21
62	May-21	355969410	04-Jun-21
63	Jun-21	291859875	03-Jul-21
64	Jul-21	292985206	04-Aug-21
65	Aug-21	434049396	03-Sep-21
66	Sep-21	306164196.3	04-Oct-21
67	Oct-21	178674871.3	05-Nov-21
68	Nov-21	234189695	03-Dec-21
69	Dec-21	297260707	04-Jan-22
70	Jan-22	341772125.9	04-Feb-22
71	Feb-22	265275537	03-Mar-22
72	Mar-22	283712672	02-Apr-22
73	Apr-22	333901095	04-May-22
74	May-22	829365422	03-Jun-22
75	Jun-22	540355728	02-Jul-22
76	Jul-22	475740722	03-Aug-22
77	Aug-22	526941843	03-Sep-22
78	Sep-22	388479551	04-Oct-22
79	Oct-22	363180409	03-Nov-22
80	Nov-22	332076606	03-Dec-22

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Sembcorp 265.45 MW

Supply Month	Invoice No.	Date of Invoice	Amount
Apr-15	TPCIL/2015-16/013/LT/TG	9-Jun-15	22,80,72,180
May-15	TPCIL/2015-16/017/LT/TG	9-Jun-15	37,35,05,661
June-15	TPCIL/2015-16/022/LT/TG	3-Jul-15	67,46,06,200
July-15	TPCIL/2015-16/039/LT/TG	6-Aug-15	63,37,25,315
August-15	TPCIL/2015-16/052/LT/TG	4-Sep-15	52,79,97,738
September-15	TPCIL/2015-16/069/LT/TG	6-Oct-15	68,55,40,036
October-15	TPCIL/2015-16/097/LT/TG	4-Nov-15	70,64,14,659
November-15	TPCIL/2015-16/122/LT/TG	8-Dec-15	61,44,79,305
December-15	TPCIL/2015-16/150/LT/TG	6-Jan-16	66,41,43,807
	TPCIL/2015-16/178/LT/TG	5-Feb-16	1,00,48,114
January-16	TPCIL/2015-16/180/LT/TG	4-Feb-16	66,62,57,466
February-16	TPCIL/2015-16/205/LT/TG	4-Mar-16	63,62,74,350
March-16	TPCIL/2015-16/237/LT/TG	6-Apr-16	67,81,88,730
Total FY 2015-16 (Rs.)			7,09,92,53,561
April-16	TPCIL/2016-17/14/LT/TG	6-May-16	35,23,42,759
	TPCIL/2016-17/23/LT/TG	23-May-16	18,73,421
May-16	TPCIL/2016-17/29/LT/TG	6-Jun-16	48,86,13,501
	TPCIL/2016-17/41/LT/TG	29-Jun-16	63,48,850
June-16	TPCIL/2016-17/46/LT/TG	6-Jul-16	63,68,21,229
July-16	TPCIL/2016-17/60/LT/TG	5-Aug-16	63,78,56,966
August-16	TPCIL/2016-17/71/LT/TG	5-Sep-16	69,77,49,543
September-16	TPCIL/2016-17/82/LT/TG	5-Oct-16	51,81,41,182
October-16	TPCIL/2016-17/99/LT/TG	3-Nov-16	62,50,90,024
November-16	TPCIL/2016-17/111/LT/TG	5-Dec-16	65,94,47,120
December-16	TPCIL/2016-17/120/LT/TG	5-Jan-17	55,96,83,233
January-17	TPCIL/2016-17/134/LT/TG	18-Jan-17	15,76,897
	TPCIL/2016-17/143/LT/TG	4-Feb-17	50,33,01,971
February-17	TPCIL/2016-17/165/LT/TG	6-Mar-17	65,12,58,099
March-17	TPCIL/2016-17/190/LT/TG	5-Apr-17	70,37,00,959
Total FY 2016-17 (Rs.)			7,04,38,05,754
April-17	TPCIL/2017-18/011/LT/TG-269.45	5-May-17	65,87,64,525
May-17	TPCIL/2017-18/042/LT/TG-269.45	5-Jun-17	67,57,17,480
June-17	TPCIL/2017-18/069/LT/TG-269.45	5-Jul-17	65,60,72,093
July-17	TPCIL/2017-18/080/LT/TG-269.45	4-Aug-17	67,68,26,562
August-17	TPCIL/2017-18/095/LT/TG-269.45	6-Sep-17	67,32,70,853
September-17	TPCIL/2017-18/115/LT/TG-269.45	5-Oct-17	62,96,50,507
October-17	TPCIL/2017-18/127/LT/TG-269.45	4-Nov-17	61,29,19,931
November-17	TPCIL/2017-18/137/LT/TG-269.45	5-Dec-17	63,97,16,785
December-17	TPCIL/2017-18/148/LT/TG-269.45	3-Jan-18	57,38,67,196
January-18	TPCIL/2017-18/161/LT/TG-269.45	6-Feb-18	67,14,66,041
February-18	SEIL/2017-18/171/LT/TG-269.45	5-Mar-18	53,43,98,534
March-18	SEIL/2017-18/181/LT/TG-269.45	3-Apr-18	67,70,60,056
Total FY 2017-18 (Rs.)			7,67,97,30,563
April-18	SEIL/2018-19/003/LT/TG-269.45	4-May-18	65,10,48,323
May-18	SEIL/2018-19/018/LT/TG-269.45	5-Jun-18	59,82,48,207
June-18	SEIL/2018-19/032/LT/TG	20-Jun-18	15,88,12,678
	SEIL/2018-19/TG-269.45/036/LT	5-Jul-18	9,40,919
	SEIL/2018-19/038/LT/TG-269.45	5-Jul-18	14,91,575
	SEIL/2018-19/040/LT/TG-269.45	5-Jul-18	65,20,15,261
July-18	SEIL/2018-19/057/LT/TG-269/Supple Bill-June'18	24-Jul-18	1,39,66,460
	SEIL/2018-19/LT/61/TG-269/JULY-2018	3-Aug-18	68,97,58,168
August-18	SEIL/2018-19/074/LT/TG-269/August-2018	5-Sep-18	69,24,17,525
September-18	SEIL/2018-19/87/LT/TG-269/LT/Sep-2018	5-Oct-18	67,60,67,988



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October-18	SEIL/2018-19/95/LT/TG-269/LT/Oct-2018	5-Nov-18	56,08,92
November-18	SEIL/2018-19/106/LT/TG-269/Nov-2018	5-Dec-18	50,47,74,13
December-18	SEIL/2018-19/115/LT/TG-269/Dec'2018	5-Jan-19	50,49,13,166
January-19	SEIL/2018-19/125/LT/TG-269/Jan'2019	5-Feb-19	45,98,39,799
February-19	SEIL/2018-19/137/LT/TG-269/Feb'2019	5-Mar-19	38,28,72,299
March-19	SEIL/2018-19/151/LT/TG-269.45/Mar'2019	5-Apr-19	72,33,03,335
Total FY 2018-19 (Rs.)			7,27,13,68,396
April-19	SEIL/2019-20/005/LT/TG-269/ Apr'2019	5-May-19	65,70,95,205
May-19	SEIL/2019-20/019/LT/TG-269	5-Jun-19	65,04,10,413
June-19	SEIL/2019-20/031/LT/TG-269	5-Jul-19	71,08,56,298
July-19	SEIL/2019-20/44/LT/TG-269/JULY'2019	5-Aug-19	72,79,45,086
August-19	SEIL/2019-20/55/LT/TG-269	5-Sep-19	72,19,25,891
September-19	SEIL/2019-20/65/LT/TG-269	5-Oct-19	70,92,10,490
October-19	SEIL/2019-20/77/LT/TG-269	5-Nov-19	72,27,43,016
November-19	SEIL/2019-20/92/LT/TG-269	5-Dec-19	71,21,41,346
December-19	SEIL/2019-20/103/LT/TG-269	5-Jan-20	74,48,93,315
January-20	SEIL/2019-20/112/LT/TG-269	5-Feb-20	73,75,07,222
February-20	SEIL/2019-20/121/LT/TG-269	5-Mar-20	70,21,48,654
March-20	SEIL/2019-20/137/LT/TG-269	5-Apr-20	74,82,47,176
Total FY 2019-20 (Rs.)			8,54,51,24,112
April-20	SEIL/2020-21/002/LT/TG-269	5-May-20	69,02,75,514
May-20	SEIL/2020-21/011/LT/TG269/Supple Bill-Apr'2020	15-May-20	3,29,807
	SEIL/2020-21/015/LT/TG269.45	5-Jun-20	71,02,95,484
June-20	SEIL/2020-21/27/LT/TG-269.45	4-Jul-20	54,58,89,819
July-20	SEIL/2020-21/36/LT/TG-269.45	5-Aug-20	20,84,57,020
August-20	SEIL/2020-21/45/LT/TG-269.45	5-Sep-20	55,57,58,267
September-20	SEIL/2020-21/54/LT/TG-269.45	5-Oct-20	71,52,59,247
October-20	SEIL/2020-21/066/LT/TG269.45	5-Nov-20	74,77,33,385
November-20	SEIL/2020-21/075/LT/TG269.45	5-Dec-20	54,73,90,867
December-20	SEIL/2020-21/084/LT/TG269.45	5-Jan-21	76,51,92,651
January-21	SEIL/2020-21/094/LT/TG-269.45/JAN'2021	5-Feb-21	77,00,81,642
February-21	SEIL/2020-21/100/LT/TG269.45	5-Mar-21	67,86,15,199
March-21	SEIL/2021-22/02/LT/TG-269.45MW	5-Apr-21	74,00,95,969
Total FY 2020-21 (Rs.)			7,67,53,74,871
April-21	SEIL/2021-22/010/LT/TG269.45/ Apr'21	5-May-21	71,58,49,035
May-21	SEIL/2021-22/016/LT/TG269.45/MAY'2021	4-Jun-21	69,12,73,363
June-21	SEIL/2021-22/029/LT/TG269.45	5-Jul-21	61,92,54,424
July-21	SEIL/2021-22/037/LT/TG269.45	4-Aug-21	73,08,16,301
August-21	SEIL/2021-22/055/LT/TG269.45/AUGUST'2021	4-Sep-21	72,22,58,600
September-21	SEIL/2021-22/064/LT/TG269.45	4-Oct-21	64,88,82,199
October-21	SEIL/2021-22/070/LT/TG269.45	3-Nov-21	67,13,02,226
November-21	SEIL/2021-22/076/LT/TG269.45	3-Dec-21	59,36,59,726
December-21	SEIL/2021-22/82/LT/TG269.45	3-Jan-22	65,71,08,135
January-22	SEIL/2021-22/088/LT/TG269.45/Jan'22	3-Feb-22	72,35,80,269
February-22	SEIL/2021-22/102/LT/TG269.45/FEBRUARY'2022	3-Mar-22	61,78,69,208
March-22	SEIL/2022-23/002/LT/TG269.45/MARCH 2022	4-Apr-22	65,69,30,182
Total FY 2021-22 (Rs.)			8,04,87,83,668

## Sembcorp Energy India Limited - Change in Law Invoices to TS-269.45

2015-16	Invoice Ref	Invoice Date	Value (Rs.)
Apr-15	SEIL/2020-21/002/CHIL/TG-269	25-Sep-20	90,29,586
May-15	SEIL/2020-21/004/CHIL/TG-269	25-Sep-20	82,49,471
Jun-15	SEIL/2020-21/006/CHIL/TG-269	25-Sep-20	1,57,30,528
Jul-15	SEIL/2020-21/008/CHIL/TG-269	25-Sep-20	1,83,82,731
Aug-15	SEIL/2020-21/010/CHIL/TG-269	25-Sep-20	1,37,31,765
Sep-15	SEIL/2020-21/012/CHIL/TG-269	25-Sep-20	1,71,86,791
Oct-15	SEIL/2020-21/014/CHIL/TG-269	25-Sep-20	1,71,76,091
Nov-15	SEIL/2020-21/016/CHIL/TG-269	25-Sep-20	2,02,95,502
Dec-15	SEIL/2020-21/018/CHIL/TG-269	25-Sep-20	2,36,19,396
Jan-16	SEIL/2020-21/020/CHIL/TG-269	25-Sep-20	2,52,90,206
Feb-16	SEIL/2020-21/022/CHIL/TG-269	25-Sep-20	2,39,34,409
Mar-16	SEIL/2020-21/024/CHIL/TG-269	25-Sep-20	2,22,00,930
			21,48,27,406

2016-17	Invoice Ref	Invoice Date	Value (Rs.)
Apr-16	SEIL/2020-21/026/CHIL/TG-269	25-Sep-20	3,34,24,881
May-16	SEIL/2020-21/028/CHIL/TG-269	25-Sep-20	4,27,38,373
Jun-16	SEIL/2020-21/030/CHIL/TG-269	25-Sep-20	3,94,73,679
Jul-16	SEIL/2020-21/032/CHIL/TG-269	25-Sep-20	4,05,02,352
Aug-16	SEIL/2020-21/034/CHIL/TG-269	25-Sep-20	4,42,70,356
Sep-16	SEIL/2020-21/036/CHIL/TG-269	25-Sep-20	4,34,58,382
Oct-16	SEIL/2020-21/038/CHIL/TG-269	25-Sep-20	6,10,08,376
Nov-16	SEIL/2020-21/040/CHIL/TG-269	25-Sep-20	4,19,71,699
Dec-16	SEIL/2020-21/042/CHIL/TG-269	25-Sep-20	3,98,51,071
Jan-17	SEIL/2020-21/044/CHIL/TG-269	25-Sep-20	3,98,00,451
Feb-17	SEIL/2020-21/046/CHIL/TG-269	25-Sep-20	4,82,55,213
Mar-17	SEIL/2020-21/048/CHIL/TG-269	25-Sep-20	5,37,42,960
	TOTAL		52,84,97,793

2017-18	Invoice Ref	Invoice Date	Value (Rs.)
Apr-17	SEIL/2020-21/050/CHIL/TG-269	25-Sep-20	5,73,92,824
May-17	SEIL/2020-21/052/CHIL/TG-269	25-Sep-20	5,05,85,758
Jun-17	SEIL/2020-21/054/CHIL/TG-269	25-Sep-20	4,77,77,417
Jul-17	SEIL/2020-21/056/CHIL/TG-269	25-Sep-20	5,36,03,278
Aug-17	SEIL/2020-21/058/CHIL/TG-269	25-Sep-20	4,74,43,671
Sep-17	SEIL/2020-21/060/CHIL/TG-269	25-Sep-20	4,52,08,569
Oct-17	SEIL/2020-21/062/CHIL/TG-269	25-Sep-20	4,25,91,027
Nov-17	SEIL/2020-21/064/CHIL/TG-269	25-Sep-20	5,13,82,104
Dec-17	SEIL/2020-21/066/CHIL/TG-269	25-Sep-20	4,42,73,708
Jan-18	SEIL/2020-21/068/CHIL/TG-269	25-Sep-20	5,22,17,073
Feb-18	SEIL/2020-21/070/CHIL/TG-269	25-Sep-20	4,23,21,613
Mar-18	SEIL/2020-21/072/CHIL/TG-269	25-Sep-20	4,80,34,818
	TOTAL		58,28,31,860



Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

2018-19	Invoice Ref	Invoice Date	Value (Rs.)
Apr-18	SEIL/2020-21/074/CHIL/TG-269	25-Sep-20	4,74,69,086
May-18	SEIL/2020-21/076/CHIL/TG-269	25-Sep-20	4,33,83,146
Jun-18	SEIL/2020-21/078/CHIL/TG-269	25-Sep-20	4,70,88,782
Jul-18	SEIL/2020-21/080/CHIL/TG-269	25-Sep-20	4,87,57,934
Aug-18	SEIL/2020-21/082/CHIL/TG-269	25-Sep-20	5,16,49,063
Sep-18	SEIL/2020-21/084/CHIL/TG-269	25-Sep-20	4,91,21,306
Oct-18	SEIL/2020-21/086/CHIL/TG-269	25-Sep-20	3,68,66,294
Nov-18	SEIL/2020-21/088/CHIL/TG-269	25-Sep-20	2,81,82,379
Dec-18	SEIL/2020-21/090/CHIL/TG-269	25-Sep-20	2,85,90,788
Jan-19	SEIL/2020-21/092/CHIL/TG-269	25-Sep-20	3,10,60,421
Feb-19	SEIL/2020-21/094/CHIL/TG-269	25-Sep-20	2,57,75,677
Mar-19	SEIL/2020-21/096/CHIL/TG-269	25-Sep-20	4,72,98,861
	TOTAL		48,52,43,737

2019-20	Invoice Ref	Invoice Date	Value (Rs.)
Apr-19	SEIL/2020-21/098/CHIL/TG-269	25-Sep-20	4,32,47,753
May-19	SEIL/2020-21/100/CHIL/TG-269	25-Sep-20	4,08,12,196
Jun-19	SEIL/2020-21/102/CHIL/TG-269	25-Sep-20	4,55,55,192
Jul-19	SEIL/2020-21/104/CHIL/TG-269	25-Sep-20	4,82,83,448
Aug-19	SEIL/2020-21/106/CHIL/TG-269	25-Sep-20	4,57,38,976
Sep-19	SEIL/2020-21/108/CHIL/TG-269	25-Sep-20	4,64,87,136
Oct-19	SEIL/2020-21/110/CHIL/TG-269	25-Sep-20	4,38,62,922
Nov-19	SEIL/2020-21/112/CHIL/TG-269	25-Sep-20	4,31,73,279
Dec-19	SEIL/2020-21/114/CHIL/TG-269	25-Sep-20	4,45,48,178
Jan-20	SEIL/2020-21/116/CHIL/TG-269	25-Sep-20	4,54,59,352
Feb-20	SEIL/2020-21/118/CHIL/TG-269	25-Sep-20	4,54,51,818
Mar-20	SEIL/2020-21/120/CHIL/TG-269	25-Sep-20	5,04,70,548
	TOTAL		54,30,90,798

2,35,44,91,594

Month	Invoice Ref	Invoice Date	Value (Rs.)
Apr-20	SEIL/2020-21/132/CHIL/TG-269	7-Jan-21	4,67,99,361
May-20	SEIL/2020-21/134/CHIL/TG-269	7-Jan-21	4,51,82,803
Jun-20	SEIL/2020-21/136/CHIL/TG-269	7-Jan-21	3,28,28,928
Jul-20	SEIL/2020-21/138/CHIL/TG-269	7-Jan-21	1,45,44,498
Aug-20	SEIL/2020-21/140/CHIL/TG-269	7-Jan-21	3,62,98,132
Sep-20	SEIL/2020-21/142/CHIL/TG-269	7-Jan-21	3,90,78,164
Oct-20	SEIL/2020-21/146/CHIL/TG-269	13-Feb-21	4,61,92,349
Nov-20	SEIL/2020-21/148/CHIL/TG-269	13-Feb-21	3,46,18,400
Dec-20	SEIL/2020-21/150/CHIL/TG-269	4-Mar-21	4,95,53,240
Jan-21	SEIL/2020-21/152/CHIL/TG-269	23-Mar-21	5,13,14,742
Feb-21	SEIL/2020-21/154/CHIL/TG-269	23-Mar-21	4,64,57,290
Mar-21	SEIL/2020-21/156/CHIL/TG-269	15-Apr-21	5,02,57,971
	TOTAL		49,31,25,878

Month	Invoice Ref	Invoice Date	Value (Rs.)
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Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

Apr-21	SEIL/2021-22/158/CHIL/TG-269	3-Jun-21	5,02,44,314
May-21	SEIL/2021-22/002/CHIL/TG-269	26-Jul-21	4,90,25,474
Jun-21	SEIL/2021-22/004/CHIL/TG-269	26-Jul-21	4,16,33,730
Jul-21	SEIL/2021-22/006/CHIL/TG-269	18-Aug-21	4,95,17,398
Aug-21	SEIL/2021-22/008/CHIL/TG-269	20-Sep-21	5,26,91,815
Sep-21	SEIL/2021-22/10/CHIL/TG-269	19-Oct-21	5,05,97,399
Oct-21	SEIL/2021-22/12/CHIL/TG-269	23-Nov-21	4,32,29,434
Nov-21	SEIL/2021-22/14/CHIL/TG-269	30-Dec-21	4,17,17,309
Dec-21	SEIL/2021-22/16/CHIL/TG-269	24-Jan-22	4,58,06,945
Jan-22	SEIL/2021-22/18/CHIL/TG-269	24-Feb-22	5,06,12,122
Feb-22	SEIL/2021-22/20/CHIL/TG-269	26-Mar-22	4,56,67,452
Mar-22	SEIL/2021-22/24/CHIL/TG-269	28-Apr-22	4,72,98,665
	TOTAL		56,80,42,057

Sembcorp Energy India Limited - Carrying cost Invoices on Change in law to TS-269.45

	Invoice Ref	Invoice Date	Value (Rs.)
Apr-19	SEIL/2020-21/122/CHIL/TG-269	25-Sep-20	12,80,06,995
May-19	SEIL/2020-21/124/CHIL/TG-269	25-Sep-20	23,17,89,925
Jun-19	SEIL/2020-21/126/CHIL/TG-269	25-Sep-20	18,02,21,689
Jul-19	SEIL/2020-21/128/CHIL/TG-269	25-Sep-20	9,47,91,773
Aug-19	SEIL/2020-21/130/CHIL/TG-269	25-Sep-20	4,43,87,795
April to July 20	SEIL/2020-21/144/CHIL/TG-269	8-Jan-21	25,92,619
			68,17,90,796

**TELANGANA STATE POWER GENERATION CORPORATION LTD**  
**Bills Analysis for FY 2021-22**

S.No.	Bill Particulars	Bill/Invoice Date	Due Date	Total bill amount (Rs.)
1	April-21 bill	05-May-21	04-Jul-21	11,692,713,433
2	May-21 bill	04-Jun-21	03-Aug-21	11,226,708,589
3	Adv. IT Bill for Q-1 of FY 2021-22	19-Jun-21	29-Jun-21	105,500,000
4	Jun-21 bill	05-Jul-21	03-Sep-21	10,953,631,972
5	Jun-21 revised FC bill BTPS	30-Jul-21	03-Sep-21	(85,456,800)
6	FCA for Q1 for FY 2021-22	31-Jul-21	29-Sep-21	462,886,165
7	Jul-21 bill	05-Aug-21	04-Oct-21	11,500,300,863
8	Aug-21 bill	04-Sep-21	03-Nov-21	12,196,214,785
9	Sep-21 bill	05-Oct-21	04-Dec-21	11,668,505,348
10	FCA for Q2 for FY 2020-21	01-Nov-21	31-Dec-21	1,360,175,541
11	Oct-21 bill	05-Nov-21	04-Jan-22	11,747,383,273
12	Nov-21 bill	04-Dec-21	02-Feb-22	10,105,785,027
13	Dec-21 bill	05-Jan-22	06-Mar-22	11,493,753,453
14	FCA for Q3 for FY 2021-22	31-Jan-22	01-Apr-22	1,549,096,317
15	Jan-22 bill	05-Feb-22	06-Apr-22	12,198,491,290
16	Feb-22 bill	05-Mar-22	04-May-22	12,913,344,792
17	Prov. infirm power bill for BTPS-Unit-4 from 13.10.21(21:43 Hrs) to 09.01.22 (24:00 Hrs)	15-Mar-22	15-Mar-22	287,306,161
18	Mar-22 bill	04-Apr-22	03-Jun-22	13,455,428,151
19	Prov. Thermal Incentive Bill for th FY 2021-22	21-Apr-22	20-Jun-22	80,215,410
20	Provision for supplementary Cr. bill for adjustment of Annual Fixed Charges	27-Apr-22	27-Apr-22	(207,936,635)
21	FCA for Q4 for FY 2021-22	30-Apr-22	29-Jun-22	1,939,025,850
22	True-up claim (Water Charges) 2014-19- TSPCC	14-Jun-22	31-Mar-22	602,174,551
23	Review petition bill 2014-19 (ROCE diff FC)	14-Jun-22	31-Mar-22	868,998,159
24	Differential Revenue Bill F/Y 2019-20 (including to	14-Jun-22	31-Mar-22	2,806,300,986
25	Differential Revenue Bill F/Y 2020-21 (including to	14-Jun-22	31-Mar-22	999,305,486
26	Differential Revenue Bill F/Y 2021-22 (including to	14-Jun-22	31-Mar-22	(16,014,780,324)
-	<b>GRAND TOTAL</b>			<b>135,905,071,843</b>



**TELANGANA STATE POWER GENERATION CORPORATION LTD**  
**Bills Analysis for FY 2020-21**

Sl. No.	Bill Particulars	Bill/Invoice Date	Due Date	Total bill amount (Rs.)
1	April-20 bill	05-May-20	04-Jul-20	8,324,314,431
2	May-20 bill	04-Jun-20	03-Aug-20	9,265,266,875
3	Advance Income Tax Bill for Quarter-1 of FY 2020-21	15-Jun-20	24-Jun-20	36,700,000
4	Jun-20 bill	04-Jul-20	02-Sep-20	9,058,292,932
5	FCA for Q1 for FY 2020-21	31-Jul-20	29-Sep-20	134,676,653
6	Jul-20 bill	05-Aug-20	04-Oct-20	9,659,759,688
7	Aug-20 bill	05-Sep-20	04-Nov-20	8,951,082,672
8	Sep-20 bill	05-Oct-20	04-Dec-20	9,390,162,859
9	FCA for Q2 for FY 2020-21	31-Oct-20	30-Dec-20	106,438,477
10	Oct-20 bill	05-Nov-20	04-Jan-21	9,039,301,869
11	Nov-20 bill	04-Dec-20	02-Feb-21	8,842,812,937
12	Dec-20 bill	05-Jan-21	06-Mar-21	10,897,439,340
13	Prov. infirm power bill for BTPS-Unit-1 from 19.09.2019 (16:53 hrs) to 05.06.2020 (24:00 hrs)	29-Jan-21	29-Jan-21	642,901,084
14	FCA for Q3 for FY 2020-21 (Credit Bill)	30-Jan-21	31-Mar-21	(352,919,100)
15	Jan-21 bill	05-Feb-21	06-Apr-21	11,163,858,060
16	Prov. infirm power bill for BTPS-Unit-2 from 03.07.2020 (12:58 Hrs) to 07.12.2020 (24:00 Hrs)	10-Feb-21	10-Feb-21	298,580,329
17	Revised Energy Charges in respect of KTPS-Stage-VI for the month of January-2021	16-Feb-21	06-Apr-21	(274,000)
18	Feb-21 bill	05-Mar-21	04-May-21	11,168,221,459
19	Mar-21 bill	03-Apr-21	02-Jun-21	11,907,318,116
20	Revised Energy bill for the month of Mar'21 (BTPS-FC)	03-Apr-21	02-Jun-21	(4,291,680)
21	FCA Credit Bill of Q4 for FY 2020-21	01-May-21	01-May-21	(187,174,791)
22	Thermal Incentive bill for FY 2020-21	12-May-21	11-Jul-21	178,400,678
23	Prov. infirm power bill for BTPS-Unit-3 from 15.01.21(10:37 Hrs) to 26.03.21 (24:00 Hrs)	26-May-21	26-May-21	246,237,369
24	Prov. Credit bill for fuel savings share for FY20-21	06-Jul-21		(2,920,506,506)
25	Prov. Credit bill towards true-up of Int. on PB for FY 20-21	06-Jul-21		(294,886,604)
26	Prov. Supplementary bill for adjustment of Annual Fixed Charges i.r.o TSGENCO Hydel stations for the FY 20-21	16-Jun-21		(1,087,349,684)
-	<b>GRAND TOTAL</b>			<b>114,464,363,463</b>

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

SEQUENCE CLAIM VS TSPCC ADMISSION COMPARISON - FY 2019-20 REVENUE		
Bill Particulars	Invoice Date	Total bill amount (Rs.)
April-19 bill TSPCC	04-May-19	8,950,644,411
May-19 bill TSPCC	04-Jun-19	9,280,028,125
Jun-19 bill TSPCC	05-Jul-19	8,679,287,141
Jul-19 bill TSPCC	05-Aug-19	7,422,265,298
Aug-19 bill TSPCC	05-Sep-19	7,742,526,412
Sep-19 bill TSPCC	05-Oct-19	8,066,734,657
Revised bill in respect of KTIPS-VII for the month of Sep-19 - TSPCC	21-Oct-19	(3,594,791)
Oct-19 bill TSPCC	05-Nov-19	7,384,071,396
Nov-19 bill TSPCC	05-Dec-19	7,718,116,890
Dec-19 bill TSPCC	04-Jan-20	7,973,578,448
Jan-20 bill TSPCC	05-Feb-20	7,703,911,055
Provisional Bill for adjustment of fixed charges in respect of Thermal Power Stations for the period from Apr-2019 to Jan-2020	03-Mar-20	(1,458,482,192)
Feb-20 bill TSPCC	05-Mar-20	7,091,546,833
Mar-20 bill TSPCC	04-Apr-20	7,294,967,147
Regular power bills sub-total (a)		93,845,600,830
Fuel Cost Adj. bills		
Q1 FCA for FY 2019-20	01-Aug-19	2,278,449,251
Q2 FCA for FY 2019-20	31-Oct-19	2,077,243,254
Q3 FCA for FY 2019-20	01-Feb-20	2,011,962,338
Q4 FCA for FY 2019-20	30-Apr-20	2,659,126,646
FCA Bills sub-total (b)		9,026,781,489
Advance IT Bills		
Prov. Adv. IT bill for Q1 & Q2 of F.Y.2019-20	17-Sep-19	151,100,000
Prov. Adv. IT Bill for Q3 of FY 2019-20	16-Dec-19	100,700,000
Adv. IT Bills sub-total (c)		251,800,000
Supplementary bills		
Prov. Claim towards additional interest on pension bonds in respect of pensioners transferred from AP to TS for the period from 02.06.14 to 30.06.18 on TSPCC	05-Aug-19	1,143,551,343
	21-Apr-20	258,485,987
Prov. Thermal Incentive bill for the FY 2019-20	18-Jun-20	(36,596,545)
Annual Fixed Charges withdrawn in respect of Hydel Stations - Small Hydel due to lower capacity index		
Supplementary bill for true-up of interest on pension bonds over and above scheduled interest for the F.Y.2019-20	15-Jul-20	3,740,321,278
Trueup of Variable Charges - Passing of Rebate	16-Jul-20	(2,972,192,432)
Supplementary bills sub-total (d)		2,133,569,631
Grand Total (e) = (a+b+c+d)		105,257,751,950



Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

**TELANGANA STATE POWER GENERATION CORPORATION LTD**  
Bills Analysis for FY 2018-19

S.No	Bill Particulars	Total bill amount (Rs.)	Invoice Date
1	Solar Bill from 01.04.18 - 24.04.18	1,824,058	28-Apr-18
2	April-18 bill TSPCC	7,448,792,492	05-May-18
3	Solar Bill from 24.04.18 - 24.05.18	2,211,835	28-May-18
4	May-18 bill TSPCC	7,457,384,120	05-Jun-18
5	Q1 Advance IT for 2018-19	36,000,000	20-Jun-18
6	Solar Bill from 24.05.18 - 24.06.18	2,118,238	27-Jun-18
7	June-18 bill TSPCC	7,252,868,325	05-Jul-18
8	Solar Bill from 24.06.18 - 24.07.18	1,629,699	26-Jul-18
9	Q1 FCA	3,161,518,124	01-Aug-18
10	July-18 bill TSPCC	7,167,728,531	04-Aug-18
11	Solar Bill from 24.07.18 - 24.08.18	1,795,878	28-Aug-18
12	Self assessment tax 16-17/TSPCC	32,841,159	29-Aug-18
13	Self assessment tax 16-17/APPCC	28,099,941	29-Aug-18
14	Aug-18 bill TSPCC	6,992,719,027	05-Sep-18
15	Solar Bill from 24.08.18 - 24.09.18	1,986,523	28-Sep-18
16	Sep-18 bill TSPCC	7,294,510,680	05-Oct-18
17	Infirm power bill of Pulichintala unit-IV	1,966,718	20-Oct-18
18	Sep-18 Pulichintala Unit-IV power bill	12,594,217	20-Oct-18
19	Revised energy of Sep-18	-	05-Oct-18
20	Solar Bill from 24.09.18 - 24.10.18	2,189,152	26-Oct-18
21	Q-II FCA for F.Y/2018-19	3,196,756,258	31-Oct-18
22	Oct-18 bill TSPCC	7,660,675,436	05-Nov-18
23	Solar Bill from 24.10.18 - 24.11.18	2,227,950	28-Nov-18
24	Nov-18 bill TSPCC	7,548,116,044	05-Dec-18
25	Q3 Advance IT for 2018-19	133,700,000	17-Dec-18
26	Advance IT of PJHES 2014-15, 2015-16 & 2016-17	101,384,867	22-Dec-18
27	Solar Bill from 24.11.18 - 24.12.18	1,907,771	28-Dec-18
28	Dec-18 bill TSPCC	7,004,898,910	05-Jan-19
29	NSTPD (Fixed Char.) 2017-18 and 2018-19	1,177,825,001	23-Jan-19
30	Solar Bill from 24.12.18 - 24.1.19	2,458,590	28-Jan-19
31	KTPS-VII December bill	209,603,257	29-Jan-19
32	Q-III FCA for F.Y/2018-19	4,341,624,378	31-Jan-19
33	Jan-19 bill TSPCC	8,067,018,365	05-Feb-19
34	Solar Bill from 24.1.19 - 24.2.19	2,385,814	28-Feb-19
35	Feb-19 bill TSPCC	8,588,653,287	05-Mar-19
36	Infirm bill of KTPS-VII	1,605,019,300	15-Mar-19
37	Q4 Advance IT for 2018-19	55,700,000	16-Mar-19
38	Solar Bill from 24.2.19 - 24.3.19	2,109,820	27-Mar-19
39	Mar-19 bill TSPCC	9,268,217,031	04-Apr-19
40	Solar Bill from 24.3.19 - 31.3.19	585,402	27-Apr-19
41	Q4 FCA for F.Y/2018-19	4,457,989,174	01-May-19
	<b>PROVISION AS ON 31.03.2019</b>		
41	Thermal Incentive Bill for F.Y.2018-19	291,260,160	13-May-19
42	True-up of Int. on pension bonds F.Y.18-19	2,892,392,000	17-May-19
43	True-up of Fixed Charges for non-availability F.Y.18-19	(1,852,528,047)	17-May-19
44	True-up of Fixed Charges towards R.O.C.E for F.Y.18-19	(1,640,900,000)	17-May-19
45	Revised FCA for Q4 Credit bill for grade variation	(1,458,958,956)	31-Mar-19
	<b>GRAND TOTAL</b>	<b>108,571,010,529</b>	

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## TELANGANA STATE POWER GENERATION CORPORATION LTD

## Bills Analysis for FY 2017-18

Sl.No.	Month	Total bill amount (Rs.)
1	April-17 bill TSPCC	5,285,989,730
2	May-17 bill TSPCC	5,273,376,366
3	June-17 bill TSPCC	898,438,209
4	June-17 bill TSPCC	2,404,081,385
5	June-17 bill TSPCC	2,186,484,537
6	FCA (Q1) TSPCC	1,213,508,741
7	July-17 bill TSPCC	5,495,965,314
8	July-17 bill APPCC(Admitted by TSF)	999,073,057
9	Difference bill April & may TSPCC	(141,254,691)
10	Aug-17 bill TSPCC	6,768,606,208
11	Advance IT for 1st qtr tspcc	46,560,960
12	Sep-17 bill TSPCC	6,867,465,985
13	Reversal Bill of TSPCC	1,665,121,760
14	Advance IT for 2nd qtr tspcc	65,700,000
15	FCA Q2 (TSPCC)	938,270,182
16	Oct-17 bill TSPCC	6,940,545,919
17	Pulichintala Infirm Power Unit II &	795,230
18	pulichintala reg.bill Unit-II Nov	3,108,468
19	Nov-17 bill TSPCC	7,016,569,748
20	pulichintala reg.bill Unit-III Nov	17,856,153
21	Dec-17 bill TSPCC	6,731,544,423
22	Q3 FCA 2017-18	1,674,313,991
23	Jan-18 bill TSPCC	7,380,889,019
24	Feb-18 bill TSPCC	7,263,836,789
25	Mar-18 bill TSPCC	7,941,412,575
26	Q4 FCA 2017-18	2,475,803,856
27	Th.Incentive 2017-18 TSPCC	59,229,175
28	Advance IT for 3rd qtr tspcc	96,500,000
29	Advance IT for 4th qtr tspcc	82,400,000
30	Non-Availability of FC for FY 17-18	(1,489,422,988)
31	True-up of Pension bonds FY 17-18	(278,800,000)
32	True-up of ROCE for FY 2017-18	(1,963,372,547)
-	<b>Grand total</b>	<b>83,920,597,554</b>



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SEMBCORP ENERGY INDIA LTD -570MW.

Supply Month	Invoice No.	Date of Invoice	Amount
April-16	TPCIL/2016-17/16/LT/TG-570	6-May-16	81,07,50,320
May-16	TPCIL/2016-17/31/LT/TG-570	6-Jun-16	1,22,73,69,814
June-16	TPCIL/2016-17/48/LT/TG-570	6-Jul-16	1,56,22,96,563
July-16	TPCIL/2016-17/61/LT/TG-570	5-Aug-16	1,59,48,40,643
August-16	TPCIL/2016-17/72/LT/TG-570	5-Sep-16	1,72,75,67,089
September-16	TPCIL/2016-17/83/LT/TG-570	6-Oct-16	1,37,30,63,826
October-16	TPCIL/2016-17/100/LT/TG-570	3-Nov-16	1,60,06,26,829
November-16	TPCIL/2016-17/114/LT/TG-570	8-Dec-16	1,75,07,00,980
December-16	TPCIL/2016-17/121/LT/TG-570	5-Jan-17	1,54,16,32,893
January-17	TPCIL/2016-17/144/LT/TG-570	4-Feb-17	1,30,27,60,958
February-17	TPCIL/2016-17/166/LT/TG-570	6-Mar-17	1,75,18,81,826
March-17	TPCIL/2016-17/191/LT/TG-570	5-Apr-17	2,05,29,14,769
	TPCIL/2016-17/192/LT/TG-570	5-Apr-17	45,51,70,323
Total FY 2016-17			18,75,15,76,833
April-17	TPCIL/2017-18/012/LT/TG-570	5-May-17	1,94,88,75,348
May-17	TPCIL/2017-18/036/LT/TG-570	30-May-17	1,22,348
	TPCIL/2017-18/044/LT/TG-570	5-Jun-17	1,84,71,01,288
June-17	TPCIL/2017-18/070/LT/TG-570	5-Jul-17	1,65,41,24,472
July-17	TPCIL/2017-18/081/LT/TG-570	5-Aug-17	1,92,06,76,274
August-17	TPCIL/2017-18/096/LT/TG-570	6-Sep-17	1,82,11,70,369
September-17	TPCIL/2017-18/109/LT/TG-570	28-Sep-17	(844)
	TPCIL/2017-18/110/LT/TG-570	28-Sep-17	(26,843)
	TPCIL/2017-18/116/LT/TG-570	5-Oct-17	1,74,82,35,083
October-17	TPCIL/2017-18/128/LT/TG-570	4-Nov-17	1,61,77,92,912
November-17	TPCIL/2017-18/138/LT/TG-570	5-Dec-17	1,77,98,22,475
December-17	TPCIL/2017-18/149/LT/TG-570	3-Jan-18	1,47,49,41,307
January-18	TPCIL/2017-18/162/LT/TG-570	6-Feb-18	1,82,09,48,441
February-18	TPCIL/2016-17/171/LT/TG-570	15-Feb-18	1,07,113
	SEIL/2017-18/172/LT/TG-570	5-Mar-18	1,36,76,32,678
March-18	SEIL/2017-18/182/LT/TG-570	3-Apr-18	2,01,00,61,738
Total FY 2017-18			21,01,15,84,159
April-18	SEIL/2018-19/004/LT/TG-570	4-May-18	1,89,58,43,136
May-18	SEIL/2018-19/012/LT/TG-570/Supplementary Bill	11-May-18	(21,679)
	SEIL/2018-19/013/LT/TG-570/Supplementary Bill	11-May-18	15,166
	SEIL/2018-19/019/LT/TG-570	5-Jun-18	1,65,72,12,580
June-18	SEIL/2018-19/041/LT/TG-570	5-Jul-18	1,85,82,22,584
July-18	SEIL/2018-19/LT/59/TG-570/JULY-2018	3-Aug-18	2,00,41,17,862
August-18	SEIL/2018-19/072/LT/TG-570/August-2018	5-Sep-18	1,78,33,74,847
September-18	SEIL/2018-19/85/LT/TG-570/LT/Sep-2018	5-Oct-18	1,88,53,00,380
October-18	SEIL/2018-19/94/LT/TG-570/LT/Oct-2018	5-Nov-18	1,37,09,16,541
November-18	SEIL/2018-19/108/LT/TG-570/Nov-2018	5-Dec-18	1,18,21,93,264
December-18	SEIL/2018-19/117/LT/TG-570/Dec-2018	5-Jan-19	1,19,53,80,210
January-19	SEIL/2018-19/127/LT/TG-570/Jan-2019	5-Feb-19	1,03,20,40,585
February-19	SEIL/2018-19/139/LT/TG-570/Feb-2019	5-Mar-19	80,84,46,756
March-19	SEIL/2018-19/147/LT/TG-570/Supple Bill Aug'18	15-Mar-19	39,690
	SEIL/2018-19/148/LT/FnC/TG-570/Supple Bill Jul'18	15-Mar-19	3,38,133
	SEIL/2018-19/153/LT/TG-570/Mar-2019	5-Apr-19	1,90,29,40,622
Total FY 2018-19			18,57,63,60,677
April-19	SEIL/2019-20/006/LT/TG-570/Apr-2019	5-May-19	1,75,88,27,391
May-19	SEIL/2019-20/021/LT/TG-570	5-Jun-19	1,59,51,44,430
June-19	SEIL/2019-20/033/LT/TG-570	5-Jul-19	1,69,54,00,281
July-19	SEIL/2019-20/040/LT/TG-570/Supple Bill-Jan-2019	8-Jul-19	7,539
	SEIL/2019-20/041/LT/TG-570/Supple Bill-Feb-2019	8-Jul-19	38,274
	SEIL/2019-20/46/LT/TG-570/JULY-2019	5-Aug-19	1,90,29,66,332
August-19	SEIL/2019-20/53/LT/OA/TG-570/Supple Bill-Mar-19	27-Aug-19	2,81,754
	SEIL/2019-20/54/LT/OA/TG-570/Supple Bill-Apr-19	28-Aug-19	15,56,067
	SEIL/2019-20/56/LT/TG-570	5-Sep-19	1,96,94,72,099
September-19	SEIL/2019-20/63/LT/TG-570/Supplementary Bill for May 19	18-Sep-19	3,32,636
	SEIL/2019-20/67/LT/TG-570	5-Oct-19	1,67,93,53,981



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October-19	SEIL/2019-20/78/LT/TG-570	6-Nov-19	1,71,63,18,094
November-19	SEIL/2019-20/90/LT/TG-570	5-Dec-19	1,81,23,40,283
December-19	SEIL/2019-20/104/LT/TG-570	5-Jan-20	1,94,87,20,353
January-20	SEIL/2019-20/113/LT/TG-570	5-Feb-20	1,92,10,72,613
February-20	SEIL/2019-20/122/LT/TG-570	5-Mar-20	1,81,83,01,527
March-20	SEIL/2019-20/138/LT/TG-570	5-Apr-20	1,90,93,40,501
	SEIL/2019-20/139/LT/FC/FY 19-20	5-Apr-20	(18,81,34,525)
Total FY 2019-20			
April-20	SEIL/2020-21/003/LT/TG-570		21,54,13,39,630
May-20	SEIL/2020-21/016/LT/TG-570	5-May-20	1,80,12,97,640
June-20	SEIL/2020-21/28/LT/TG-570	5-Jun-20	1,91,15,14,934
July-20	SEIL/2020-21/37/LT/TG-570	4-Jul-20	1,21,13,76,652
August-20	SEIL/2020-21/46/LT/TG-570	5-Aug-20	32,44,94,991
September-20	SEIL/2020-21/55/LT/TG-570	5-Sep-20	1,39,73,04,707
October-20	SEIL/2020-21/067/LT/TG-570	5-Oct-20	1,80,13,57,526
November-20	SEIL/2020-21/076/LT/TG-570	11-Nov-20	1,82,19,93,453
December-20	SEIL/2020-21/085/LT/TG-570	5-Dec-20	1,39,12,88,114
January-21	SEIL/2020-21/06/DBN/TG-570/ Apr'20 EB Bill	5-Jan-21	1,83,26,41,072
January-21	SEIL/2020-21/06/DBN/TG-570/Mar'20 EB Bill	31-Dec-20	4,65,486
January-21	SEIL/2020-21/08/LT/TG570-DBN/Supplebill-Jun'20 EBL	31-Dec-20	6,29,514
January-21	SEIL/2020-21/095/LT/TG-570/JAN'2021	22-Jan-21	62,104
February-21	SEIL/2020-21/14/LT/TG570-DBN/Supplebill-Dec'20 EBL	5-Feb-21	1,84,50,17,365
February-21	SEIL/2020-21/101/LT/TG570	25-Feb-21	1,89,75,915
March-21	SEIL/2021-22/03/LT/TG-570MW	5-Mar-21	1,64,07,18,534
March-21	SEIL/2021-22/07/FUC/LT/TG-570/Eng Recon FY 2020-21	5-Apr-21	1,85,64,35,731
March-21	SEIL/2021-22/07/LT/Penalty/TG570/EngRecon FY 20-21	12-Apr-21	71,02,42,872
Total FY 2020-21			
April-21	SEIL/2021-22/011/LT/TG-570/APR'2021	9-Apr-21	(3,31,24,546)
May-21	SEIL/2021-22/023/LT/TG-570/MAY'2021		19,53,26,92,064
June-21	SEIL/2021-22/030/LT/TG-570	5-May-21	1,84,31,50,750
July-21	SEIL/2021-22/038/LT/TG-570	5-Jun-21	1,91,39,66,232
August-21	SEIL/2021-22/056/LT/TG-570/AUGUST'2021	5-Jul-21	1,64,64,65,944
September-21	SEIL/2021-22/065/LT/TG-570	5-Aug-21	1,90,34,07,127
October-21	SEIL/2021-22/12/LT/TG570-DBN/Suple Bill- Sep'2021	4-Sep-21	1,99,38,54,008
October-21	SEIL/2021-22/071/LT/TG570	5-Oct-21	1,74,13,43,424
November-21	SEIL/2021-22/077/LT/TG570	25-Oct-21	10,20,279
December-21	SEIL/2021-22/23/LT/TG-570/Inv Sup BILL for Inv 83	3-Nov-21	1,88,69,97,254
December-21	SEIL/2021-22/83/LT/TG-570	7-Dec-21	1,40,45,36,725
January-22	SEIL/2021-22/089/LT/TG-570/JAN'22	17-Jan-22	4,97,082
January-22	SEIL/2021-22/16/LT/TG570-DBN/Suppl.Bill-JAN'2022	6-Jan-22	1,63,92,26,870
February-22	SEIL/2021-22/103/LT/TG-570/FEBRUARY'2022	3-Feb-22	1,80,58,23,904
March-22	SEIL/2022-23/003/LT/TG-570/MARCH'2022	17-Feb-22	45,920
March-22	SEIL/2022-23/004/LT/FC/TG-570/FY21-22	7-Mar-22	1,65,24,87,853
April-22	SEIL/2022-23/010/LT/TG-570/APRIL'2022	5-Apr-22	1,74,85,30,511
Total FY 2021-22			
		5-Apr-22	10,95,11,712
		5-May-22	1,88,55,76,616
			23,17,64,42,211



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## M/s CSPDCL

Month	Invoice Date	Invoice amount Rs.
May-17	06-06-2017	1469529750
Jun-17	06-07-2017	1860852100
Jul-17	04-08-2017	1870703667
Aug-17	06-09-2017	1791854636
Sep-17	07-10-2017	1440960635
Oct-17	08-11-2017	1796123885
Nov-17	07-12-2017	1904718621
Dec-17	06-01-2018	2378290746
Jan-18	06-02-2018	2698240698
Feb-18	08-03-2018	2312203774
Mar-18	06-04-2018	2857504461
Apr-18	09-05-2018	2794222127
May-18	08-06-2018	2558217621
Jun-18	07-07-2018	2068059145
Jul-18	09-08-2018	2362814845
Aug-18	07-09-2018	1404699925
Sep-18	06-10-2018	1983225592
Oct-18	06-11-2018	1498897087
Nov-18	07-12-2018	2393439140
Dec-18	07-01-2019	2228442366
Jan-19	08-02-2019	1598284255
Feb-19	08-03-2019	1070534374
Mar-19	09-04-2019	1504754982
Apr-19	08-05-2019	431974813
May-19	07-06-2019	512996947
Jun-19	08-07-2019	947104648.8
Jul-19	07-08-2019	1338325125
Aug-19	07-09-2019	476433328
Sep-19	05-10-2019	340214673.3
Oct-19	08-11-2019	589495932.5
Nov-19	07-12-2019	965639242.1
Dec-19	06-01-2020	1324502517
Jan-20	06-02-2020	910252098
Feb-20	07-03-2020	1232860447
Mar-20	07-04-2020	1377276903
Apr-20	08-05-2020	1519328307
May-20	09-06-2020	1378478758
Jun-20	08-07-2020	1370178657
Jul-20	07-08-2020	1418771197
Aug-20	09-09-2020	1920506308
Sep-20	08-10-2020	1235470980
Oct-20	09-11-2020	1011919703
Nov-20	09-12-2020	1788113668
Dec-20	08-01-2021	1432523348
Jan-21	08-02-2021	472716294.5
Feb-21	06-03-2021	356213956
Mar-21	08-04-2021	874943217
Apr-21	10-05-2021	1371032077
May-21	09-06-2021	1557794015
Jun-21	08-07-2021	1341459112
Jul-21	07-08-2021	563489410
Aug-21	07-09-2021	689017480
Sep-21	07-10-2021	281585700
Oct-21	09-11-2021	307363240
Nov-21	07-12-2021	238083646.5
Dec-21	06-01-2022	181892560
Jan-22	08-02-2022	160250120
Feb-22	08-03-2022	148075539
Mar-22	07-04-2022	153534270
		<b>78066392665</b>

~~ANNEXURE~~ - B

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Annexure - C

Addl. Interest on pension bonds admitted by TSDISCOMs											
Particulars				2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23*	Total rs. In Crs
Addl int on PB	APGENCO			247.63	42.92	-44.24					246.31
Addl int on PB	TSGENCO			322.48	540.31				393.49		1256.28
	TSGENCO					684.34	1461.97	1160.11	1079.894	1045.842	5432.16

As agreed by both the AP and TSDISCOMs

Note:1 Addl interest on pension bonds of APGENCO are apportioned on installed capacity basis among Thermal/Hydel and Interstate hydel stations

Thermal portion IPB allocated to TSDISCOMs as per power sharing ratio i.e 53.89%

as the energy scheduled by APGENCO is more or equal to power sharing ratio for the years from 2014-15 to 2017-18

APGENCO Hydel energy scheduled to APDISCOMs only in the initial months of state bifurcation till the energy scheduled to Telangana. Hence the Addl int on Pension Bonds have been allocated in proportion to the energy scheduled to telangana out of the total hydel generation. similarly for IST hydel stations.

Note: 2 Bills are admitted as per the GTO and as per Retail supply Tariff Orders

Note: 3 For the FY Bills are admitted upto Jan 2023

C

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2016-17 Energy Scheduled					Amount of Addl Interest on Pension Bonds (Rs. In Crs.)			
	AP	TS	Total (KWH)	Installed Capacity	Stations	42.61	AP	TS
Thermal	6297822881	10299549666	16597372547	2810.00	Thermal	25.99	11.98	14.00
Hydel	1842631230		1842631230	1656.00	Hydel (100%)	15.32	15.32	0.00
Inter State Power	337886570	98825840	436712410	141.60	Inter State Power	1.31	1.01	0.30
	8478340681	29275091693	18876720795	4607.60		42.61	28.31	14.30

2017-18 Energy Scheduled					Amount of Addl Interest on Pension Bonds (Rs. In Crs.)			
	AP	TS	Total (KWH)	Installed Capacity	Stations	44.20	AP	TS
Thermal	13994750714	1806286876	15801037590	3410.00	Thermal	28.94	25.91	3.03
Hydel	2329373074		2329373074	1656.00	Hydel (100%)	14.05	14.05	0.00
Inter State Power	304668980	18174650	322843630	141.60	Inter State Power	1.20	1.19	0.01
	16628792768	20277715820	18453259502	5207.60		44.20	41.15	3.05
Grand Total for the years (F.Y.2014-15 to F.Y.2017-18)						162.12	117.88	44.24

## ANNEXURE - II

ANNEXURE - II

2016-17 Energy Scheduled					Amount of Addl Interest on Pension Bonds (Rs. In Crs.)			
AP	TS	Total (KWH)	Installed Capacity	Stations	737.85	AP	TS	
Thermal	6297822881	10299549666	2810.00	Thermal	449.98	207.49	242.50	
Hydel	1842631230	1842631230	1656.00	Hydel (100%)	265.19	265.19	0.00	
Inter State Power	337886570	98825840	141.60	Inter State Power	22.68	17.54	5.13	
	8478340681	29275091693	4607.60		737.85	490.22	247.63	
				Total 14-15 to 16-17		1302.46		
				Diff of: 14-15 to 16-17		379.22		
				Diff admitted by APPCC		351.53		
				Balance to be admitted:		27.69		
2017-18 Energy Scheduled					Amount of Addl Interest on Pension Bonds (Rs. In Crs.)			
AP	TS	Total (KWH)	Installed Capacity	Stations	622.51	AP	TS	
Thermal	13994750714	1806286876	3410.00	Thermal	407.63	364.90	42.73	
Hydel	2329373074	2329373074	1656.00	Hydel (100%)	197.96	197.96	0.00	
Inter State Power	304668980	18174650	141.60	Inter State Power	16.93	16.74	0.19	
	16628792768	20277715820	5207.60		622.51	579.59	42.92	
					2624.85	1882.05	742.79	
Grand Total for the years (F.Y.2014-15 to F.Y.2017-18)								



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2017-18 Energy Scheduled					In Crs.)			
	AP	TS	Total (KWH)	Installed Capacity	Stations	10.94	AP	TS
Thermal				3410.00	Thermal	7.17	7.17	0.00
Hydel				1656.00	Hydel (100%)	3.48	3.48	0.00
Inter State Power				141.60	Inter State Power	0.30	0.30	0.00
	0	0	5207.6	5207.60		10.94	10.94	0.00
Grand Total for the years (F.Y.2014-15 to June'18)						97.75	80.40	17.35
Consolidated					In Crs.)			
	AP	TS	Total (KWH)	Installed Capacity	Stations	173.07	AP	TS
Thermal				3410.00	Thermal	108.53	66.47	42.06
Hydel				1656.00	Hydel (100%)	59.39	58.43	0.96
Inter State Power				141.60	Inter State Power	5.15	3.93	1.22
	0	0	5207.6	5207.60		173.07	128.83	44.24

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ANNEXURE - II									
2018-19 Energy Scheduled					Amount of Addl Interest on Pension Bonds (Rs. In Crs.)				
	AP	TS	Total (KWH)	Installed Capacity	Stations	875.73	AP	TS	
Thermal	100%			3410.00	Thermal	573.44	573.44	0.00	
Hydel	100%			1656.00	Hydel (100%)	278.48	278.48	0.00	
Inter State Power	100%			141.60	Inter State Power	23.81	23.81	0.00	
	0	0	5207.6	5207.60		875.73	875.73	0.00	
Grand Total for the years (F.Y. 2014-15 to F.Y. 2018-19)						3500.58	2757.78	742.79	
Total Addl. amount to be received:						390.95			
					1	Less: Adjustment of Rs.173.07 Crs *			
					2	Net Receivable from APCC / TSPCC:			

\* Interest on pension bonds expenditure of Rs.173.07 Crs. to be passed on to the DISCOMs on account of transfer of Head Quarters Pensioners to TSC

**Additional Interest on Pension bonds (over & above schedule) and Transferred pensioners additional liability allocated in Capacity Ratio**

*[As agreed in Minutes of the meeting held between AP & TS Power Entities Dt.19.08.2019]*

Particulars	FY 2014-15 to 2017-18						Transferred Pensioners
	14-15	15-16	16-17	17-18 (2m)	17-18 (10m)	Total	
Additional Int. on Pens. Bond approved in GTO	469.84	552.96	569.73	121.13	503.03	2,216.68	172.35
Less: True-up bills issued to TSPCC	-	-	-	-	(27.88)	(27.88)	-
Add'l'n Pension liab. (A)	469.84	552.96	569.73	121.13	475.15	2,188.80	172.35
Less: Admitted by APPCC in capacity ratio	124.44	133.35	137.39	29.28	-	424.46	30.33
Less: Admitted by TSPCC in regular claims	-	535.73	322.48	-	540.31	1,398.52	114.36
Total Admitted by AP & TS (B)	124.44	669.08	459.87	29.28	540.31	1,822.98	144.69
Additional claim on TSPCC (C)=(A)-(B)	345.40	(116.12)	109.86	91.85	(65.17)	365.82	27.66
							393.48

**Balance Income Tax claim as per capacity ratio**

Particulars	FY 2014-15 to 2017-18					Total
	14-15	15-16	16-17	17-18		
Income tax:						
Advance Income Tax	20.00	-	27.09	33.10		80.19
Self Assessment Tax	4.32	17.24	6.09	-		27.66
Total of income tax (A)	24.32	17.24	33.18	33.10		107.84
Less: Admitted by APPCC in capacity ratio	5.26	3.14	7.78	1.81		17.99
Less: Admitted by TSPCC in regular claims	13.11	9.29	17.88	29.12		69.39
Total Admitted by AP & TS (B)	18.37	12.43	25.66	30.92		87.38
Balance claim on TSPCC (C)=(A)-(B)	5.96	4.81	7.52	2.18		20.46
						4.71
						2.81



Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

*Annexure-D*

SAP PGCL POC FROM April'16 TO March'17									
Allocation									
Sl.No.	MONTH	Gross Amount	SP	NP	TDS	SP	NP	Net Amount	
1	April'16	258256520	182199975	76056545	5165130	3643999	1521131	253091390	
2	May'16	327306191	230914518	96391673	6546124	4618290	1927834	320760067	
3	June'16	313569677	221223407	92346270	6271394	4424468	1846926	307298283	
	Bill-3	359913774	253919168	105994606	7198275	5078383	2119892	352715499	
4	July'16	371490059	262086237	109403822	7429801	5241725	2188076	364060258	
5	Aug'16	430925281	304017786	126907495	8618506	6080356	2538150	422306775	
	Bill-3	236517050	166862779	66654271	4730341	3337256	1393085	231786709	
6	Sep'16	443527387	312908572	130618815	8870548	6258171	2612376	434656839	
7	Oct'16	337360789	238008037	99352752	6747216	4760161	1987055	330613573	
8	Nov'16	332650603	234685000	97965603	6653012	4693700	1959312	325997591	
	Bill-3	232401289	163959109	68442180	4648026	3279182	1368844	227753263	
10	Dec'16	375037913	264589248	110448665	7500758	5291785	2208973	367537155	
11	Jan'17	427181519	301376562	125804957	8543630	6027531	2516099	418637889	
13	Feb'17	396325440	279607598	116717842	7926509	5592152	2334357	388398931	
	Bill-3	121455232	85686666	35768566	2429105	1713733	715371	119026127	
14	March'17	378276423	266874016	111402407	7565528	5337480	2228048	370710895	
15	May'15 to June'16	1285008224	906573302	376434922	25700164	18131466	7568698	1259308060	
		6627203371	4675491978	1951711393	132544067.2	93509839	39034228	6494659304	

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

SAP PGCL POC FROM April'17 TO March'18									
Allocation									
Sl. No.	MONTH	Gross Amount	SP	NP	TDS	SP	NP	NET AMOUNT	
1	April'17	321716552	226971027	94745525	6434331	4539421	1894910	315282221	
2	May'17	595341028	420013095	175327933	11906821	8400262	3506559	583434207	
3	June'17	561956880	396460579	165496301	11239138	7929212	3309926	550717742	
	Bill-3(Jan'17 to Mar'17)	30854566	21767896	9086670	617091	435358	181733	30237475	
4	July'17	587309534	414346876	172962658	11746191	8286938	3459253	575563343	
5	Aug'17	480487366	338983837	141503529	115256655	8131350	3394305	468961711	
	Bill-3(Apr'17 to Jun'17)	136204095	96091989	40112106	2724082	1921840	802242	133480013	
6	Sep'17	599478662	422932196	176546466	11989573	8458644	3530929	587489089	
7	Oct'17	568106297	400798993	167307304	9407118	6636722	2770396	556744171	
8	Nov'17	530475776	374250660	156225116	10609516	7485013	3124502	519866260	
	Bill-3(Jul'17 to Sep'17)	226721631	159952111	66769520	4534433	3199042	1335390	222187198	
10	Dec'17	582736723	411120758	171615965	11654734	8222415	3432319	571081989	
	Bill-4(Jul'16 to Nov'17)	35880841	25313933	10566908	717617	506279	211338	35163224	
11	Jan'18	659590245	465340918	194249327	13191805	9306818	3884987	646398440	
13	Feb'18	964247044	680276290	283970754	19284941	13605526	5679415	944962103	
	Bill-3(Oct'17 to Dec'17)	144151405	101698816	42452589	2883028	2033976	849052	141268377	
14	March'18	921625695	650206928	271418767	18432514	13004139	5428375	903193181	
		7946884340	5606526902	2340357438	158898586.5	112102953	46795634	7786030746	



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SAP PGCL POC FROM April'18 TO March'19									
Allocation									
Sl.No.	MONTH	Gross Amount	SP	NP	TDS	SP	NP	NET AMOUNT	
1	April'18	926521002	653660567	272860435	18530420	13073211	5457209	907990582	
2	May'18	508409079	358682605	149726474	10168182	7173652	2994529	498240898	
3	June'18	686247776	484147806	202099970	13724956	9682956	4042000	672522820	
	Bill-3(Jan'18 to Mar'18)	390299957	275356620	114943337	7805999	5507132	2298867	382493958	
4	July'18	729559341	514704115	214855226	14591187	10294082	4297105	714968154	
5	Aug'18	890032202	627917719	262114483	17800644	12558354	5242290	872231558	
	Bill-3(Apr'18 to Jun'18)	432611702	305207556	127404146	8652234	6104151	2548083	423959468	
6	Sep'18	857096942	604681893	252415049	17141939	12093638	5048301	839955003	
7	Oct'18	904877099	638390793	266486306	18097542	12767816	5329726	886779557	
8	Nov'18	904484763	638114000	266370763	18089695	12762280	5327415	886395067	
	Bill-3(Jul'18 to Sep'18)	484913484	342106463	142807021	9698270	6842129	2856141	475215214	
10	Dec'18	1015314718	716304534	299010184	20306294	14326090	5980204	995008424	
11	Jan'19	1093419644	771407559	322012085	21868393	15428151	6440242	1071551251	
13	Feb'19	1074489799	758052553	316437246	21489796	15161051	6328745	1053000003	
14	March'19	1216262438	858073150	358189288	24352249	17161463	7163786	1191937189	
15	Bill-3(Oct-Dec'18)	372761327	262983116	109778211	7455227	5259663	2195564	365306100	
16	Bill-4(Oct'18 to Mar'19)	23953913	16899486	7054427	479078	337990	141088	23474835	
17	Bill-3(Jan-Mar'19)	252228336	177947091	74281245	5044567	3558942	1485625	247183769	
18	Bill-4(Dec'17 to Sep'18)	19799876	13968813	5831063	395998	279377	116621	19403878	
		12783283398	9018606437	3764676961	255665668	180372129.7	75293540.21	12527617730	

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SAP PGCIL POC FROM April'19 TO March'20									
Allocation									
Sl.No.	MONTH	Gross Amount	SP	NP	TDS	SP	NP	NET AMOUNT	
1	April'19	1017787862	718049337	299738525	20355757	14360987	5994770	997432104	
2	May'19	964091541	680166582	283924959	19281831	13603332	5678499	944809710	
3	June'19	961823282	678566325	283256957	19236466	13571327	5665139	942586816	
4	July'19	1147712187	809710948	338001239	22954244	16194219	6760025	1124757943	
5	August'19	1163089594	820559709	342529885	23261792	16411194	6850598	1139827802	
6	Bill-4(Apr-Jul'19)	10531880	7430241	3101639	210638	148605	62033	10321242	
7	September'19	1025338950	723376629	301962321	20506779	14467533	6039246	1004832171	
8	October'19	1073780630	757552234	316228396	21475613	15151045	6324568	1052305017	
9	Bill-3(Apr-Jun'19)	397364413	280340593	117023820	7947288	5606812	2340476	389417125	
10	November'19	1356915725	957304044	399611681	27138314	19146081	7992233	1329777411	
11	December'19	1353327110	954772276	398554834	27066542	19095445	7971097	1326260568	
12	Bill-3(Jul-Sep'19)	1320593272	931678553	388914719	26411865	18633571	7778294	1294181407	
13	January'20	1267300102	894080222	373219880	25346002	17881604	7464398	1241954100	
14	Bill-4(Aug-Dec'19)	26390384	18618416	7771968	527808	372368	155439	25862576	
15	February'20	1250833669	882463153	368370516	25016673	17649263	7367410	1225816996	
16	Bill-3(Oct-Dec'19)	575792382	406221526	169570856	11515848	8124431	3391417	564276534	
17	March'20	1256312803	886328683	369984120	25126256	17726574	7399682	1231186547	
		16168985786	11407219472	4761766314	323379715	228144389	95235325	15845606069	



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MHS 2020-21															
															DIF
POC III.	April'20	May '20	June '20	July '20	August'20	September'20	October'20	November'20	December'20	January '21	February '21	March '21	G-TOTAL	AS PER SAP	
POC	1310009	782753800	786361471	954327376	1385550223	1093567756	1049892083	11581351952	1267588426	0	1192572307	1210650037	1316688294	12176105725	
Non POC		597337	597337	597337	27023387	888529	597337	597337	597337	136894985	597337	7546591	597337	177132188	✓
POC - Bill-3		391740557	0	0	1985390689	0	0	216927309	0	0	0	0	597337	807197755	
TOTAL	1175093694	786958808	934924713	1609103299	1094256285	1050489420	1375876798	1268185763	136894985	1193169644	1218196628	1317285631	13160435668	13160035667	1.00

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

## M/s.PGCIL NON POC BILL from 4/2021 to 3/2022

Sl.No.	Month	Gross Amount	Surcharge	Total amt admitted	Rebate @1.5%	TDS @ 2%	Net Amount
1	Apr-21	597337		597337	8960	11947	576430
2	May-21	597337	3707595	4304932	8960	86099	4209873
3	Jun-21	597337	0	597337	8960	11947	576430
4	Jul-21	597337		597337	8960	11947	576430
5	Aug-21	597337		597337	8960	11947	576430
6	Sep-21	597337		597337	8960	11947	576430
7	Oct-21	597337		597337	8960	11947	576430
8	Nov-21	597337		597337	8960	11947	576430
9	Dec-21	597337		597337	8960	11947	576430
10	Jan-22	597337		597337	8960	11947	576430
11	Feb-22	597337		597337	8960	11947	576430
12	Mar-22	597337		597337	8960	11947	576430
13	differed Tax FY 2020-21	26245717		26245717	0	524914	25720803
	<b>TOTAL</b>	<b>55227375</b>	<b>3707595</b>	<b>58934970</b>	<b>434725</b>	<b>1178699.4</b>	<b>57321545.73</b>

Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

M/s.PGCIL NON POC BIL. from 4/2022 to 3/2023					
Sl.No.	Month	Gross Amount	Rebate @1.5%	TDS @ 2%	Net Amount
1	Apr-22	597337	8960	11947	576430
2	May-22	597337	8960	11947	576430
3	Jun-22	597337	8960	11947	576430
4	Jul-22	597337	8960	11947	576430
5	Aug-22	597337	8960	11947	576430
	FERV ULDC Charges Oct'2020 to March'2022	14629771	0	292595	14337176
6	Sep-22	597337	8960	11947	576430
7	Oct-22	597337	8960	11947	576430
8	Nov-22	597337	8960	11947	576430
9	Dec-22	597337	8960	11947	576430
10	Jan-23				
11	Feb-23				
12	Mar-23				
TOTAL					

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 199/GT/2017**

**Coram:**

**Shri P.K.Pujari, Chairperson**

**Dr. M.K. Iyer, Member**

**Shri I.S.Jha, Member**

**Date of Order: 8<sup>th</sup> January, 2020**

**In the matter of**

Petition for determination of tariff of Kudgi Super Thermal Power Station, Stage-I  
(2400 MW) for the period from COD of Unit-I to 31.3.2019

**And**

**In the matter of**

NTPC Ltd

NTPC Bhawan, Core-7, SCOPE Complex,

7, Institutional Area, Lodhi Road,

New Delhi-110003

**.....Petitioner**

**Vs**

1. Andhra Pradesh Eastern Power Distribution Company Ltd  
Corporate Office P&T Colony, Seethammadhara,  
Visakhapatnam-530013
2. Andhra Pradesh Southern Power Distribution Company Ltd,  
Corporate Office, Back side Srinivasa Kalyana Mandapam  
Tiruchhanur Road, Kesavayana Gunta,  
Tirupati-517503
3. Telangana State Northern Power Distribution Company Ltd  
H.No 2-5-31/2, Vidyut Bhawan  
Nakkalagutta, Hanamkonda,  
Warangal-506001
4. Telangana State Southern Power Distribution Company Ltd  
Mint Compound, Corporate Office, Hyderabad-500063
5. Tamil Nadu Generation & Distribution Corporation Ltd.  
144, Anna Salai, Chennai- 600002
6. Bangalore Electricity Supply Company Ltd.  
K.R.Circle, Bengaluru- 560001
7. Mangalore Electricity Supply Company Limited  
Corporate Office, MESCOM Bhavan, First floor,  
Kavoor Cross Road, Bijai,  
Mangalore- 575004





8. Chamundeshwari Electricity Supply Company Limited  
Corporate Office No. 29, Vijayanagara 2<sup>nd</sup> Stage, Hinkal,  
Mysore- 570017

9. Gulbarga Electricity Supply Company Limited  
Station Main Road, Gulbarga- 585102

10. Hubli Electricity Supply Company Limited  
Corporate Office, Navanagar, PB Road,  
Hubli- 580025

11. Kerala State Electricity Board Ltd  
Vaidyuthi Bhavanam, Pattom  
Thiruvananthapuram- 695004

.....Respondents

#### **Parties present**

Shri Rohit Chhabra, NTPC  
Shri Patanjali Dixit, NTPC  
Shri Vineet Kant Rajora, NTPC  
Shri S.Vallinayagam, Advocate, TANGEDCO  
Shri Arunav Patnaik, Advocate, Karnataka discoms  
Shri Shikhar Saha, Advocate, Karnataka discoms

#### **ORDER**

The Petitioner, NTPC has filed this petition for approval of tariff of Kudgi Super Thermal Power Station (3 x 800 MW) ("the generating station/ Project") based on the anticipated COD of Unit-I (25.7.2017) to 31.3.2019, in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations"). Pursuant to the actual COD of Unit-I on 31.7.2017, Unit-II on 31.12.2017 and Unit-III on 15.9.2018, the Petitioner vide affidavit dated 4.3.2019 has amended the petition and has prayed for approval of tariff of the generating station from the actual COD of the said units till 31.3.2019.

2. The generating station, located in the Bijapur district of the State of Karnataka, comprises of three units of 800 MW each. The Ministry of Power, GOI



vide its letter dated 6.10.2015 had allocated the power from the generating station to the Respondent beneficiaries as detailed below:

States	Total allocation in (MW) (rounded off)	Share in installed capacity (%)
Karnataka (including home State share)	1200.00	50.00
Tamilnadu	300.00	12.50
Kerala	105.00	4.38
Telangana	234.00	9.75
Andhra Pradesh	201.00	8.38
Unallocated	360.00	15.00
<b>Total</b>	<b>2400.00</b>	<b>100.00</b>

3. The Investment Approval (IA) of the project was accorded by the Board of the Petitioner Company in its 376<sup>th</sup> meeting held on 28.12.2011 and the same was subject to Environmental Clearance (EC) of MOE&F, GOI. The approval was granted at an estimated cost of ₹15166.19 crore, including Interest During Construction & Financing Cost of ₹ 2487.67 crore and Working Capital Margin of ₹445.77 crore as of the 4<sup>th</sup> quarter 2011 price level and corresponding indicative estimated completed cost of ₹16934.65 crore, including IDC & FC of ₹2654.84 crore and WCM of ₹460.06 crore. Accordingly, the capital cost and annual fixed charges claimed by the Petitioner as per Form 1(i) and Form 1 of the amended petition for the period from actual COD of Unit-I (2017-18) to 2018-19 is as under:

(a) Capital cost

	(₹ in lakh)			
	2017-18 31.7.2017 (COD of Unit-I) to 30.12.2017	2017-18 31.12.2017 (COD of Unit-II) to 31.3.2018	2018-19 1.4.2018 to 14.9.2018	2018-19 15.9.2018 (COD of Unit-III) to 31.3.2019
Capital Cost as on COD	602597.84	970642.36	1086947.95	1362547.31
Railway augmentation deposit works	94600.00	94600.00	-	94600.00
ERV charged to revenue	(-) 1753.00	(-) 1984.00	-	15025.00
Inter-Unit transfer out before COD	2157.00	2157.00	-	2157.00
Notional IDC	1251.00	1251.00	-	1322.00



Unamortised Finance Charges	616.00	1536.00	-	1633.00
Opening Capital Cost	699468.84	1068202.36	1086947.95	1477284.31
Add: Additions during the year / period & Liability discharged	36657.69	18745.59	45073.60	45225.00
<b>Closing Capital Cost</b>	<b>736126.53</b>	<b>1086947.95</b>	<b>1132021.54</b>	<b>1522509.31</b>
Average Capital Cost	717797.69	1077575.15	1109484.75	1499896.81

**(b) Annual Fixed Charges**

(₹ in lakh)

	2017-18	2017-18	2018-19	2018-19
	31.7.2017 (COD of Unit-I) to 30.12.2017	31.12.2017 (COD of Unit-II) to 31.3.2018	01.04.2018 to 14.09.2018	15.09.2018 (COD of Unit-III) to 31.03.2019
Depreciation	35271.22	53933.71	55509.74	75792.79
Interest on Loan	31642.14	47151.66	47581.99	63005.56
Return on Equity	42433.60	63702.34	65761.95	88902.66
Interest on Working Capital	11347.93	21886.70	22067.52	33698.00
O&M Expenses	14843.29	28683.29	30299.43	45003.43
<b>Total</b>	<b>135538.18</b>	<b>215357.71</b>	<b>221220.63</b>	<b>306402.44</b>

**Commissioning schedule**

4. As stated, the IA of the project was accorded by the Board of the Petitioner Company in its 376<sup>th</sup> meeting on 28.12.2011 with indicative estimated completed cost of ₹16934.65 crore, which included the IDC & FC of ₹2654.84 crore and WCM of ₹460.06 crore, which was subject to Environmental Clearance (EC). The EC was granted by MOE&F, GOI on 25.1.2012. The Petitioner in Form-5D has submitted that the Steam Turbine and Generator Package was awarded on 17.2.2012. Considering the date of EC, the Petitioner has considered 25.1.2012 as the 'Zero Date'. The Petitioner has considered Scheduled Commercial Operation Date (SCOD) of Unit-I as 31.5.2016, of Unit-II as 30.11.2016 and of Unit-III as 30.5.2017. However, considering the timeline of 52 months for Unit-I and subsequent units at an interval of 6 months in terms of the 2014 Tariff Regulations for Greenfield projects, the SCOD of the units of the project is worked out as 25.5.2016 for Unit-I, 25.11.2016 for Unit-II and 25.5.2017 for Unit-III. These dates have been considered for the purpose of analysis of time overrun of the project.



5. The actual COD of Unit-I is 31.7.2017, of Unit-II is 31.12.2017 and of Unit-III is 15.9.2018, thereby resulting in the delay of 14.2 months for Unit-I, 13.2 months for Unit-II and 15.7 for Unit-III from SCOD as under:

	SCOD	Actual COD	Time overrun
Unit-I	25.5.2016	31.7.2017	14.2 months
Unit-II	25.11.2016	31.12.2017	13.2 months
Unit-III	25.5.2017	15.9.2018	15.7 months

#### Admissibility of additional ROE

6. The timeline for completion of Project as specified under the 2014 Tariff Regulations for green field projects (Coal/lignite) with a unit size of 660 MW/800 MW from the date of IA is 52 months for the first unit, with SCOD of subsequent units at an interval of 6 months each. The zero date of the project is 25.1.2012. The SCOD of Unit-I is 25.5.2016, Unit-II is 25.11.2016 and Unit-III is 25.5.2017 and the actual COD of Unit-I is 31.7.2017, Unit-II is 31.12.2017 and Unit-III is 15.9.2018. Since the actual time taken for declaration of commercial operation of Unit-I is 67 months, 72 months for Unit-II and 81 months for Unit-III (that is more than 52 months for all the units), the Petitioner is not entitled for additional RoE of 0.5% considered towards timely completion of the project.

#### Time Overrun

7. The Petitioner vide its affidavit dated 4.3.2019 has submitted that the COD of the Units got delayed on account of the following reasons, which were beyond its control:

- (a) Right of Use (RoU) for Make-up Water Pipelines
- (b) Ban imposed on the river bed sand mining by NGT order dated 5.8.2013 (Change of law)
- (c) Law and Order Issues (Bandhs/agitations/riots etc)
- (d) Drought
- (e) Villagers' resistance - Power Input arrangement for running design make up water pump





- (f) Villagers' resistance - Northern side Railway siding and water reservoir for Lagoon-2

8. The Petitioner vide its affidavit dated 10.6.2019 has furnished unit-wise reasons for time overrun along with the delay analysis, indicating the activities delayed, the reasons for the said delay and the corresponding delay on account of the delay in each of the activities, corresponding to the units. The Respondents TANGEDCO, BESCOM, KSEB and CESC have filed their replies in the matter. The Petitioner has filed its rejoinder to the said replies.

#### **Analysis and decision**

9. For prudence check of time over run and cost overrun of a project, the Appellate Tribunal for Electricity (the Tribunal) in its judgment dated 27.4.2011 in Appeal No. 72 of 2010 (MSPGCL V MERC & ors) had laid down the following principles:

*"7.4.The delay in execution of a generating project could occur due to following reasons:*

*(i) Due to factors entirely attributable to the generating company, e.g., imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.*

*(ii) Due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.*

*(iii) Situation not covered by (i) & (ii) above.*

*In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/supplied of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would*



*also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices.*

*7.5 In our opinion, the above principle will be in consonance with the provisions of Section 61(d) of the Act, safeguarding the consumers ' interest and at the same time, ensuring recovery of cost of electricity in a reasonable manner."*

10. The Commission vide ROP of the hearing dated 14.5.2019 had directed the Petitioner to furnish details of schedule start and schedule completion along with actual start and actual completion date of each activity. The Commission also directed the Petitioner to furnish any other relevant information towards the justification that the time overrun, if any, was not attributable to the Petitioner. The Petitioner in reply dated 10.6.2019 has submitted the scheduled and actual dates with respect to each milestone activity.

11. It is observed that there is a time overrun of 432 days in the COD of Unit-I, 401 days in the COD of Unit-II and 478 days in the COD of Unit-III of the generating station. The Petitioner has accounted the time overrun to the following reasons:

S.No	Reasons	Time Period
1	a. Right of Use clearance for Make-up Water Pipeline	(13 <sup>th</sup> December, 2012 - 29 <sup>th</sup> January, 2015)
	b. Start of Make-up Water System Package	(Schedule - January, 2014 & Actual - March, 2015)
2	Change of Law (ban on Mining etc imposed by Govt.)	(5 <sup>th</sup> August, 2013 - 16 <sup>th</sup> December, 2013)
3	NGT order dated 13.3.2014 for suspension of project works	(13 <sup>th</sup> March, 2014 - 14 <sup>th</sup> April, 2014)
4	Law & Order issues -(Bandhs/ Agitations/Riots etc.,)	(5 <sup>th</sup> July, 2014 - 1 <sup>st</sup> April, 2015)
5	Drought	(March, 2016 -July, 2016)
6	Villagers Resistance - Power Input arrangement For running Design Make-up Water Pump	(August, 2017 - December, 2017)
7	Villagers Resistance - Northern side Railway Siding and Water Reservoir for Lagoon-2	(February, 2018 - September, 2018)



12. Based on the submissions of the parties and the documents available on record, we proceed to examine, on prudence check, the reasons for time overrun of the Project as stated in the subsequent paragraphs.

**Delay due to Right of Use clearance for Makeup Water Pipeline (13<sup>th</sup> December, 2012 - 29<sup>th</sup> January, 2015) and Start of Makeup Water System Package (Schedule - January, 2014 and Actual - March, 2015) in respect of Units-I to III.**

13. The Petitioner has prayed for condonation of delay on the ground that the same was uncontrollable and has submitted the following:-

(i) The request for Right of Use (ROU) corridor for laying Make-up Water lines from Make-up Water Pump House at Almatti back waters to plant reservoir was made by Petitioner to District Administration on 13<sup>th</sup> December, 2012. The issue was discussed in the meeting held on 1.2.2014 in presence of the local MLA for crop compensation. The issue was also discussed on 24.9.2014 in the PMO review of Central Power Projects under the Ministry of Power, GOI.

(ii) For the ROU of Water Pipeline, a 40 metre corridor was required. On request of NTPC for intervention of District Administration, meetings were held with the farmers/owners of land in the presence of the MLA to arrive at a fair and reasonable level of compensation. At the final meeting held by Deputy Commissioner, Vijayapura on 13<sup>th</sup> November, 2014, the farmers demanded ten years of Crop compensation based on the sugarcane yield for Right of Way (RoW) and RoU.

(iii) Order for ROW for 66 kV lines and ROU for Make-up Water lines was issued by Deputy Commissioner, Vijayapura on 29.1.2015 in exercise of his powers under the Electricity Act, 2003 and the Indian Telegraph Act, 1885, for ₹5,80,000/- per acre, which is equivalent to 8 years net yield of sugarcane crop, as one time flat compensation fixed for both RoW and RoU area. The payment disbursement was in two stages, i.e. 65% before start of work and 35% after four months.

(iv) After payment of compensation in line with the Deputy Commissioner's order, the laying of Water pipeline was completed and water was charged to plant reservoir on 4<sup>th</sup> March, 2016.

(v) Delay by the District Administration in giving permission for RoU of Water pipeline, falls under uncontrollable factors. Therefore, the time period of around 25.5 months taken by the Administration for giving clearance had



resulted in the delay in start of erection work for execution of Make-up Water System Package.

(vi) The scheduled start date of the above erection work was from January, 2014 whereas, the same had actually started during March, 2015.

14. Respondent No.5 TANGEDCO vide its reply affidavit dated 28.3.2019 has submitted that the Investment Approval for the Project was accorded and the zero date was fixed as 25.1.2012, whereas, the request for Use of Makeup Water Pipelines was made by the Petitioner only during December, 2012 i.e. after a lapse of 10 months from the zero date. It has, therefore, submitted that the claim of the Petitioner to consider the delay as uncontrollable factor and to condone the delay is not justifiable and, therefore, the same may be rejected.

15. Respondent No.6 BESCO vide its reply affidavit dated 24.4.2019 has submitted that the application should have been made by the Petitioner shortly after the date of Investment Approval, but the Petitioner had applied to the District Administration only on 13<sup>th</sup> December 2012 i.e. almost 11 months after the date of grant of Environment Clearance. The Respondent has submitted that the Petitioner has furnished no reasons for the delay in applying for the Makeup Water pipelines. The Respondent has further submitted that the delay in making the application and the failure to take any proactive steps are clearly attributable to the Petitioner.

16. Respondent No.11 KSEB vide its reply affidavit dated 22.5.2019 has submitted that a considerable delay of 3 years has occurred in getting the RoU clearance for Makeup Water Pipeline and the start of Makeup Water System Package and the same is fully attributable to the Petitioner. Hence, the Respondent has prayed that the time overrun and cost overrun due to delay on this count may not be allowed.





The Respondent while pointing out that the Petitioner had not made proper follow-up in getting the RoU has submitted that the Petitioner had applied to the District Administration almost 11 months after the grant of Environment Clearance and a time period of 2 years from December, 2012 to 2014 was lost due to lack of follow up, after seeking request from the District Administration. The Respondent has submitted that since no proper justification has been furnished by the Petitioner for the long delay in getting the RoU, the claim of the Petitioner to consider the delay as an uncontrollable factor may be rejected.

17. The Petitioner in its rejoinder affidavit dated 1.5.2019 has mainly submitted that the contentions made by the respondent may be rejected since detailed reasons along with documents have been furnished in the Petition. The Petitioner has reiterated that the delay in the project were for reasons beyond the reasonable control of the Petitioner.

18. The submissions have been considered. As stated, the request for ROU corridor for laying make up water lines from Makeup water pump house at Almatti back waters to plant reservoir was made by the Petitioner to the District administration on 13.12.2012. Pursuant to this, the issue of crop compensation was discussed in the meeting dated 1.2.2014 with the local MLA and subsequently was discussed in the PMO review held on 24.9.2014 and thereafter, negotiations were carried out to arrive at a fair and reasonable level of compensation. It is noticed that on 29.1.2015, an amount of ₹5,80,000/- per acre, which was equivalent to 8 years net yield of sugarcane crop as one time flat compensation was fixed for both RoW and RoU area. It is further observed that the final meeting was held on 13.9.2014 in presence of the DC, Vijayapura and order for ROW for 66 KV lines & ROU for Makeup water lines was issued by the DC on 29.1.2015. This has led to the



delay in getting the “Right of Use” clearance for makeup water pipeline from 13.12.2012 to 29.1.2015. On perusal of the documents furnished by the Petitioner, it is observed that the scheduled start date for erection work of Makeup Water Pipeline was January, 2014 and therefore, the claim of the Petitioner for delay from 13.12.2012 is not justifiable. The work of Makeup Water Pipeline was actually started during March, 2015. Accordingly, there is an actual delay of 14 months (January, 2014 to March, 2015) in the schedule start of the makeup water pipeline erection work. It is further observed that the Petitioner had applied for ROU to the District Administration on 13.12.2012 i.e. after a gap of around 10 months from the date of the IA and the meeting on this issue was held only on 1.2.2014 leading to a further delay of 13 months. The Petitioner has not placed on record any material to show that it was pursuing the matter diligently with the local authorities during the intervening period for obtaining the clearances for start of work. It is noticed that the issues were resolved only on 29.1.2015, almost a year from the meeting which was held on 1.2.2014. In our view, there was delay in applying to the district authorities as well as lack of follow-up action on part of the Petitioner. In view of the above discussions, we are of the considered view that the delay in the laying of Makeup Water Line due to ROU issue was for reasons which were not beyond the control of the Petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation 7.4 (i))], the delay on this count cannot be condoned. However, the Liquidated Damages (LD) recovered from the contractor and Insurance proceeds if any, received by the generating company, on account of the said delay, could be retained by the generating company.



**Ban imposed by National Green Tribunal (NGT) for sand mining on the river bed causing delay for the period from 5.8.2013 to 16.12.2013 and NGT order dated 13.3.2014 for suspension of project work-causing delay for the period from 13.3.2014 to 14.4.2014**

19. As regards the ban imposed by NGT for sand mining on the river bed, the Petitioner has submitted the following:-

(i) The river bed sand mining for the Project was envisaged from Bheema River in Bijapur District and the tributaries of Krishna River in Bagalkot District. The river bed sand mining was stopped due to the ban imposed by order of NGT dated 5.8.2013 in Application No. 171/2013. The Petitioner has submitted that it made various correspondences with the State and local administration for grant of permission for sand mining for the project construction, but the Petitioner did not get permission for the same.

(ii) The packages which were affected include Site levelling, SG civil works & TG civil works. EC for the Project was accorded by MoE&F, GOI on 25.1.2012 and thereafter the construction activities had started. Subsequent to the NGT order dated 5.8.2013, fresh policy guidelines were issued by the Govt. of Karnataka on 16.12.2013 with regard to Sand mining.

(iii) An appeal (12/2012) was filed by Mr. M.P. Patil before the NGT challenging the EC accorded to the Project on 25.1.2012 by the MOE&F GOI. NGT by order dated 13.3.2014 had ordered the suspension of Project work.

(iv) NGT further directed MoE&F to refer the matter to the Expert Appraisal Committee (EAC) for re-scrutiny, with the entire process to be completed by EAC within six months from the date of order. During this period or until further order was passed by the MoE&F, whichever was earlier, the Project was directed to maintain status quo.

(v) The erection activities at the project stopped immediately after the NGT order. In view of uncertainty in starting the work, the contractor also started to demobilise the manpower.

(vi) Petitioner filed an appeal (C.A. No. 3870/2014) before the Hon'ble Supreme Court and the Court on 1.4.2014 stayed the operation of order of NGT. Accordingly, the work was restarted and the mobilisation of manpower took two weeks' time for execution of the Project works.

20. Respondent No.5 TANGEDCO has submitted that it is the responsibility of the Petitioner to seek necessary approvals/permissions from the concerned authorities



prior to the commencement of any work associated with the Project. It has submitted that the Petitioner had not approached the authorities concerned seeking approvals for sand mining prior to the ban imposed vide NGT order dated 5.8.2013. The Respondent has stated that on account of the fault on the part of the Petitioner to take timely action, the delay due to ban in terms of NGT order would not fall within the provisions of 'Change in Law'. Hence, the Respondent has prayed that the claim of the Petitioner on this ground is not justifiable and is liable to be rejected.

21. Respondent No.6 BESCO and the Respondent No.11 KSEB have submitted that the claim of the Petitioner may be rejected as the NGT had only prohibited the illegal mining of sand and the Petitioner being a responsible Government Company should have ensured that its requirements for sand was met in a manner duly complying with all the applicable laws right from the beginning. The Petitioner in its rejoinder to the replies of the Respondents, TANGEDCO and BESCO have submitted that the contentions made by the Respondents may be rejected as the reasons for delay in the project were beyond reasonable control of the Petitioner.

22. The matter has been examined. As stated, the IA of the Project was accorded on 28.12.2011, subject to EC accorded by MOE&F, GOI. The MOE&F on 25.1.2012 has granted EC for 2440 acres (987.43 hectares) of land for the Project which was valid for a period of 5 years. The construction activities started after grant of EC by MOE&F. It is noticed that in Application No. 171/2013 (NGT Bar Association v MOE&F & ors), the NGT vide order dated 5.8.2013 had held as under:

*"In the meantime, we restrain any person, company, authority to carry out any mining activity or removal of sand from river beds anywhere in the country without obtaining Environment Clearance from MoEF/ SEIAA and license from the competent authorities"*





23. It is observed that pursuant to the above order, the work of transportation of sand to the Project of the Petitioner was stopped. The Petitioner vide its Letters dated 3.9.2013 and 1.10.2013 to the Deputy Commissioner Bagalkot,; Letter dated 11.9.2013 to the Secretary, Mines, Sugar, Textiles & SSI, Govt., of Karnataka,; Letter dated 9.10.2013 to Deputy Commissioner Hospet,; Letter dated 28.10.2013 to Deputy Commissioner Bijapur,; Letter dated 30.10.2013 to the Secretary, Govt. of Karnataka,; Letter dated 8.11.2013 to the Deputy Commissioner, Koppal; and Letter dated 9.11.2013 to the Principal Secretary (Forests, Ecology & Environment), Govt. of Karnataka had requested to accord permission for sand mining. In response to the letter dated 30.10.2013 by the Petitioner, the Government of Karnataka, vide its letter dated 16.12.2013 addressed to the Petitioner, conveyed that allotment of sand mining/quarry blocks for the exclusive use of the Petitioner does not fall within the purview of the Department of Forest, Ecology and Environment and also stated that the Department of Mines and Geology, PWD and the Deputy Commissioner of the concerned districts may be approached in this regard. The Government of Karnataka had further informed that as per EIA Notification, 2006, prior EC is required from SEIAA, Karnataka for mining/quarrying of river sand in an area less than 50 Ha, and EC from the MOE&F, GOI is required for an area of 50 Ha and above. The Petitioner has attributed the delay from 5.8.2013 to 16.12.2013 to the ban on mining imposed by the NGT/GoK. As the site levelling work, SG civil works & TG civil works were affected. The contention of the Respondents that the Petitioner did not have clearance for quarrying the river sand as per EIA Notification, 2006 is incorrect as the Petitioner does not undertake the quarrying of sand from the river-bed. The Petitioner procures sand from mining agencies, dealers and local market. It is these mining agencies who are required to obtain clearances for land mining. The ban on mining



has, therefore, resulted in shortage of sand which in turn has affected the civil works of the Project. It is observed that consequent upon the NGT order, the Petitioner had vide its letters made several correspondences to the local authorities and the GoK, thereby taking active steps for restoration of the supply of sand as the civil works of the project were getting affected/delayed. In our view, the Petitioner has taken all reasonable measures to mitigate the delay and for restoration of the sand supply. Accordingly, we hold that the delay is not attributable to the Petitioner and accordingly, the delay on this count is condoned. Further, the Petitioner has prayed for condonation of delay for the period from 13.3.2014 to 14.4.2014 on account of delay due to NGT order as regards EC granted to the Petitioner. As stated, the EC granted by MOE&F on 25.1.2012 for the Project was challenged before the NGT in Appeal No.12/2012 and the NGT vide its order dated 13.3.2014 had remanded the matter to MoE&F, GOI with direction to MOE&F to refer the matter to Expert Appraisal Committee for re-examination. Till then, the EC dated 25.1.2012 was directed to be kept in abeyance. As a result of this, the erection activities at the Project were stopped and manpower was demobilised. Only after the Hon'ble Supreme Court stayed the order of the NGT dated 13.3.2014 that the work could begin. The Petitioner has submitted that it took about two weeks for the Petitioner to mobilise the manpower, which was demobilised after the NGT order, and start the works from 14.4.2014. In view of this, we hold that delay on account of NGT order and the consequent demobilisation of manpower from the Project till the re-mobilisation which had caused a complete standstill in the works of the Project is beyond the control of the Petitioner. Accordingly, in terms of the principles laid down by the Tribunal in its judgment dated 27.4.2011 [(situation (ii) above)], the delay of 133 days from 5.8.2013 to 16.12.2013 due to ban on mining and the delay of 32 days from



13.3.2014 to 14.4.2014 due to NGT order for suspension of work, cannot be attributable to the Petitioner. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

#### **Law and Order (Bandhs/Agitations/Riots etc)**

24. As regards Law and Order, the Petitioner has submitted the following:

(i) On 5.7.2014, there was agitation at Project surroundings resulting in mob arson & violence at labour colonies which had caused exodus of workforce from site.

(ii) Subsequent to stay on NGT order (related to grant of EC) by the Hon'ble Supreme Court, an organisation namely 'Uttara Kannada Jana Hagu Parisara Rakshan Samithi' (UKJHPRS) gave representations to various authorities, including the Chief Minister of Karnataka, against the project. It also indulged in negative publicity with the aim of creating apprehensions in the minds of local villagers against the Project. The tactics included morphing of images & presenting pictures of health risks.

(iii) An unauthorised meeting was organised by the said organisation (UKJHPRS) on 5.7.2014 at the entrance to the Project wherein, the mob turned violent and indulged in arson, setting fire to the labour colony rooms including its efforts to enter plant premises. After lathi charge and tear gas shelling failed to control the mob, the police had to resort to firing, resulting in injury to farmers. This issue was taken up by Karnataka Rajya Raitha Sangha (farmers' association) by organising public meetings near the plant on 21.7.2014 supported by 'La Via Campesina South Asia' on 5.8.2014 and Rail roko on 12.8.2014.

(iv) The Petitioner took steps for restoration of harmony and to get the working conditions back to normal by (i) creating awareness amongst local people on the benefit of the Project to the community; (ii) engaging in dialogue with agitators by visit to their tents with local MLA; and (iii) sending letters to all MP's, MLA's and MLC's by the competent authorities of the Petitioner, reflecting the commitment of the Petitioner to environment preservation and explaining the benefits of project.

(v) On 26.8.2014, Karnataka Rajya Raitha Sangha organised a procession in Bijapur and in subsequent meeting with DC, demanded that the Petitioner should file affidavit before the Hon'ble Supreme Court that there will not be any harmful effect from the Project. The Petitioner reaffirmed its commitment and filed affidavit before the Court on 4.9.2014 indicating that



the operation of plant would be in conformity with all applicable environmental laws.

(vi) A meeting was held on 6.9.2014 with the Energy Minister of the State Govt. of Karnataka to ensure the withdrawal of agitation. However, the farmers' association did not withdraw their agitation. The agitating leaders were engaged through back channels using the services of PR consultant and through series of meetings by DC-Bijapur.

(vii) The agitation which started on 5.7.2014 was finally withdrawn on 1.4.2015. During the period of 199 days, the entire progress of the project was severely hampered due to non-availability of man power.

Accordingly, the Petitioner has prayed that the delay may be condoned as the circumstances were beyond the control of the Petitioner.

25. The Respondent No.5 TANGEDCO has submitted that it is the responsibility of the Petitioner to overcome the issues associated with the project and to commission the project before the timeline and hence the delay may not be condoned.

26. Respondent No.6 BESCOM has submitted that the SCOD of the Project was in April 2016, which indicates that most of the equipment ought to have been transported to the site and should have been within the Project premises by the time the agitations started. It has also submitted that the Petitioner has not furnished any documents/material to show that there was stoppage of works during the period from 6.7.2014 to 1.4.2015. The Respondent has further submitted that it was the responsibility of the Petitioner to overcome the issues associated with the completion of the Project and to commission the project as per the timeline specified. Similar submissions have been made by the Respondent No.11 KSEB. It has however added that the impediments to transportation of equipment, men and materials for the project were not reported during the above period.





27. We have examined the matter. The Petitioner has attributed the delay of 240 days from 5.7.2014 to 1.4.2015 to Bandhs/Agitation and Riots by organisation viz. UKJHPRS and the farmer association. However, it is noticed from the submissions of the Petitioner that the laying of Makeup Water Pipelines was being carried out from March, 2015 onwards. Further, from the milestone activities furnished by the Petitioner, it is noticed that the work of Boiler hydro test for Unit-I and TG Erection start of Unit-II was carried out on 31.1.2015 and 30.3.2015 respectively. All these activities were carried out by the Petitioner during the period covered by bandhs/agitation. Moreover, from the submissions of the Petitioner in the Civil Appeal No. 3870 of 2014 filed by the Petitioner before the Hon'ble Supreme Court, it is observed that normalcy was restored in the Project site on 25.8.2014. It was also submitted by the Petitioner in the said appeal that 65% of the original deployed work force was remobilized and the activities on all fronts were commenced. In view of this, we are not inclined to condone the delay except from 5.7.2014 till 25.8.2014. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 51 days from 5.7.2014 to 25.8.2014 is condoned for all the three units of the generating station. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

### Drought

28. The Petitioner has prayed for time overrun due to drought situation in Bijapur district and has made the following submissions:

- (i) There was drought in Bijapur district due to low annual rainfall during 2015 (for rabi season rainfall is about 1/3 rd of average annual rainfall) and consequently low reservoir levels at Almatti Dam. A restriction for drawl of water was declared by the District administration in the month of February, 2016.



(ii) State of Karnataka has faced drought for the third consecutive year and it was worst in about four decades. The northern districts such as Raichur, Kalburgi, Bijapur and Bidar were among the most drought affected districts. The Almatti dam, which stores water from the river Krishna, was seeing 'dead storage' at only 10% of its capacity of 124 tmcft at the start of summer season of 2016. The district administration had barred drawing of water for farming and industries on 13.2.2016.

(iii) Due to ban imposed on water drawl for industrial purposes, special permission for reduced water drawl of 0.05 tmc, against the requirement of 0.3 tmc was taken, thereby constraining the plant capabilities for commissioning. In future, water could only be drawn after MDL levels of Almatti reached at 506.87 tmcft water level. As on 28<sup>th</sup> June, 2016 level was only 505.54 tmcft.

(iv) For the purpose of pre-commissioning and initial operation, 0.3 tmc of water was required from the middle of January,2016 up to May,2016. The Petitioner had requested Krishna Bhagya Jala Nigam Limited (KBJNL) to allocate the necessary quantity so that water drawl could be started. KBJNL on 16.2.2016 permitted Petitioner to draw 0.3 tmc of water subject to some conditions. One such condition was the formal clearance of the Deputy Commissioner, Vijayapura and Regional Commissioner, Belgavi prior to the commencement of water drawl.

(v) The Office of Regional Commissioner, Belagaum issued order on 2.3.2016 in granting permission to the Petitioner to lift water for 30 days, limited to 0.05 tmc. Thus, the commissioning and erection activities were severely impacted due to non-availability of water.

Accordingly, the Petitioner has submitted that the delay on this count may be condoned.

29. The Respondent No.5 TANGEDCO has submitted that the pre-commissioning activities have to be completed within six months before the date of anticipated COD of the units. It has pointed out that the period of requirement of water as indicated by the Petitioner is for a period between January 2016 and May 2016 which is almost a year prior to the anticipated COD of Unit-I. Therefore, the delay in getting the required quantum of water will not have any impact on the pre-commissioning activities. Accordingly, the Respondent has submitted that the



claim of the Petitioner for condonation of delay on this ground is not justifiable and may be rejected.

30. Respondent No.6 BESCOM has submitted that the pre-commissioning activities were being carried on by the Petitioner between the period from January 2016 to May 2016 and the SCOD of Unit I was in April,2016. It has submitted that if the Petitioner had complied with the original commissioning schedule, the restrictions on water drawl, which arose in February 2016, would have had no or minimal impact on the pre-commissioning activities, since, the pre-commissioning activities would have been substantially completed by that time. Accordingly, the Respondent has submitted that the claim of the Petitioner for condonation of delay may be rejected. Similar submissions have been made by the Respondent No.11 KSEB. It has also submitted that the claim of the Petitioner may be rejected as the arrangements for water and other amenities for construction of the project are attributable to the Petitioner in terms of the Regulations in force.

31. We have examined the matter. The Petitioner has attributed the delay due to drought situation for the period from March, 2016 to July,2016 to the low annual rainfall during 2015 and has submitted that due to unavailability of water, the commissioning and erection activities of the project were affected. In support of the same, the Petitioner has furnished the newspaper clippings for the period from February, 2016 to May, 2016 with regard to the barring of river water from the Krishna and Bhima Rivers, scarcity of water and drought situation in the State of Karnataka. It is noticed from the details of the milestone activities furnished by the Petitioner, that the work of TG Erection and Boiler erection of all the three units were completed by the year 2015 and the Commissioning activities were scheduled to be on January, 2016 for Unit-I, July, 2016 for Unit-II and January,



2017 for Unit-III. However, the commissioning activities of Units-I, II and III were actually completed during December, 2016, May, 2017 and March, 2018 respectively. Since, the scheduled commissioning of Unit-III was January, 2017, due to drought the activities of schedule completion of commissioning activities of only Unit-I and Unit-II were affected. The Petitioner had completed the Boiler light up of Unit-I on 20.12.2015. It is observed that the Petitioner vide its letter dated 1.1.2016 had requested the Managing Director, Krishna Bhagya Jal Nigam Limited (KBJNL) to allocate the necessary quantum of water so that the water drawl can be started from the 3<sup>rd</sup> week of January, 2016, as the first unit was targeted to be commissioned by March, 2016. In response to this request, KBJNL vide its letter dated 16.2.2016 had permitted the Petitioner to draw the required quantum of water (0.3 TMC) subject to clearance from Deputy Commissioner, Vijayapura.

32. As stated earlier, the Petitioner required 0.3 tmc of water for the pre-commissioning activities for the period from January, 2016 to May, 2016. It is noticed from records that the District administration on 13.2.2016 had barred the drawing of water for farming and industries due to less storage of water in the Almatti dam. The Petitioner, on 26.2.2016, had requested the office of Regional Commissioner for lifting of water for the Project and in response, the Regional Commissioner, Belgaum, on 2.3.2016, had allowed the lifting of only 20 cusecs of water per day for 30 days (i.e. 0.05 tmc). However, the Petitioner started drawing of water from 4.3.2016 and could only draw about 0.02 tmc of water till 29.3.2016, due to problems in the pumping system established for drawing water. However, the Petitioner has not clarified the status after 29.3.2016 (25 days after it started drawing water from 4.3.2016) with regard to its requirement for water, its availability, and to when it was allowed to draw the normal requirement of



water. It appears from the claim of the Petitioner that the position with respect to water availability had improved after July, 2016. From the bar chart for Unit-I, it is observed that with the available water drawl, the Petitioner could achieve the 'Steam blowing completion' on 12.6.2016, thereby indicating that sufficient water was available. As such, in the absence of any clear details/position with regard to the availability of water vis-a-vis its requirement, we are of the view that the delay due to drought, which is a force majeure event, was beyond the control of the Petitioner for the period from 15.1.2016 to 3.3.2016 (i.e. the date from which the Petitioner requested for allocation of quantum of water to a date prior to the date on which it started to draw the water) and accordingly, the delay on this count is condoned. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay from 15.1.2016 to 3.3.2016 is condoned. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

**Resistance by villagers/landowners-Power Input arrangement for running Design Make Up Water Pump**

33. The Petitioner, in the main petition, has claimed time overrun for the period from August,2017 to December,2017 on account of the delay in power input arrangement for running Design Make Up Water Pumps due to resistance by Villagers. However, it is noticed from the affidavit dated 10.6.2019 submitted by the Petitioner that the Petitioner has claimed delay of 3 months on account of villagers resistance between full load commissioning to COD of Unit-I. Further, the Petitioner has submitted that following steps were taken to expedite the arrangement of power at Makeup Water Pump House, for running design make up water pumps:





(i) The transmission line work for power input to make-up water pump house envisaged through 66 kV line from the generating station could not be taken up due to villagers' resistance despite having ROU and ROW clearances.

(ii) This issue was taken up in the meeting of the 14<sup>th</sup> Cabinet Committee of Infrastructure (CCI) -Project Monitoring Group (PMG), reviewed by the Chief Secretary, Govt. of Karnataka. In the said meeting, it was pointed out that the resistance by the Villagers'/Landowners for tower construction was yet to be addressed. The situation further worsened with the onset of monsoon and the start of sowing season.

(iii) As a contingency measure, the Petitioner approached the discoms, namely Hubli Electricity Supply Company Ltd. (HESCOM) for providing temporary 7.5 MVA power connection at Almatti pump house from its network. However, the enablement of this power supply required augmentation of KPTCL sub-station at Nidugundi by way of establishment of 110/33 KV transformer and 33KV bay. This augmentation work had to be done on 'deposit work basis' for which the estimates were received from KPTCL. The approval for providing power connection was accorded by the Power Sanction Committee of Karnataka Power Transmission Corporation Ltd (KPTCL) on 17.6.2017.

(iv) The Petitioner was unable to envisage the delay in the power input for Makeup Water Pump House which was for the reasons stated above. The details of the same have also been furnished by the Petitioner in Petition No.172/MP/2017 and 260/MP/2017 filed before this Commission, wherein the Commission vide its orders dated 18.8.2017 and 29.12.2017 respectively, had allowed the extension for interchange of infirm power into the grid for commissioning tests including full load test of Unit-II or the actual date of commercial operation, whichever was earlier.

34. Respondent No.5 TANGEDCO has submitted that the Petitioner is not a new entrant in the field of execution of generation projects and all the necessary arrangements required for successful commissioning of the project has to be taken in advance. Accordingly, the Respondent has submitted that the Commission may reject all the above issues, as the Petitioner should have done proper planning in getting all necessary clearances and arrangements.

35. Respondent No.6 BESCOM has submitted that as per the RoW issued by the Deputy Commissioner, Vijayapura on 29.1.2015, the 40 meters corridor width was



used for laying underground water pipelines (ROU) and for erection of electric towers with transmission line (ROW). It has, therefore, submitted that the same corridor was being used for setting up transmission lines for supplying power from the Plant to the Makeup Water Pump House and for laying of pipelines from the Makeup Water Pump House to the Plant. The Respondent has pointed out that when the work for laying of pipelines was completed in March 2016, there was no occasion to delay the setting up of the transmission lines. The Respondent has also submitted that the claim of the Petitioner for condonation of delay from April 17 to December 17, is in any case beyond the SCOD of all units of the Project and therefore no condonation of delay is possible.

36. Respondent No.11 KSEB has submitted that the claim of the Petitioner is baseless as any resistance by the villagers hindering the execution of work can be effectively handled with the help of the District Administration. It is submitted that the Petitioner ought to have taken proper steps in this regard and, therefore, the prayer of the Petitioner may be rejected.

37. We have examined the submissions of the parties and the documents available on record. The date of "Commissioning at full load" as per original schedule of Unit-I was 31.1.2016 and date of scheduled COD is 25.5.2016. However, the actual date of "Commissioning at full load" of unit-I was 25.12.2016 and actual date of commercial operation was 31.7.2017. Accordingly, the actual time taken for completion of the activities from full load commissioning to COD is seven months and six days in place of original schedule of four months. The Petitioner vide affidavit dated 10.6.2019 w.r.t delay of Unit-I has attributed the said delay to villagers resistance due to which power input arrangement for running make up water pump could not be put into place. Further, it is observed



that Petitioner in the Petition has also furnished the proceedings of the 14<sup>th</sup> CCI-PMG meeting held on 18.5.2017 under the chairmanship of Chief Secretary, Government of Karnataka, in which it is mentioned that construction of 66 KV Transmission Towers in ROU/ROW was hindered due to resistance from the villagers. Despite having received the clearance for ROU/ ROW from Govt. of Karnataka, the Petitioner could not take up the work of Transmission line due to villagers resistance. Finally, the Petitioner came up with alternate arrangement which was also approved by Power sanction committee of KPTCL on 17.6.2017. After the availability of power supply from alternate arrangement the Petitioner could declare the COD of Unit-I on 31.7.2017.

38. It is observed that the actual date of full load commissioning of Unit-I was 25.12.2016 and considering the original schedule of 4 months from full load commissioning to COD, the Petitioner should have declared COD by 25.4.2017. However, by this date, even the alternate arrangement of power for running was not in place. The Petitioner could only declare the COD on 31.7.2017 after it could arrange the power from KPTCL on 17.6.2017. In light of above facts, it is evident that the Petitioner was taking all possible steps to mitigate the delay caused by villager's resistance. Hence, we are of the view that the delay of 97 days i.e. from 25.4.2017 to 30.7.2017 in achieving COD of unit-I due to villagers' resistance was an uncontrollable factor. Accordingly, the corresponding delay of 97 days is condoned. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

39. Further, the full load commissioning of Unit-II was carried out on 23.3.2017 against the original schedule of 31.7.2016. There was a schedule of 4 months from "commissioning at full load" to COD of Unit-II. However, the Petitioner has taken 9



month and 8 days to declare the COD of Unit-II i.e. 31.12.2017 and the Petitioner has attributed the said delay to villagers' resistance.

40. As mentioned above, due to continued resistance by the Villagers, the Petitioner had come up with an alternate arrangement of power supply for Makeup Water Pumping System from the discoms viz., HESCOM/KPTCL, which was approved on 17.6.2017. Considering the fact that the Petitioner has taken 9 months and 8 days to carry out the activity from "commissioning at full load" to COD of Unit-II, against the schedule of 4 months, there is an effective delay of 5 months and 8 days up to 31.12.2017 i.e. COD of Unit-II. Since, the Petitioner has carried out commissioning at full load of Unit-II on 23.3.2017 and the power input was available on 17.6.2017, the said delay of 85 days from 24.3.2017 to 16.6.2017 is condoned and the Petitioner is given the benefit of the additional cost incurred due to time overrun. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost. Out of 5 months and 8 days delay, the period from 24.3.2017 to 16.6.2017 is condoned and the balance period of 2 months (approx.) is not condoned. Therefore, the increase in cost on account of the said delay of 2 months has to be borne by the Petitioner. However, the Liquidated Damages (LD) and Insurance proceeds if any, received by the generating company, on account of the said delay, could be retained by the generating company.

**Resistance by Villagers-Northern side Railway Siding and Water Reservoir for Lagoon-2**

41. In respect of Unit-III of the Project, the Petitioner has claimed time overrun for the period from February, 2018 to September, 2018 on account of the delay caused by resistance by Villagers to the work of Railway Siding and Water Reservoir. The Petitioner has submitted that though Unit-III of the Project was test



synchronized on 22.8.2017, the completion works/activities got severely affected after the synchronization, due to the following reasons:

- (i) The Railway siding of the Project was connected only from one side i.e. from Southern side to South Western line against the design connection bulb on both sides (Southern and Northern). With one side connectivity of the siding, a maximum of 6-7 rakes/day could reached the plant, with which the coal requirement of only two units operation could be facilitated. To enable the rake movement up to the level of 9-11 rakes/ day, required to run all three units on sustainable basis after the commercial operation, the completion of northern side bulb of railway siding was essential.
- (ii) The works of Northern side Railway Siding bulb were constrained by the delays in land acquisition. The land acquisition in respect of the Project was carried out by Karnataka Industrial Area Development Board (KIADB), a Govt. of Karnataka Undertaking, which looks after the industrial area development in the State of Karnataka.
- (iii) The land acquisition requirement for the railway siding (both sides) was made by Petitioner on 8.12.2012. Though the works on the Northern Siding bulb had started, the same were on a standstill due to resistance from Villagers. Subsequent to the availability of encumbrance free land (anticipated in February, 2018), the construction of one Road over Bridge (RoB) and one Road under Bridge (RuB) on the northern side Railway Siding line was also to be taken up.
- (iv) Besides the availability of Railway Siding land, the physical possession of land for Water Reservoir for Lagoon-2 was also delayed due to resistance from villagers and pending payments from KIADB. The part possession of the land was completed during the first week of January, 2018 after continued persuasion with the State Govt. and works were restarted. The reservoir of Lagoon-1 was under operation which could suffice for sustainable operation of only two units.
- (v) For continuous running of three units during the summer months, wherein the water drawal was restricted by certain agreement conditions, the water storage capacity wouldn't be sufficient enough without Lagoon-2.
- (vi) Though, the northern bulb Railway siding and Water Reservoir for Lagoon-2 were still a constraint, based on the indication from South Western Railways for augmented supply of coal rakes and with the expected onset of monsoon in June, 2018, in line with the water agreement conditions, the Petitioner had declared the COD of Unit-III w.e.f. 00:00 hrs of 15.9.2018.





(vii) This delay has also been condoned by the Commission in its Order dated 23.2.2018 in Petition No. 51/MP/2018 and Order dated 1.6.2018 in Petition No.146/MP/2018, wherein extension of time for interchange of power with the grid was permitted.

42. Respondent TANGEDCO has submitted that all necessary arrangements required for successful commissioning of the Project has to be taken in advance as all the activities which form part and parcel of execution of a Project are overlapping in nature. It has also submitted that instead of taking a proactive stand in settling all issues related to commissioning, the Petitioner has involved in blame game and has sought extension of time and condonation of delay by citing trivial issues. Accordingly, it has prayed that the Commission may reject the claim of the Petitioner.

43. Respondent No.6 BESCO has submitted that despite the SCOD for the Units falling in 2017, the Petitioner had not taken any steps prior to March, 2016 for expediting the land acquisition process for the Railway Siding. It has also submitted that the Petitioner being the most experienced entity in the nation with regard to execution of thermal power projects, ought to be aware of the time taken and the hurdles faced in the setting up of a thermal power project. The Respondent has stated that proactive steps for avoidance of delay need to be taken by the Petitioner in order to be able to make out a case for condonation of delay, but the Petitioner has failed to take any proactive action. The Respondent has accordingly submitted that the delay on this account from February 2018 to September 2018, which period is in any case beyond the SCOD of all units of the Project, may not be condoned as Petitioner has not made out any case for condonation of delay.



44. Respondent No.11 KSEB has submitted that the claim of the Petitioner is baseless as any resistance by the villagers hindering the execution of work can be effectively handled with the help of the District Administration. It has submitted that the Petitioner ought to have taken proper steps in this regard and therefore, the prayer of the Petitioner may be rejected.

45. We have considered the submissions. The generating station was connected only from one side i.e. from Southern side to South Western line against the design connection bulb on both sides (Southern and Northern) for transportation of coal. A maximum of 6 to 7 rakes per day was possible with the one side connectivity of the siding, with which the coal requirement of only two units operation was possible. To cater the requirement of coal in all the three units 9 to 11 rakes per day is required for the generating station. Hence, the works of Northern side railway siding bulb was required which was constrained by the delays in land acquisition. Besides the availability of Railway siding land, the physical possession of land for water reservoir for Lagoon-2 was also delayed due to villagers' resistance. The reservoir of Lagoon-1 was under operation which could cater to the requirement of only two units of the generating station. As per submissions of the Petitioner, the Scheduled COD of Unit-III of the generating station was 30.5.2017 (considered as 25.5.2017) and the actual COD of the Unit-III of the generating station is 15.9.2018. The Petitioner has attributed the delay from February, 2018 to September, 2018 due to Villagers resistance for possession of land for transportation of coal from the Northern side and Reservoir for Lagoon-2. Land acquisition at the Project was carried out by KIADB, which looks after industrial area development in the State of Karnataka. The Petitioner has made up the land acquisition requirement for the Railway Siding (both sides) on 8.12.2012. However,



KIADB did not complete the payment disbursement for the above land and had not provided the possession letter to the Petitioner. It could not be inferred from the submissions of the Petitioner that during the intervening period of around 4 years, between 8.12.2012 (i.e. date on which land requirement request was made by the Petitioner) and 3.1.2016 (first letter to KIDAB for land acquisition issue for Railway Siding) the Petitioner had taken up the matter with the concerned authorities of the Central Govt. and the State Govt. (MOP, GOI and GoK) to persuade KIDAB to release the payment to the Villagers/Land owners. Hence, the delay for the period from 13.3.2018 to 15.9.2018 cannot be said to be beyond the control of Petitioner.

46. The Petitioner has placed reliance on the decision of the Commission in its Order dated 23.2.2018 in Petition No. 51/MP/2018 and Order dated 1.6.2018 in Petition No.146/MP/2018 to contend that the Commission had allowed extension of time period for injection of infirm power into grid. In our view, the reliance placed on the aforesaid orders would not be of any help to the Petitioner's claim for condonation of delay. It is observed that in the aforesaid Petitions filed by the Petitioner, the Commission had vide its orders allowed the injection of infirm power into the grid for commissioning tests, including full load test of Unit-III upto 31.5.2018/31.8.2018 or the actual date of commercial operation, whichever was earlier. It was, however, clarified in the said orders that the extension of time shall not automatically entitle the Petitioner for IDC/IEDC for delay in declaration of COD and that the same would be considered on merits at the time of determination of tariff. The relevant portion of the order is extracted hereunder:

*"It is clarified that the extension of time as allowed in this order shall not automatically entitle the Petitioner for IDC/IEDC for delay in declaration of COD which shall be considered on merit at the time of determination of tariff of the unit/generating station."*



47. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation 7.4 (i))], the delay for the period from 13.3.2018 to 15.9.2018 cannot be said to be beyond the control of Petitioner and hence not condoned. However, the Liquidated Damages (LD) received from the contractor and insurance proceeds, if any, received by the Petitioner, on account of the said delay, could be retained by the Petitioner.

48. To summarise, the period of delay condoned in terms of the above discussions are 133 days for the period from 5.8.2013 to 16.12.2013 due to ban on mining imposed by the Govt, 32 days for the period from 13.3.2014 to 13.4.2014 due to NGT order for suspension of project work; 51 days for the period from 5.7.2014 to 24.8.2014 due to Law & Order issues; 49 days for the period from 15.1.2016 to 3.3.2016 on account of Drought situation; and 97 days for Unit-I from 25.4.2017 to 30.7.2017 & 85 days for Unit-II from 24.3.2017 to 16.6.2017 on account of villagers resistance in power input arrangement for running Design Make Up Water Pumps. Based on the above decisions, we analyse below the impact of the reasons of delay as on COD of the individual units.

#### **Unit I-Milestone wise analysis of Time overrun**

49. The SCOD of Unit-I of the Project is 25.5.2016. The details furnished by the Petitioner in respect of time overrun for Unit-I of the Project are as stated in the page below:



Task	Milestone	Scheduled Start Date	Scheduled Completion Date	Actual Start date	Actual Completion date	Schedule Duration (month)	Actual Duration (month)	Delay (month)	Reasons of delay with individual delay (Start and End date)
A	Zero Date of the Station/ start date of Unit-I	25.1.2012	25.1.2012	25.1.2012	25.1.2012	0	0	0	
B	Boiler Erection Start	31.3.2013	31.3.2013	4.5.2013	4.5.2013	14	15	1	1. ROU for Makeup water pipeline was received from the District Administration on 29.01.2015 for the appeal done from NTPC on 13.12.2012. 2. Shri M. P. Patil filed Appeal No. 12/2012 on 22.02.2012 in National Green Tribunal (NGT) against Union of India (through MOEF) challenging the accord of Environmental Clearance for Kudgi STPP.
C	TG Erection Start	31.5.2014	31.5.2014	21.6.2014	21.6.2014	28	28	0.7	3. Status quo order on project activities received from NGT Delhi on 13.03.2014, which was subsequently lifted by the Honble Supreme Court on 01.04.2014 4. On 5th July'14 an unauthorised meeting is organised by an organisation named "Uttara Kannada Jana Hagu Parissra Rakshan Samiti" at the entrance to plant where the mob turned violent and indulged in arson setting fire to labour colony rooms and tried to enter plant premises. After lathi Charge and tear gas shelling failed to control the mob, police as a last resort had to resort to firing in which two persons were injured. As a result of the environment of threat created by arsonists, mass exodus of labour occurred from Site. With the support of state administration labour strength was restored only from mid-August'2014
D	Boiler Hydro test	30.9.2014	30.9.2014	31.1.2015	31.1.2015	32	36	4	5. NGT order issued on 05.08.2013 for ban on sand mining.
E	Boiler Light up	30.6.2015	30.6.2015	20.12.2015	20.12.2015	41	46	5	Time period of around 25.5 months taken by administration for giving clearance resulted in delay in start of erection work for execution of Makeup water system package. Scheduled start date for erection work was Jan 2014 which actually started in March 2015.
F	TG Box up	30.4.2015	30.4.2015	24.4.2015	24.5.2015	39	38	-	
G	TG Oil flushing completion	30.6.2015	30.6.2015	30.6.2015	30.6.2015	41	41	0	





H	Steam Blowing completion	30.9.2015	30.9.2015	12.6.2016	12.6.2016	44	52	8	An order was issued by district administration on 12.02.2016 barring drawing of water from either Krishna or Bhima river as a precautionary measure to save water for summer. Permission for drawing min amount of water i.e. 0.05 TMC issued by Regional Commissioner, Belagavi on 02.03.2016 for a period of 30 days. Water drawing from Almatti reservoir started only from 4.3.2016.
I	Unit Synchronization	30.11.2015	30.11.2015	28.11.2016	28.11.2016	46	58	12	
J	Commissioning/ Full load	31.1.2016	31.1.2016	25.12.2016	25.12.2016	48	59	11	
K	COD	31.5.2016	31.5.2016	31.7.2017	31.7.2017	52	66	14	Villagers Resistance - Power input arrangements for running make up water pump at the pump house. The details of the same have also been given in PetitionNo.102/MP/2017. The Commission has allowed the extension based on bonafide reasons for interchange of power with the grid in petition 102/MP/2017 vide order dated 30.5.2017.

50. It is observed that the activity of 'Boiler Erection Start' which was scheduled to commence from 31.3.2013 had commenced on 4.5.2013, with a delay of 34 days. The reasons furnished by the Petitioner against this activity as above do not justify the delay. As stated, one Mr. Patil had filed appeal before NGT against the grant of EC to the Project and NGT vide its order dated 13.3.2014 had stopped all Project activities. As such, there was no impact on the milestone activity of "Boiler Erection Start". In the absence of justification, the delay of 34 as claimed by the Petitioner cannot be condoned. Similarly, the 'T.G. Erection Start' got delayed by 21 days, but on overall basis the 'Turbine Generator Package' had been completed on time, with the completion of the last activity i.e. 'TG Oil flushing completion'. In other words, the scheduled and the actual completion dates were the same i.e. 30.6.2015. The delay in achieving COD has occurred from the Boiler Package side.



51. The next activity was the Boiler Hydro Test with a completion schedule of 32 months from the 'Zero date', which took around 36 months from the Zero date. As such, there is a delay of 4 months (123 days). From the justifications furnished by the Petitioner, it is noticed that (i) the order of NGT had affected the progress of the work from 13.3.2014 to 13.4.2014 (32 days); (ii) Mob violence affected the progress of the work from 5.7.2014 to 24.8.2014 (51 days); and (iii) ban on mining affected the work from 5.8.2013 to 16.12.2013 (133 days). We have in this order held that the delays caused on account of the NGT orders and mob violence was beyond the control of the Petitioner. The Petitioner had also made several correspondences with the various Mining authorities and the Govt. of Karnataka and had requested them for restoring the availability of sand. In this background, the delay of 123 days up to actual date of Hydro test i.e. 31.1.2015 has been condoned. This delay subsumes the delay of 34 days in the start of Boiler.

52. In respect of 'Boiler Light up', the Petitioner has claimed a time overrun of 173 days i.e. 50 days more than the activity of 'Boiler Hydro Test' for which the delay of 123 days had already been condoned. The reason for this delay as furnished by the Petitioner is the late clearance given by the administration which had resulted in the delay in start of erection work for Makeup Water System Package. The scheduled start date for erection work as mentioned is January, 2014 and the same had actually commenced in March 2015. We have in this order in para 18 above has decided that the delay on this count was not beyond the control of the Petitioner. Accordingly, only the delay of only 123 days till 'Boiler Light up', is allowed against the total delay of 173 days.

53. The activity of 'Steam Blowing completion' was scheduled for 30.9.2015 and the same got completed on 12.6.2016. The Petitioner has attributed the delay due



to 'Drought' on account of low reservoir level. It is observed that there was restriction on the Water drawl by the District Administration and the Petitioner was not permitted to draw the required quantum of water from the Almatti Dam. As decided in para 32 above, the delay of 49 days (from 15.1.2016 to 3.3.2016) has been condoned. Accordingly, the total delay allowed till this activity is 172 days (123+49).

54. As regards the activity of 'Unit Synchronization', it is noticed that the Petitioner had taken around 6 (six) months against the two months' time scheduled after the 'Steam Blowing completion' activity. The Petitioner has attributed the delay to 'Drought' wherein it was not permitted to draw the required quantum of water. However, as decided in para 32 above, the delay on account of Drought is 49 days and the same had already been condoned as above. Accordingly, the delay for a further period (beyond the period of 172 days) since the last activity has not been condoned.

55. The activity of 'Commissioning at full load' was achieved in one month (approx.) against the scheduled time period of two months after 'Unit Synchronisation'. It is observed that after the commissioning of the unit, the Petitioner had taken around 7 (seven) months in the declaration of COD against the scheduled time period of 4 (four) months. The reason as attributed by the Petitioner for such additional time is the 'Villagers resistance' on account of which the power input arrangements for running Make up Water Pump at the pump house had got delayed. It is noticed from the Petitioner's earlier submissions in the main petition that the delay claimed on this count starts from August, 2017. However, Unit-I had achieved COD on 31.7.2017 i.e. before the date from which the impact of Villagers resistance was claimed. In paras 37 & 38 above, we have condoned the



delay of 97 days from 26.4.2017 to 30.7.2017 due to Villagers' resistance.

Accordingly, the total time overrun of 269 days (172+97 days) till COD of Unit-I has only been condoned as against the total delay of 432 days.

**Unit II-Mile stone wise analysis of Time overrun:**

56. The details furnished by the Petitioner in respect of time overrun for Unit-II of the Project are as under:

Task	Milestones	Schedule Start Date	Schedule Completion Date	Actual Start date	Actual Completion date	Schedule Duration (month)	Actual Duration (month)	Delay (Days/month)	Reasons of delay with individual delay (Start and End date)
A	Scheduled Start Date (i.e. Zero Date + 6 months)	25-Jul-2012	25-Jul-2012	25-Jul-2012	25-Jul-2012	0	0	0	The reasons are same as that of Unit-I as the zero date of the subsequent units were at an interval of 6 months thereafter (i.e. 6 months after 25.01.2012).
B	Boiler Erection Start	30-Sep-2013	30-Sep-2013	16-Sep-2013	16-Sep-2013	14	13	0	
C	TG Erection Start	30-Nov-2014	30-Nov-2014	30-Mar-2015	30-Mar-2015	28	32	4	
D	Boiler Hydro test	30-Mar-2015	30-Mar-2015	31-Aug-2015	31-Aug-2015	32	37	5	
E	Boiler Light up	30-Dec-2015	30-Dec-2015	31-Oct-2016	31-Oct-2016	41	51	10	
F	TG Box up	30-Oct-2015	30-Oct-2015	25-Feb-2016	25-Feb-2016	39	43	4	
G	TG Oil flushing completion	30-Dec-2015	30-Dec-2015	26-Apr-2016	26-Apr-2016	41	45	4	
H	Steam Blowing completion	30-Mar-2016	30-Mar-2016	4-Jan-2017	4-Jan-2017	44	53	9	
I	Unit Synchronization	30-May-2016	30-May-2016	18-Feb-2017	18-Feb-2017	46	54	8	
J	Commissioning/ Full load	31-Jul-2016	31-Jul-2016	23-Mar-2017	23-Mar-2017	48	55	7	
K	COD	30-Nov-2016	30-Nov-2016	31-Dec-2017	31-Dec-2017	52	65	13	Villagers Resistance - Power Input arrangement for running design make up water pump. Details of the same have also been given by the Petitioner in the earlier petition no. 172/MP/2017 and 260/MP/2017 and Commission has allowed the extension for interchange of power with grid vide order dated 18.08.2017 & 27.11.2017 in petition no. 172/MP/2017 & 260/MP/2017 respectively.



57. The Commission had examined in detail the time overrun claimed by the Petitioner and has, on prudence check, condoned the time overrun for reasons which were beyond the control of the Petitioner and not attributable to it. Accordingly, the activities/milestones falling under the period condoned for the Unit-II of the generating station has been considered.

58. The activity of 'Boiler Erection Start' for Unit-II of the generating station had commenced prior to schedule date of 30.9.2013. However, the actual date of commencement of work is 16.9.2013. Hence, there is no delay in the work of 'Boiler Erection Start' for Unit-II of the generating station.

59. As regards the activity of "TG Erection Start", a schedule of 28 months (approx.) was considered by the Petitioner from the 'Schedule start date' of Unit-II i.e. 25.7.2012 to 'TG Erection start' date of 30.11.2014. However, the actual completion period is 32 months from the 'Schedule start date' to 'TG Erection start' date of 30.3.2015. Accordingly, there is a delay of 120 days. As stated earlier, this activity was affected by reasons such as (i) ban on mining; (ii) NGT order dated 13.3.2014; and (iii) law and order issues, for a period more than the delay of 120 days claimed by the Petitioner. Accordingly, delay of 120 days till 'TG Erection start' has only been condoned as the same was for reasons beyond the control of the Petitioner.

60. The activity of 'Boiler Hydro Test' is with a completion schedule of 18 months from the 'Boiler Erection start' date of 30.9.2013. As per schedule, this activity should have been completed by 30.3.2015 as against the actual completion date of 31.8.2015. As such, there is a delay of 5 months (153 days). From the justifications/reasons furnished by the Petitioner, it is noticed that the progress of work was affected by the (i) order of NGT for a period from 13.3.2014 to 13.4.2014





(32 days); (ii) mob violence from 5.7.2014 to 24.8.2014 (51 days); and (iii) ban on mining from 5.8.2013 to 16.12.2013 (133 days). This activity has been affected by the reasons like ban on mining, NGT order dated 13.3.2014 and law and order issues for a period more than the period of delay of 153 days as claimed by the Petitioner. Accordingly, the delay of 153 days up to the actual date of 'Boiler Hydro test' of 31.8.2015 has been condoned.

61. For the activity of 'Boiler light up', the Petitioner has claimed a time overrun of 306 days i.e. 153 more days from the previous activity of 'Boiler Hydro Test' for which the delay of 153 days has already been condoned. The reason for this delay as furnished by the Petitioner is the late clearance given by the administration which had resulted in the delay in start of erection work for Makeup Water System Package. The scheduled start date for erection work as mentioned is January, 2014 and the same had actually commenced in March 2015. We have in this order in para 18 above decided that the delay on this count was not beyond the control of the Petitioner. However, it is observed that the schedule period between 'Boiler hydro test' and 'Boiler light up' is 9 months. As such, considering the actual date of achieving 'Boiler hydro test' on 31.8.2015 i.e. the date till time overrun of 153 days has been condoned, the work of 'Boiler light up' should have been completed by 30.5.2016. However, the actual completion date of 'Boiler Light Up' is 31.10.2016. As such, the period from the date of actual 'Boiler Hydro Test' to the actual date of 'Boiler light up' was also affected by 'Drought' for 49 days, which has been condoned in para 32 above. Accordingly, delay of 202 days (153+49) till 'Boiler light up' is condoned in respect of Unit -II.

62. As regards the activity of 'Steam Blowing completion' which was scheduled to be completed on 30.3.2016, actually got completed on 4.1.2017, thereby causing a



delay of 280 days. The activity of 'Unit synchronisation' which was scheduled on 30.5.2016 was actually completed on 18.2.2017, causing a delay of 264 days. For the activity of 'Commissioning full load' which was scheduled on 31.7.2016, was completed only on 23.3.2017, thereby causing a delay of 235 days. The Petitioner has submitted that the same reasons for delay which have caused the delay in respect of Unit-I were responsible for delay in respect of Unit-II. Since, we have not condoned any further period of delay due to 'Drought' for Unit-I, the same is not allowed for Unit-II also. Accordingly, further delay till "commissioning full load" over and above the allowed delay of 202 days allowed till the "Boiler Light Up" is not condoned.

63. The SCOD considered for time overrun of Unit-II is 25.11.2016 and the actual COD of the said unit is 31.12.2017. The Petitioner has attributed the further delay after "Commissioning full load" on power input arrangement on account of the villagers' resistance. We have, in para 40 of this order, after prudence check, permitted the delay on account of the villagers' resistance for a further period of 85 days w.e.f. 24.3.2017 to 16.6.2017. Accordingly, the delay on this count has been condoned in respect of Unit-II of the generating station. On overall basis, the delay of only 287 days (i.e. 202+85), till the actual COD of the Unit-II has been condoned against an actual delay of 401 days in achieving COD.

### **Unit III- Milestone-wise analysis of Time overrun**

64. The details furnished by the Petitioner in respect of time overrun for Unit-III of the Project are as under:



Task	Milestone	Schedule Start Date	Schedule Completion Date	Actual Start date	Actual Completion date	Schedule Duration (month)	Actual Duration (month)	Delay (Days/month)	Reasons of delay with individual delay (Start and End date)
A	Scheduled Start Date (i.e. Zero Date +12 months)	25-Jan-2013	25-Jan-2013	25-Jan-2013	25-Jan-2013	0	0	0	The reasons are same as that of Unit-I as the zero date of the subsequent units were at an interval of 6 months thereafter (i.e. 12 months after 25.01.2012).
B	Boiler Erection Start	30-Mar-2014	30-Mar-2014	20-Aug-2013	20-Aug-2013	14	6	0	
C	TG Erection Start	30-May-2015	30-May-2015	25-Sep-2015	25-Sep-2015	28	32	4	
D	Boiler Hydro test	30-Sep-2015	30-Sep-2015	31-Mar-2016	31-Mar-2016	32	38	6	
E	Boiler Light up	30-Jun-2016	30-Jun-2016	9-Apr-2017	9-Apr-2017	41	50	9	
F	TG Box up	30-Apr-2016	30-Apr-2016	31-Aug-2016	31-Aug-2016	39	43	4	
G	TG Oil flushing completion	30-Jun-2016	30-Jun-2016	31-Oct-2016	31-Oct-2016	41	45	4	
H	Steam Blowing completion	30-Sep-2016	30-Sep-2016	2-Jun-2017	2-Jun-2017	44	52	8	
I	Unit Synchronization	30-Nov-2016	30-Nov-2016	22-Aug-2017	22-Aug-2017	46	54	8	
J	Commissioning/ Full load	31-Jan-2017	31-Jan-2017	12-Mar-2018	12-Mar-2018	48	61	13	Villagers Resistance -Northern side Railway siding and water reservoir for Lagoon-2. This delay has also been condoned by the Hon'ble Commission vide its order dated 23.02.2018 & 01.06.2018 in petition no. 51/MP/2018 and 146/MP/2018 respectively wherein time extension for interchange of power with grid has been allowed.
K	COD	30-May-2017	30-May-2017	15-Sep-2018	15-Sep-2018	52	67	15	

65. The 'SCOD' of Unit-III of the generating station as considered by the Petitioner is 30.5.2017. However, considering the SCOD of 25.5.2017 and the actual COD of Unit-III as 15.9.2018, there is a total delay of 478 days in the COD of Unit-III. The reasons for the delay in the activities from 'Boiler Erection start' to 'Commissioning full load' as submitted by the Petitioner is the same as that of the delay of Unit-I. The Commission in this order had examined in detail the time



overrun claimed by the Petitioner and has, on prudence check, condoned the time overrun for reasons which were beyond the control of the Petitioner and not attributable to it. Accordingly, the activities/milestones falling under the period condoned for the Units-I & II of the generating station have been considered for Unit-III also based on the analysis of milestone activities of Unit-III.

66. The activity of 'Boiler Erection start' of Unit-III of the generating station had actually commenced on 20.8.2013 prior to the scheduled date of 30.5.2014. Hence, there is no delay in the said activity of Unit-III of the generating station.

67. The activity of 'TG Erection start' was scheduled around 28 months from the 'Schedule start date' of Unit-III (25.1.2013) to 'TG Erection start' date of 30.5.2015. However, the actual completion period is 32 months from the 'Scheduled start date' to the actual date of 'TG Erection start' (i.e. 25.9.2015). As such, there is a delay of 118 days. This activity has been affected by the reasons like ban on mining, NGT order dated 13.3.2014 and law and order issues which had already been condoned and the period of delay is more than the delay of 118 days claimed by Petitioner. Accordingly, the delay of 118 days till the 'TG Erection start' has been condoned due to reasons which are not attributable to the Petitioner.

68. The completion schedule of 'Boiler Hydro Test' activity is 32 months. As per schedule, this activity should have been completed by 30.9.2015 as against the actual completion date of 31.3.2016. As such, there is a delay of 6 months (183 days) upto the completion date of 'Boiler Hydro Test'. From the justifications/ reasons furnished by the Petitioner, it is observed that that the progress of work was affected by the (i) ban on mining;, (ii) Order dated 13.3.2014 of NGT; (iii) law



and order issues and (iv) Drought, which had already been condoned and the period of delay condoned is more than the delay of 183 days as claimed by the Petitioner. Accordingly, the delay of 183 days claimed up to the 'Boiler Hydro Test' by the Petitioner is condoned.

69. It is observed that from the 'Schedule start date' of Unit-III i.e. 25.1.2013 to actual date of 'Steam blowing completion' i.e on 2.6.2017, the delay of 245 days has been claimed by the Petitioner. As such, the activities till 'Steam blowing completion' have been affected by reasons like ban on mining, order of NGT dated 13.3.2014, Law and Order issues and Drought which had already been condoned. Hence, the delay up to 'Steam blowing completion' has already been subsumed in the activities up to 'Boiler Hydro Test'. Accordingly, the delay of only 183 days till 'Steam Blowing completion' on 2.6.2017 has been condoned as the same is for reasons which were beyond the control of the Petitioner.

70. Further, on TG side the last activity is 'T.G Oil flushing completion' which was completed on 31.10.2016 prior to the date of completion of 'Steam blowing completion' i.e. 2.6.2017. As such, both the Turbine and Boiler were available on 2.6.2017 for the next activities of 'Unit synchronization' and 'Commissioning' of Unit-III of the Project.

71. The total delay claimed by the Petitioner up to the 'synchronisation of Unit-III' which was achieved on 22.8.2017, is 265 days. Further, there is a total delay of 405 days in the 'Commissioning full load' of Unit-III which was achieved on 12.8.2018. Considering the fact that delays after 3.3.2016 (15.1.2016 to 3.3.2016 due to 'Drought') had not been condoned, no further delay beyond the delay of 183 days has been condoned till the 'Commissioning full load' of Unit-III of the Project. It is mentioned here that delay between "Commissioning full load" and





‘COD’ as condoned for Unit-I and Unit-II which was caused by non-availability of power for makeup water pumps till 17.6.2017 has not been considered as one of the reasons of delay in achieving ‘Commissioning full load’ of unit-III as the Petitioner had been able to achieve ‘Commissioning full load’ of unit-I and Unit-II before 17.6.2017 i.e date of availability of power for makeup water pumps, may be by some alternate arrangement. Similarly, non-availability of power for make-up pump till 17.6.2017 has not been considered as one of the reasons for further delay beyond 183 days condoned already till previous milestone activities.

72. The scheduled COD of Unit-III was 25.5.2017 and the actual COD is 15.9.2018 thereby leading to a delay of 478 days. The Petitioner has attributed the further delay between the ‘Commissioning full load’ and ‘COD’ on account of Villagers resistance towards acquiring the land for Northern Side Railway siding and Water reservoir for Lagoon-2. We have, in paras 44 to 46 of this order, not permitted/ condoned the delay due to villagers’ resistance in Northern Side Railway siding and Water reservoir for Lagoon-2 and therefore, the said period has not been condoned for Unit-III of the generating station. Accordingly, the delay of only 183 days till actual COD of the Unit-III has been condoned, as against the actual delay of 478 days in achieving COD of Unit-III.

73. Accordingly, the time overrun allowed (against the actual time overrun) for Units-I to III and the schedule COD (reset) for the purpose of computation of IDC due to time overrun, is summarized as under:

Units	SCOD as per IA	Actual COD	Time Overrun considering SCOD (in days)	Time Overrun allowed (in days)	SCOD (reset) for IDC & IEDC computation
I	25.5.2016	31.7.2017	432	269	18.2.2017
II	25.11.2016	31.12.2017	401	287	8.9.2017
III	25.5.2017	15.9.2018	478	183	24.11.2017



## Capital Cost

74. Regulation 9(2) of the 2014 Tariff Regulations provides as under:-

*“The Capital cost of a new project shall include the following:*

- (a) The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- (b) Interest during construction and financing charges, on the loans*
  - (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*
- (c) Increase in cost in contract packages as approved by the Commission;*
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;*
- (e) Capitalized Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;*
- (f) Expenditure on account of additional capitalization and de-capitalization determined in accordance with Regulation 14 of these regulations;*
- (g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and*
- (h) Adjustment of any revenue earned by the transmission licensee by using the assets before COD.”*

75. The IA of the project is based at SBI cap appraisal at 4<sup>th</sup> quarter 2011 Price level as under:

- i. Estimated cost of ₹15166.19 crore including IDC & FC of ₹2487.67 crore and WCM of ₹445.77 crore
- ii. Indicative estimated completed cost of ₹16934.65 crore including IDC & FC of ₹2654.84 crore and WCM of ₹460.06 crore

## Impact of time overrun on IDC and IEDC

76. As stated above, out of the delay of 432 days in the COD of Unit-I, 401 days delay in the COD Unit-II and 478 days delay in the COD Unit-III of the generating station, time overrun of 163 days, 114 days and 295 days has been disallowed for Unit-I, Unit-II and Unit-III respectively. Hence, the total delay of total 269 days for Unit-I, 287 days for Unit-II and 183 days for Unit-III has been condoned. Consequent



upon this, the reduction in the IDC and IEDC has been dealt with in subsequent paragraphs.

### Initial Spares

77. Regulation 13 of the 2014 Tariff Regulations provides as under:

*“13. Initial Spares: Initial spares shall be capitalized as a percentage of the Plant and Machinery cost up to cut-off date, subject to following ceiling norms:*

*(a) Coal-based/lignite-fired thermal generating stations - 4.0%*

*(b) Gas Turbine/Combined Cycle thermal generating stations - 4.0%*

*Provided that:*

*i. where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:*

*iv. for the purpose of computing of initial the cost spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the break-up of head wise IDC & IEDC in its tariff application.”*

78. The COD of the generating station is 15.9.2018 and accordingly the cut-off date of the generating station is 31.3.2021. The Petitioner in Form-5B of the amended petition has not furnished the details of initial spares and has submitted that it is included in the respective packages. Hence, the Petitioner is directed to furnish the total amount of initial spares, after bifurcation of the amounts for different packages, at the time of truing-up of tariff of the generating station.

### Infirm power

79. The total construction & pre-commissioning expenses as per IA furnished by the Petitioner in Form-5B of the amended petition is ₹9882.74 lakh and total expenditure as on COD of the Unit-III of the generating station is ₹37597.59 lakh. The Petitioner has not furnished the details of infirm power and the revenue earned from sale of infirm power. The Petitioner in Form-5B, under the head start-up fuel, has submitted that the cost has been included in the Erection Testing and



Commissioning cost. Accordingly, the Petitioner is directed to furnish the details of infirm power injected in the grid by Units-I to III till COD and the revenue earned from sale of infirm power, excluding fuel cost, and the details of the fuel used from synchronization till COD at the time of truing up of tariff of the generating station.

#### **Liquidated Damages**

80. The Petitioner in the amended petition has not furnished the details of Liquidated Damage recovered from the contractors. Hence, the Petitioner is directed to submit, amongst others, the details of LD, if any, recovered, till COD at the time of truing up of tariff of the generating station.

#### **Additional Capital Expenditure**

81. Regulations 14 (1) of the 2014 Tariff Regulations, provides as under:

*“14.(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

- (i) Un-discharged liabilities recognized to be payable at a future date;*
- (ii) Works deferred for execution;*
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;*
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and*
- (v) Change in law or compliance of any existing law:*

*Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.*

82. The Petitioner in Form-9A of the amended petition has claimed the year wise statement of the actual and Projected additional capital expenditure from 31.7.2017(COD of Unit-I) to 31.3.2019 as under:



(₹ in lakh)

	2017-18	2017-18	2018-19	2018-19
	31.7.2017 (COD of Unit-I) to 30.12.2017	31.12.2017 (COD of Unit-II) to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 (COD of Unit-III) to 31.3.2019
Additional Capital Expenditure on cash basis (excluding discharges)	20836.62	8237.82	39246.17	12525
IDC included in above	1082.71	369.27	1508.74	-
Additional capital expenditure (excluding IDC and discharges)	19753.92	7868.55	37737.43	12525

83. The Petitioner has claimed additional capital expenditure under Regulation 14(1)(i), 14(1)(ii) and 14(1)(iii) of the 2014 Tariff Regulations. Since the claims of the Petitioner for additional capital expenditure form part of the original scope of work of the Project and falls within the provisions of the aforesaid provisions of the Regulations, the claim of the Petitioner is allowed.

#### **Railway augmentation deposit works**

84. The Petitioner has claimed cost of ₹94600.00 lakh towards Railway infrastructure augmentation and has submitted that as per Policy of the Ministry of Railways, GOI dated 10.12.2012, the Petitioner has opted for Capacity Augmentation (Doubling/ Third line/ Fourth line, etc.) with funds provided by customers. The Petitioner has pointed out that as per the option, Railway owns and operates the said project and in order to facilitate its timely execution, funds are provided to Railways by developers. It has submitted that to meet the coal requirement (of 13.1 MMTPA approx.) of the generating station, the doubling of Hotgi-Bijapur-Gadag line was approved by the NTPC Board under the Customer funding model of the Ministry of Railways Policy. Accordingly, the Petitioner has submitted that it has initially paid an amount of ₹400 crore to South Western Railway (SWR) on 11.4.2014. The Petitioner has stated that the cost of project based on current estimates is ₹94600.00 lakh as per communication of the Railway





Ministry. The Petitioner has submitted that the entire amount has been paid by the Petitioner to SWR for ensuring seamless coal rake transportation to the generating station. The Petitioner has, therefore, requested the Commission to allow the said expenditure towards transportation on coal, in the capital cost of the Project, for the purpose of tariff. It has submitted that the rebate offered by Railways in the freight bills shall be passed on to the beneficiaries, in the fuel transportation cost of the Project.

85. The Respondents TANGEDCO, MESCOM, BESCOM & HESCOM have submitted that the Commission in its order dated 15.2.2016 in Petition No.59/MP/2015 had considered the prayer of the Petitioner seeking in-principle approval to consider the expenditure incurred through the Indian Railways for timely completion of rail connectivity and/or capacity augmentation of rail infrastructure required for transportation of coal (as per Railway Board Policy dated 10.12.2012) in the capital cost of power projects for the purpose of tariff and had rejected the same. Accordingly, the Respondents have submitted that the present claim of the Petitioner may be rejected.

86. Respondent CESC has submitted that the expenditure is not covered under any of the provisions of the 2014 Tariff Regulations. It has submitted that the same would pose a huge tariff shock to the end consumers. The Respondent has also submitted that the Petitioner has not obtained any consent from the beneficiaries and the matter was not raised by the Petitioner in any forum and was never discussed with the beneficiaries, prior to entering into agreement with Railways.

87. Respondent KSEB has submitted that the claim of the Petitioner for Rail infrastructure may be rejected as this work is not covered under the original scope



of work of the Project and the Petitioner has also not sought any consent of the beneficiaries before making such investment.

88. The Petitioner in its rejoinder has submitted that the funds given to Indian Railway is as per the Railway Board Policy dated 10.12.2012 and hence the same may be allowed in the capital cost and the rebate offered by Indian Railways in freight bills shall be passed on to the beneficiaries in the fuel transportation cost of the Power Project.

89. We have considered the matter. In order to ensure timely availability of rail infrastructure for supply of coal to project of the Petitioner, the Board of Petitioner Company had decided to undertake the implementation of the Rail infrastructure projects associated with the upcoming Kudgi Power Project in terms of the Policy of the Ministry of Railway dated 10.12.2012. It is pertinent to mention that the Petitioner had earlier filed Petition No. 59/MP/2015 seeking in-principle approval for considering the expenditure incurred through the Indian Railways for timely completion of rail connectivity and/ or capacity augmentation of rail infrastructure required for transportation of coal (as per Railway Board Policy dated 10.12.2012) in the capital cost of power projects for the purpose of tariff. It had also submitted, amongst others, that as per the Railway Board Policy dated 10.12.2012, an amount of ₹902.57 crore (₹400 crore for Doubling of Hotigi-Bijapur-Gadag line, ₹250 crore for Flyover at Bakthiyarpur including 3rd line and surface triangle, ₹140 crore for Electrification of Manpur-Tilaiya-Bakthiyarpur line and ₹112.57 crore for Gauge Conversion of balgona-Kotwa section) has been deposited with Railways under Customer Funding Model to facilitate seamless transportation of coal rakes for its upcoming Super Thermal Power Projects at Kudgi, Barh Stagell



and Kotwa. However, the Commission vide its order dated 15.2.2016 rejected the prayer of the Petitioner and held as under:

*“6. We have perused the said order dated 29.7.2010. In our view, the said order does not support the case of the Petitioner. It is not mandatory for the Petitioner to participate in the scheme under the Customer Funding Model as per the Policy of Ministry of Railways. As per the Policy, the fund provided by NTPC shall be refunded by Railways through rebate in the freight which may be up to 7% of the amount invested every year. Further, NTPC will receive interest on the funds provided by it to Railways at a rate equal to prevailing rate of dividend payable by Railways to the general exchequer.*

*7. In our view, the request of the Petitioner to capitalize of such expenditure on funding provided to Railways in the capital cost of the power projects cannot be allowed. However, NTPC may retain the rebate in freight charges in consideration of the investment made by NTPC. It is, however, clarified that beneficiaries will be charged for the normal freight charges in tariff without considering the rebate in freight charges to NTPC.”*

90. It is further noticed that the Petitioner had also not obtained the consent of any of the beneficiaries prior to such huge expenditure being incurred by it. In this background and in the light of the aforesaid decision, we are not inclined to allow the said expenditure claimed by the Petitioner towards Railway augmentation deposit work. It is however made clear that the Petitioner shall retain the rebate in freight charges in consideration of the investment made by the Petitioner. It is, also clarified that beneficiaries will be charged for the normal freight charges in tariff without considering the rebate in freight charges to the Petitioner.

#### **Environmental Norms**

91. The Petitioner has submitted that the Ministry of Environment Forests & Climate Change (MOEF&CC), GOI vide Notification dated 7.12.2015 has notified the Environment (Protection) Amendment Rules, 2015, wherein the emission norms relating to SPM, NOx, SOx etc. have been tightened further. It has submitted that in order to comply with the revised norms of MOEF&CC, the Petitioner has to modify/install various systems. The Petitioner has submitted that it has vide Notification of Award (NoA) dated 31.7.2018 already awarded the Flue Gas



Desulphurisation (FGD) System Package for the Project and the cost for supply and installation of Emission Control System (ECS) and other equipment's for the Project is to the tune of ₹721.28 crore, which is expected to be progressively incurred with in a contract period of 45 months from the date of award. Accordingly, the Petitioner has prayed the Commission may allow the additional capitalization on mandatory installation of ECS under change in law. It has also prayed that the Commission may allow relaxed norms for Auxiliary Power Consumption and O&M charges for this Project by exercise of the 'Power to Relax' under the 2014 Tariff Regulations, as and when such equipment/ system are commissioned for Emission Control Works.

92. The matter has been considered. MOEFCC, GOI vide its Notification dated 7.12.2015 has notified the Environment (Protection) Amendment Rules, 2015 amending the Environment (Protection) Act, 1986. Through the amendment, the existing/applicable environmental norms for all existing, as well as future Thermal Power Projects. The Petitioner has submitted that the MOEFCC Notification is a 'Change in law' event and the Petitioner is required to comply with the revised norms prescribed by the MOEFCC Notification and install Emission Control System (ECS) and carry out major capital works/modifications for it to be able to operate the projects and supply power to the beneficiaries. It is observed that the Petitioner had filed Petition No.98/MP/2017 (NTPC V UPPCL & ors) seeking approval of expenditure on installation of various ECS, for compliance of MOEF&CC Notification dated 7.12.2015 mandating compliance with revised Environmental norms for Thermal Power Stations and the Commission by its order dated 20.7.2018 observed the following:



“44. In our view, the MOEFCC Notification dated 7.12.2015 requiring the thermal generating stations to implement the revised environmental norms amounts to ‘Change in Law’ in accordance with the 2014 Tariff Regulations as well as the Policy directions issued by the MoP under section 107 of the Act.

xxx

49. Based on the guidelines and operational parameters decided by CEA, the Commission shall undertake prudence check and grant the tariff for the capital and operational expenditure on ECS in respect of the generating stations regulated by the Commission. The Commission may, if required, specify detailed guidelines in this regard. 50. The treatment of shut down period required for installation and commissioning of ECS at the projects of the Petitioner shall be decided by the Commission consequent upon preparation of such schedule by CEA. The detailed guidelines referred to in para 49 above will address this aspect also. The Petitioner may thereafter approach the Commission with an appropriate Petition in this regard.”

93. The prayer of the Petitioner is disposed of in terms of the above. Accordingly, the cost of expenditure on installation of ECS shall be considered separately after submission of details of the actual expenditure incurred and the consequential effect on operational norms and the O&M expenses of the generating station.

#### **Actual Capital Cost as on COD of Unit-I**

94. The details of the capital cost claimed by the Petitioner as on COD of Unit-I is as under:

	(₹ in lakh)
Amount	
Gross Block (as per IND AS) as on COD of Unit-I	666570.14
Less: Gross Block (as per IND AS) for Kudgi-II, including above	5757.03
Gross Block (as per IND AS) for the generating station as on COD of Unit-I	<b>660813.11</b>
Less: IND AS adjustment to Gross Block the generating station as on COD of Unit-I	88.24
Gross Block as per IGAAP (i.e. historical cost basis), the generating station, as on COD of Unit-I (on accrual basis)	<b>660724.87</b>
Less: Un-discharged liabilities, including above	58127.02
<b>Gross Block as per IGAAP for the generating station, as on COD of Unit-I (on cash basis)</b>	<b>602597.85</b>
Add: Railway augmentation deposit works	94600.00
Add: ERV charged to revenue	(-)1753.00
Add: Inter-unit transfer out before COD	2157.00
Add: Notional IDC	1251.00
Add: Unamortised Finance Charges	616.00
Less: Rounding-off differences	0.01
<b>Capital cost claimed as on COD of Unit-I</b>	<b>699468.84</b>





95. The Auditor certified capital cost, on accrual as well as on the cash basis, amounting to ₹660724.87 lakh and ₹602597.85 lakh respectively, including IDC & FC of ₹87405.15 lakh and FERV of ₹8629.87 lakh, as on COD of Unit-I. Accordingly, the hard cost component of capital cost as on COD of Unit-I works out to ₹564689.85 lakh, on accrual basis, and ₹506562.83 lakh, on cash basis. Also, the hard cost (on cash and accrual basis) includes IEDC of ₹34341.35 lakh as on COD of Unit-I, which includes an expenditure of ₹6.92 lakh towards contingency. Since, the 2014 Tariff Regulations do not provide for admissibility of any expenditure towards contingency, the amount of ₹6.92 lakh is not allowed. Considering the details of IEDC submitted in the petition, the allowable IEDC (after accounting for depreciation capitalized and forming part of capital cost upto COD) works out to ₹27293.89 lakh. Accordingly, the hard cost considered for the purpose of tariff as on COD of Unit-I works out to ₹499515.37 lakh, after accounting for corresponding un-discharged liabilities of ₹58127.02 lakh.

96. We now proceed to examine the claim of the Petitioner with respect to IDC & FC, FERV, Notional IDC, FERV charged to revenue, un-amortized finance cost, inter-unit transfer of assets before COD and deposit towards railway augmentation work as under:

a) **IDC & FC**-The Petitioner has claimed IDC & FC amounting to ₹87405.15 lakh as on COD of Unit-I. However, considering the details of draws, repayments, rate of interest applicable to each loan and disallowed time overrun of 163 days, the allowable IDC and FC as on COD of Unit-I works out to ₹76020.20 lakh. Accordingly, the IDC & FC to be deducted as on COD of Unit-I works out to ₹11384.95 lakh.

b) **FERV**- The Petitioner has claimed FERV on loan amounting to ₹8629.87 lakh as on COD of Unit-I. Considering the details of draws, repayments and



exchange rates, the claim is found to be in order and accordingly allowed for the purpose of tariff.

c) **Notional IDC**- The Petitioner has claimed Notional IDC amounting to ₹1251.00 lakh as on COD of Unit-I. There is no provision under the 2014 Tariff Regulations for allowing Notional IDC. However, clause 2(b) of Regulation 9 of the 2014 Tariff Regulations provides for allowance of Normative IDC (over and above actual IDC). Accordingly, considering the quarterly debt-equity position corresponding to actual cash expenditure, allowable Normative IDC (over and above actual IDC) works out to ₹763.08 lakh as on COD of Unit-I.

d) **FERV charged to revenue** - The Petitioner has claimed (-)₹1753.00 lakh towards FERV charged to revenue [(-)₹1041.97 lakh pertaining to loan FERV charged to revenue post 1.4.2016 and (-)₹711.02 lakh pertaining to short-term FERV charged to revenue pertaining to package FERV], as on COD of Unit-I. On perusal of the statement showing the details of FERV calculations, it is observed that FERV amounting to (-)₹1041.97 lakh was charged to revenue prior to COD. As per consistent methodology adopted by the Commission, FERV charged to revenue upto COD is allowed as part of capital cost for the purpose of tariff. As such an amount of (-)₹1752.99 lakh is allowed under this head.

e) **Un-amortized Finance Cost** - The Petitioner has claimed ₹616.00 lakh as un-amortized bond issue expenses corresponding to loan drawn after IND AS. The Petitioner has submitted that in the erstwhile IGAAP, loan issue expenses paid upfront were accounted as and when incurred and the same used to be claimed as part of IDC. However, under IND AS, the upfront bond issue expenses are to be amortized over the tenure of loan resulting in part capitalization of IDC. It appears from the submissions of the Petitioner that the claim under this head is on account of differential treatment of upfront fees under IND AS and IGAAP. Further, the claim is over and above the Auditor certified (cash) capital cost (as per IGAAP) amounting to ₹602597.85 lakh. Since, the Auditor certified cash capital cost of ₹602597.85 lakh is as per IGAAP, any further adjustment to the same on account of IND AS adjustment is not justifiable. Accordingly, the Petitioner's claim under this



head has been ignored for the purpose of tariff. This is subject revision based on truing up exercise.

f) **Inter-unit transfer out of asset upto COD** - The Petitioner has claimed an amount of ₹2157 lakh as on COD of Unit-I towards inter-unit transfer of assets prior to COD of Unit-I. The Petitioner in its justification has not furnished any details. Hence, the claim of the Petitioner is not allowed. However, the Petitioner is directed to submit the details of the assets claimed under inter-unit transfer at the time of truing up exercise and same would be considered in accordance with law.

g) The rounding off gap amounting to (-) 0.01 lakh has been considered for the purpose of tariff.

97. In view of the above, the allowable capital cost as on COD of Unit-I works out to ₹583175.52 lakh.

**Additional Capital Expenditure for the period from COD of Unit-I to COD of Unit-II:**

98. The Petitioner has claimed additional capital expenditure amounting to ₹36657.69 lakh for the period from COD of Unit-I till COD of Unit-II. The Petitioner's claim has been reconciled as under:

	(₹ in lakh)
	<b>2017-18 (31.7.2017 to 30.12.2018)</b>
Closing Gross Block as per IGAAP pertaining to Kudgi-I *	1038324.43
Opening Gross Block as per IGAAP pertaining to Kudgi-I *	660724.87
<b>Additional capital expenditure as per IGAAP pertaining to Kudgi-I</b>	<b>377599.56</b>
Less: Exclusion of capitalization pertaining to Unit-II	354664.85
<b>Net additional capital expenditure claimed (on accrual basis) including IDC of ₹1082.71 lakh</b>	<b>22934.71</b>
Less: Un-discharged liabilities included above	2098.09
Add: Discharges of liabilities (against allowed assets/works)	15821.07
<b>Net additional capital expenditure claimed (on cash basis) including IDC of ₹1082.71 lakh</b>	<b>36657.69</b>

\* Duly certified by the auditor

99. The Petitioner has not furnished the auditor certificate in respect of the additional capital expenditure claimed and is therefore directed to furnish the



Auditor certified statement showing reconciliation of additional capital expenditure claimed with additional capital expenditure as per audited Financial Statement at the time of truing up exercise. The additional capital expenditure allowed above, excludes IDC and discharges of un-discharged liabilities. In line with the consistent methodology adopted by the Commission, the IDC corresponding to the additional capital expenditure and discharges of liabilities corresponding to already admitted assets/works has been considered for the purpose of tariff. Accordingly, the entire additional capital expenditure claim of the Petitioner amounting to ₹36657.69 lakh has been considered for the purpose of tariff.

#### **Actual Capital Cost as on COD of Unit-II**

100. The details of the capital cost claimed by the Petitioner as on COD of Unit-II is as under:

	(₹ in lakh)
Gross Block (as per IND AS) as on COD of Unit-II	1045990.56
Less: Gross Block (as per IND AS) for Kudgi Stage-II, included above	5757.03
<b>Gross Block (as per IND AS) for the project as on COD of Unit-II</b>	<b>1040233.53</b>
Less: IND AS adjustment to Gross Block, pertaining to Kudgi, as on COD of Unit-II	1909.10
<b>Gross Block as per IGAAP (i.e. historical cost basis), for the generating station as on COD of Unit-II (on accrual basis)</b>	<b>1038324.43</b>
Less: Un-discharged liabilities included above	67682.06
<b>Gross Block as per IGAAP for the generating station, as on COD of Unit-II (on cash basis)</b>	<b>970642.37</b>
Add: Railway augmentation deposit works	94600.00
Add: ERV charged to revenue	(-)1984.00
Add: Inter-unit transfer out before COD	2157.00
Add: Notional IDC	1251.00
Add: Un-amortised Finance Charges	1536.00
Less: Rounding-off differences	0.01
<b>Capital cost claimed as on COD of Unit-II</b>	<b>1068202.36</b>

101. The capital cost certified by Auditor, on accrual and cash basis, amounting to ₹1038324.43 lakh and ₹970642.37 lakh respectively as on COD of Unit-II, includes IDC & FC of ₹135655.50 lakh and FERV of ₹13580.98 lakh. Accordingly, the hard



cost component of capital cost as on COD of Unit-II works out to ₹889087.95 lakh, on accrual basis, and ₹821405.89 lakh, on cash basis. The hard cost (on cash as well as accrual basis) includes IEDC amounting to ₹51138.96 lakh as on COD of Unit-II, which includes expenditure of ₹6.92 lakh towards contingency. It is pertinent to mention that the 2014 Tariff Regulations do not provide for admissibility of any expenditure towards contingency and accordingly the amount of ₹6.92 lakh has not been allowed. Considering the details of IEDC submitted in the Petition, the allowable IEDC (after accounting for depreciation capitalized and forming part of capital cost upto COD) has been worked out as ₹45059.49 lakh. Accordingly, the hard cost considered for the purpose of tariff as on COD of Unit-II is ₹815326.42 lakh, after accounting for corresponding un-discharged liabilities amounting to ₹67682.06 lakh.

102. We now proceed to examine, the Petitioner's claim of IDC & FC, FERV, Notional IDC, FERV charged to revenue, un-amortized finance cost, inter-unit transfer of assets before COD and deposit towards railway augmentation work as under:

(a) **IDC & FC** - The Petitioner has claimed IDC & FC of ₹135655.50 lakh as on COD of Unit-II. However, considering the details of drawls, repayments, rate of interest applicable to each loan and disallowed time overrun of 114 days, the allowable IDC & FC works out to ₹121570.77 lakh as on COD of Unit-II. Accordingly, the IDC & FC to be deducted as on COD of Unit-II is to ₹14084.73 lakh.

(b) **FERV** - The Petitioner has claimed FERV on loan amounting to ₹13580.98 lakh as on COD of Unit-II. Considering the details of drawls, repayments and exchange rates, the claim is found to be in order and accordingly allowed for the purpose of tariff.





(c) **Notional IDC** - The Petitioner has claimed Notional IDC amounting to ₹1251.00 lakh as on COD of Unit-II. As stated above, there is no provision under the 2014 Tariff Regulations for allowing Notional IDC. However, Regulation 9(2)(b) of the 2014 Tariff Regulations provides for allowance of Normative IDC (over and above actual IDC). Accordingly, considering the quarterly debt-equity position corresponding to actual cash expenditure, the allowable Normative IDC (over and above actual IDC) works out to ₹987.45 lakh as on COD of Unit-II.

(d) **FERV charged to revenue** - The Petitioner has claimed (-) ₹1984.00 lakh towards FERV charged to revenue [(-) ₹1155.96 lakh pertaining to loan FERV charged to revenue post 1.4.2016 and (-) ₹828.13 lakh pertaining to short-term FERV charged to revenue pertaining to package FERV, as on COD of Unit-II. It is observed from the details of FERV calculations the amount of (-) ₹1156.96 lakh was charged to revenue prior to the COD. As per consistent methodology adopted by the Commission, FERV charged to revenue upto COD is allowed as part of capital cost for the purpose of tariff. Accordingly, the amount of (-) ₹1984.09 lakh is allowed under this head.

(e) **Un-amortized Finance Cost** - The Petitioner has claimed ₹1536.00 lakh as the un-amortized bond issue expenses corresponding to loan drawn after IND AS. The Petitioner has submitted that in the erstwhile IGAAP, loan issue expenses paid upfront were accounted as and when incurred and the same used to be claimed as part of IDC. However, under IND AS, the upfront bond issue expenses are to be amortized over the tenure of loan resulting in part capitalization of IDC. It appears from the submissions of the Petitioner that the claim is on account of differential treatment of upfront fees under IND AS and IGAAP. Further, the claim under this head is over and above the auditor certified (cash) capital cost (as per IGAAP) amounting to ₹970642.37 lakh. Since, the capital cost of ₹970642.37 lakh is as per IGAAP, any further adjustment to the same on account of IND AS adjustment is not justifiable. Accordingly, the Petitioner's claim under this head has been ignored for the purpose of tariff. This is however subject to truing up.



(f) **Inter-unit transfer out of asset upto COD** - The Petitioner has claimed an amount of ₹2157 lakh as on COD of Unit-II towards inter-unit transfer of assets prior to COD of Unit-II. The Petitioner in its justification has not furnished any details. Hence, the claim of the Petitioner is not allowed. However, the Petitioner is directed to submit the details of the assets claimed under inter-unit transfer at the time of truing up exercise and same would be considered in accordance with law.

(g) The rounding off gap amounting to (-) 0.01 lakh has been considered for the purpose of tariff.

103. In view of the above, the allowable capital cost as on COD of Unit-II works out to ₹949481.51 lakh.

**Additional Capital Expenditure for the period from COD of Unit-I to COD of Unit-II:**

102. The Petitioner has claimed additional capital expenditure amounting to ₹18745.59 lakh for the period from COD of Unit-II to 31.3.2018 and ₹45073.60 lakh for the period from 1.4.2018 to COD of Unit-III/Station. The Petitioner's claim has been reconciled as shown below:

	(₹ in lakh)	
	2017-18 (31.12.2017 to 31.3.2018)	2018-19 (1.4.2018 to 14.9.2018)
Closing Gross Block as per IGAAP pertaining to Kudgi-I		
Opening Gross Block as per IGAAP pertaining to Kudgi-I		
Additional capital expenditure as per IGAAP pertaining to Kudgi-I	21377.32	-
Less: Exclusion of capitalization pertaining to Unit-III	12200.00	-
<b>Net additional capital expenditure claimed (on accrual basis)</b> (includes IDC amounting to Rs.369.27 lakh and Rs.1508.74 lakh for the period from COD of Unit-II to 31.3.2018 and from 1.4.2018 to COD of Unit-III/Station)	<b>9177.32</b>	<b>43861.48</b>
Less: Un-discharged liabilities included above	939.50	4615.32
Add: Discharges of liabilities (against allowed assets/works)	10507.77	5827.43
<b>Net Additional Capital Expenditure claimed (on cash basis)</b>	<b>18745.59</b>	<b>45073.60</b>



103. The net additional capital expenditure claimed as above includes IDC amounting to Rs.369.27 lakh and Rs.1508.74 lakh for the period from COD of Unit-II to 31.3.2018 and from 1.4.2018 to COD of Unit-III/Station respectively.

104. The Petitioner has not furnished the auditor certificate in respect of the additional capital expenditure claimed and is therefore directed to furnish the Auditor certified statement showing reconciliation of additional capital expenditure claimed with additional capital expenditure as per audited Financial Statement at the time of truing up exercise. The additional capital expenditure allowed above, excludes IDC and discharges of un-discharged liabilities. As per consistent methodology adopted by the Commission, the IDC corresponding to the additional capital expenditure and discharges of liabilities corresponding to already admitted assets/works has been considered for the purpose of tariff. Further, on perusal of Form-9A in respect of statement showing details of additional capital expenditure claimed during the period from COD of Unit-II to 31.3.2018, it is observed that the additional capital expenditure claimed during this period includes an amount of ₹7.77 lakh towards contingency payment. As stated earlier, the expenditure towards contingency has not been allowed for the purpose of tariff and the same is subject to revision at the time of truing-up. Accordingly, the following additional capital expenditure has been considered for the purpose of tariff:

2017-18 (31.12.2017 to 31.3.2018)	2018-19 (1.4.2018 to 14.9.2018)
18737.81	45073.60

**Actual Capital Cost as on COD of Unit-III/ generating station (15.9.2018)**

105. The details of the capital cost claimed by the Petitioner as on COD of Unit-III/ generating station is as under:



(₹ in lakh)	
Gross Block (as per IND AS) as on COD of Unit-III	1489362.13
Less: Gross Block (as per IND AS) for Kudgi Stage-II, included above	5757.03
<b>Gross Block (as per IND AS) as on COD of Unit-III</b>	<b>1483605.10</b>
Less: IND AS adjustment to Gross Block as on COD of Unit-III	3765.36
<b>Gross Block as per IGAAP (i.e. historical cost basis), as on COD of Unit-III (on accrual basis)</b>	<b>1479839.74</b>
Less: Un-discharged liabilities included above	117292.38
<b>Gross Block as per IGAAP as on COD of Unit-III (on cash basis)</b>	<b>1362547.36</b>
Add: Railway augmentation deposit works	94600.00
Add: ERV charged to revenue	15025.00
Add: Inter-unit transfer out before COD	2157.00
Add: Notional IDC	1322.00
Add: Unamortised Finance Charges	1633.00
Less: Rounding-off differences	0.05
<b>Capital cost claimed as on COD of Unit-III/ generating station</b>	<b>1477284.31</b>

106. The auditor certified capital cost certified on accrual and cash basis amounting to ₹1479839.74 lakh and ₹1362547.36 lakh respectively as on COD of Unit-III, which includes IDC & FC of ₹195885.91 lakh and FERV of ₹49822.39 lakh. Accordingly, the hard cost component of capital cost as on COD of Unit-III works out to ₹1234131.39 lakh on accrual basis and ₹1116839.01 lakh on cash basis. Further, the hard cost on accrual basis and on cash basis includes IEDC amounting to ₹92289.90 lakh and ₹60988.97 lakh respectively, as on COD of Unit-III, which includes expenditure of ₹46.76 lakh towards contingency. Since the 2014 Tariff Regulations do not provide for admissibility of any expenditure towards contingency, the amount of ₹46.76 lakh is not allowed. Considering the details of IEDC, the allowable IEDC (after accounting for depreciation capitalized and forming part of capital cost upto COD) works out to ₹65206.72 lakh on accrual basis and ₹48610.94 lakh on cash basis. Accordingly, the hard cost considered for the purpose of tariff as on COD of Unit-III works out to ₹1104460.98 lakh, after accounting for corresponding un-discharged liabilities amounting to ₹102587.23 lakh (total liability as on COD of Unit-III (₹117292.38 lakh) *minus* un-discharged liabilities corresponding to disallowed IEDC (₹14705.15 lakh)).



107. We now proceed to examine the Petitioner's claim of IDC & FC, FERV, Notional IDC, FERV charged to revenue, un-amortized finance cost, inter-unit transfer of assets before COD and deposit towards railway augmentation work as under:

a) **IDC & FC**- The Petitioner has claimed IDC & FC amounting to ₹195885.91 lakh as on the COD of Unit-III. However, considering the details of drawls, repayments, rate of interest applicable to each loan and disallowed time overrun of 295 days, the allowable IDC & FC works out to ₹152614.07 lakh. Accordingly, IDC & FC to be deducted as on the COD of Unit-III is ₹43271.84 lakh.

b) **FERV** - The Petitioner has claimed FERV on loan amounting to ₹49822.39 lakh as on COD of Unit-III. Considering the details of drawls, repayments and exchange rates, the claim is found to be in order and accordingly allowed for the purpose of tariff.

c) **Notional IDC** - The Petitioner has claimed Notional IDC amounting to ₹1322.00 lakh as on the COD of Unit-III. As stated, there is no provision under the 2014 Tariff Regulations for allowing Notional IDC. However, Regulation 9(2)(b) of the 2014 Tariff Regulations provides for allowance of Normative IDC (over and above actual IDC). Accordingly, considering the quarterly debt-equity position corresponding to actual cash expenditure, the allowable Normative IDC (over and above actual IDC) works out to ₹1120.23 lakh as on COD of Unit-III of the generating station.

d) **FERV charged to revenue** - The Petitioner has claimed an amount of ₹15025.00 lakh towards FERV charged to revenue (₹8952.21 lakh pertaining to loan FERV charged to revenue post 1.4.2016, ₹3572.84 lakh pertaining to loan FERV treated as borrowing cost drawn after 1.4.2016 transferred to revenue and ₹2499.66 lakh pertaining to short-term FERV charged to revenue pertaining to package FERV) as on the COD of Unit-III. On perusal of the statement showing the details of FERV calculations, it is observed that FERV amounting to ₹8952.21 lakh was charged to revenue prior to the COD. As per consistent methodology adopted by the Commission, FERV charged to revenue upto COD is allowed as part of capital cost for the purpose of tariff. Further, on perusal of the statement showing IDC capitalized upto COD along with Form-5B, it is observed that ₹3572.84 lakh pertaining to loan FERV treated as borrowing cost already forms part of auditor certified cash capital cost ₹1362547.36 lakh as per IGAAP (on cash basis). As such, any further adjustment of the same over and above auditor certified (cash) capital cost (as per IGAAP) is unjustifiable. Accordingly, the claim of the Petitioner under this head has been ignored for the purpose of tariff, subject to truing up. As





such, out of the Petitioner's claim of ₹15025.00, an amount of ₹11451.87 lakh is allowed under this head.

e) **Un-amortized Finance Cost** - The Petitioner has claimed ₹1633.00 lakh as un-amortized bond issue expenses corresponding to loan drawn after IND AS. The Petitioner has submitted that in the erstwhile IGAAP, loan issue expenses paid upfront were accounted as and when incurred and the same used to be claimed as part of IDC. However under IND AS, the upfront bond issue expenses is to be amortized over the tenure of loan resulting in part capitalization of IDC. It appears from the submissions of the Petitioner that the claim is on account of differential treatment of upfront fees under IND AS and IGAAP. Further, the claim under this head is over and above the capital cost (as per IGAAP) amounting to ₹1362547.36 lakh and therefore any further adjustment to the same on account of IND AS adjustment is not justifiable. Accordingly, the Petitioner's claim under this head has not been considered for the purpose of tariff. This is however subject to truing up.

(f) **Inter-unit transfer out of asset upto COD** - The Petitioner has claimed an amount of ₹2157 lakh as on COD of Unit-I towards inter-unit transfer of assets prior to COD of Unit-I. The Petitioner in its justification has not furnished any details. Hence, the claim of the Petitioner is not allowed. However, the Petitioner is directed to submit the details of the assets claimed under inter-unit transfer at the time of truing up exercise and same would be considered in accordance with law.

(g) The rounding off gap amounting to (-) 0.05 lakh has been considered for the purpose of tariff.

108. In view of above, the allowable capital cost as on COD of Unit-III/Station is worked to ₹1319469.48 lakh.

**Projected Additional Capital Expenditure for the period from COD of Unit-III/ generating station to 31.3.2019**

109. The Petitioner has claimed projected additional capital expenditure amounting to ₹45225.00 lakh for the period from COD of Unit-III to 31.3.2019. The Petitioner's claim has been reconciled as shown below:

	(₹ in lakh)
	<b>2018-19</b> (15.9.2018 to 31.3.2019)
Net additional capital expenditure claimed (on accrual basis)	14400.00
Less: Un-discharged liabilities included above	1875.00



Add: Discharges of liabilities (against allowed assets/works)	32700.00
<b>Net additional capital expenditure claimed (on cash basis)</b>	<b>45225.00</b>

110. The Petitioner has not furnished the auditor certificate in respect of additional capital expenditure claimed and is therefore directed to furnish the auditor certified statement showing the reconciliation of additional capital expenditure claimed with additional capital expenditure as per audited financial statement at the time of truing up. The corresponding IDC details shall also be furnished at the time of truing up. The additional capital expenditure allowed above excludes IDC and discharges of un-discharged liabilities. In line with the consistent methodology adopted by the Commission, the IDC corresponding to the additional capital expenditure and discharges of liabilities corresponding to already admitted assets/works has been considered for the purpose of tariff. Accordingly, the entire additional capital expenditure claimed by the Petitioner for ₹45225.00 lakh has been considered for the purpose of tariff.

#### Capital Cost considered for the purpose of tariff

111. In view of above, the capital cost approved for the purpose of tariff for the period from COD of Unit-I till 31.3.2019 is as under:

(₹ in lakh)

	2017-18		2018-19	
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Opening Capital Cost	583175.52	949481.51	968219.32	1319469.48
Add: Additional capital expenditure	36657.69	18737.81	45073.60	45225.00
<b>Closing Capital Cost</b>	<b>619833.22</b>	<b>968219.32</b>	<b>1013292.92</b>	<b>1364694.48</b>
Average Capital Cost	601504.37	958850.41	990756.12	1342081.98

#### **Reasonableness of Capital Cost**

112. We now examine the reasonableness of capital cost of the generating station. The comparison of the said capital cost with the benchmark capital cost specified by the Commission is as under:



	(₹ in crore)
	Units- I, II & III (2400 MW)
Capital cost as on 31.3.2019 without IDC, FC, FERV & Hedging charges	11094.1985
Capital cost (Rs/MW)	4.62
Benchmark capital cost (December, 2011)	4.59

113. The hard cost of the project as on 31.3.2019 is ₹11094.1985 (₹4.62 crore/MW), which is higher than the benchmark cost of ₹4.59 crore/MW based on December, 2011 price level for 3 units of 800 MW, as specified by Commission vide its order dated 4.6.2012 for thermal power stations, with coal as fuel.

114. The Petitioner in Form-5B has submitted that the total estimated capital expenditure up to the cut-off date of the generating station is ₹16934.6509 crore, including IDC, FC, FERV & Hedging cost, which is the approved estimated completed cost. This is inclusive of IDC & FC of ₹2654.84 crore and WCM of ₹460.06 crore. Thus, the total cost of the generating station, excluding IDC & FC and WCM, as on the cut-off date, works out to ₹13819.75 crore, which is ₹5.76 crore/MW. The cut-off date of the generating station is 31.3.2021 and the projected hard cost till the cut-off date is ₹5.76 crore/MW. As such, there is a gap of 9 years and 3 months between December, 2011 and March, 2021. Considering this gap, the yearly escalation in the hard cost works out to 2.48% (approx). Since, the hard cost of the generating station as on the year 2018 is being compared to 2011 price level, the increase in the capital cost of the project appears to be competitive and reasonable.

### Debt-Equity Ratio

115. Regulation 19 of the 2014 Tariff Regulations provides as under:

*“19. Debt-Equity Ratio (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*



*Provided that:*

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.”*

116. Considering the details of cash expenditure and the net loan position as on the COD, the debt-equity ratio as on COD of Unit-I, Unit-II and Unit-III works out to 71.58:28.42, 73.24:26.76 and 69.79:30.21 respectively, which is within the normative debt-equity norm of 70:30. As such, debt-equity ratio of 71.58:28.42, 73.24:26.76 and 70:30 has been considered for the purpose of tariff as on COD of Unit-I, Unit-II and Unit-III respectively. Further, for the additional capital expenditure during the period from COD of Unit-I to COD of Unit-II and COD of Unit-II to COD of Unit-III, the debt-equity ratio of 71.58:28.42 and 73.24:26.76 and for the projected additional capital expenditure allowed from COD of Unit-III to 31.3.2019, the debt-equity ratio of 70:30 has been considered for the purpose of tariff. This is subject to truing up exercise in terms of Regulation 8 of the 2014 Tariff Regulations

### **Return on Equity**

117. Regulation 24 of the 2014 Tariff Regulations provides as under:

*“24. Return on Equity:*

- (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.*
- (2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:*

*Provided that:*

- i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:*



ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.”

118. Regulation 25 of the 2014 Tariff Regulations provides as under:

“25. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.”

119. The Petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate of 21.3416% (MAT Rate @ 18.5% plus surcharge @ 12% plus Education Cess @ 3%) and 21.5488% (MAT Rate @ 18.5% plus surcharge @ 12% plus Education Cess @ 4%) for the period from COD of Unit-I to 31.3.2018 and 2018-





19 respectively. This has been considered, subject to truing-up exercise. Return on equity has been computed as under:

	2017-18		2018-19	
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Normative Equity - Opening	165733.46	254065.95	259079.88	395840.85
Addition due to additional capital expenditure	10417.80	5013.94	12060.97	13567.50
Normative Equity - Closing	176151.26	259079.88	271140.85	409408.35
Normative Equity - Average	170942.36	256572.91	265110.37	402624.60
Base Rate for return on equity	15.500%	15.500%	15.500%	15.500%
Applicable Tax Rate	21.3416%	21.3416%	21.5488%	21.5488%
Rate of Return on Equity (Pre-tax)	19.705%	19.705%	19.758%	19.758%
Return on Equity	33684.19	50557.69	52380.51	79550.57

### Interest on Loan

120. Regulation 26 of the 2014 Tariff Regulations provides as under:

*“26. Interest on loan capital:*

*(1)The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*

*(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*

*(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.*

*(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

*(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*



(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing. (9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of the loan.”

121. Interest on loan has been worked out as mentioned below:

i) Gross normative loan corresponding to admissible capital cost works out to ₹417442.06 lakh as on COD of Unit-I, ₹695415.56 lakh as on COD of Unit-II and ₹923628.64 lakh as on COD of Unit-III/Station.

ii) The net opening loan (normative) as on COD of Unit-I is same as gross normative loan, the cumulative repayment of normative loan up to the previous year/period being nil.

iii) Depreciation allowed has been considered as (normative) repayments for respective periods.

iv) Average net loan has been calculated as average of opening and closing.

v) Weighted average rate of interest has been computed considering details of actual loan portfolio as submitted by the Petitioner, after adjusting IDC corresponding to allowable additional capital expenditure.

122. Necessary calculation for interest on loan is as under:

	2017-18		2018-19	
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Gross Normative Loan	417442.06	695415.56	709139.44	923628.64
Cumulative Repayment	-	12389.44	24269.48	46953.46
Net Normative Loan - Opening	417442.06	683026.12	684869.95	876675.18
Addition due to additional capital expenditure	26239.89	13723.88	33012.63	31657.50
Repayment of Normative Loan	12389.44	11880.04	22683.98	36788.71
Net Normative Loan - Closing	431292.51	684869.95	695198.61	871543.97

(₹ in lakh)



Normative Loan - Average	424367.29	683948.04	690034.28	874109.57
Weighted Average Rate of Interest	6.2418%	6.3473%	6.2980%	6.6987%
Interest on Loan	26488.27	43412.52	43458.53	58553.78

## Depreciation

123. Regulation 27 of the 2014 Tariff Regulations provides as under:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof. Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.



(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

124. The Petitioner has claimed depreciation considering weighted average rate of depreciation of 4.9138%, 5.0051%, 5.0032% and 5.0532% for the period from COD of Unit-I to COD of Unit-II, COD of Unit-II to 31.3.2018, 1.4.2018 to COD of Unit-III and from COD of Unit-III to 31.3.2019 respectively. Considering the rates of depreciation enclosed in the Appendix-III to the 2014 Tariff Regulations, the admissible weighted average rate of depreciation works out to 4.9138%, 4.9696%, 5.0041% and 5.0532% for the period from COD of Unit-I to COD of Unit-II, COD of Unit-II to 31.3.2018, from 1.4.2018 to COD of Unit-III and from COD of Unit-III to 31.3.2019 respectively and the same has been considered for the purpose of tariff. This is subject to truing-up. Accordingly, depreciation has been calculated as under:

	(₹ in lakh)			
	2017-18		2018-19	
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Average Capital Cost	601504.37	958850.41	990756.12	1342081.98
Weighted Average Rate of Depreciation	4.9138%	4.9696%	5.0041%	5.0532%
Depreciable Value	511912.48	833523.92	862239.06	1178432.34
Remaining Depreciable Value	511912.48	821134.48	837969.57	1131478.88
Depreciation for the period	12389.44	11880.04	22683.98	36788.71
Depreciation for the year (annualised)	601504.37	958850.41	990756.12	1342081.98
Cumulative depreciation (at the end of the year/period)	4.9138%	4.9696%	5.0041%	5.0532%



**Operation & Maintenance Expenses**

125. Regulation 29(1) (a) of the 2014 Tariff Regulations provides for the following O&M expense norms for coal based generating stations of 600 MW sets & above:

(₹ in lakh/MW)	
2017-18	2018-19
17.30	18.38

126. The annualised O&M expenses claimed by the Petitioner in Form-3A vide its affidavit dated 4.3.2019 based on above norms as on 31.3.2019 is as under:

		(₹ in lakh)	
2017-18		2018-19	2018-19
31.7.2017 (COD of Unit-I) to 30.12.2017	31.12.2017 (COD of Unit-II) to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 (COD of Unit-III) to 31.3.2019
<b>13840.00</b>	<b>27680.00</b>	<b>29408.00</b>	<b>44112.00</b>

127. The annualized O&M expenses claimed by the Petitioner as above is in order and hence allowed for the purpose of tariff

**Water Charges**

128. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

*“29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalization or consumption of stores and spares and renovation and modernization.”*

129. In terms of the above regulations, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the Petitioner. The Petitioner vide affidavit dated 4.3.2019 has furnished the water charges to be





allowed in tariff based on actual for the period from COD of Unit-I i.e. (31.07.2017) up to COD of the generating station(15.9.2018) and projections from station COD till 31.3.2019. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges furnished by the Petitioner is as under:

Description	Remarks
Type of Plant	Coal
Type of cooling water system	Closed Circuit Cooling System
Allocation of water for the generating station Annual water requirement per unit	5.2 TMC per annum 21900000 CuM
Rate of Water charges	As fixed by GOK from time to time for industrial usage. However, the present rate is Rs 3200 per MCFT
Water Charges for the period 31.7.2017 to 31.3.2018 ( <i>Rs in lakh</i> )	670.69
Water Charges for the period 1.4.2018 to 14.9.2018 ( <i>Rs in lakh</i> )	407.86

130. The Petitioner in the Form-3A of its affidavit dated 4.3.2019 has claimed water charges as under:-

2017-18		2018-19	2018-19
31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
1003.29	1003.29	891.43	891.43

131. The Petitioner has furnished the detail of type of plant, type of cooling water system, along with contracted quantum. However, the Petitioner has not furnished the Water agreement entered into with the State Govt. agency. The Petitioner has claimed water charges based on actual for the period from COD of Unit-I i.e. (31.7.2017) up to station COD i.e. (15.9.2018) and based on projections from station COD (i.e.15.9.2018) till 31.3.2019. Since, the water charges claimed by the Petitioner up to COD of the generating station are on actuals, the same is allowed for the period 2017-18 and 2018-19. However, the Petitioner is directed to furnish the details of actual water consumption along with the Water agreement at



the time of truing up of tariff and the same shall be subject to retrospective adjustment. Accordingly, the total annualized O&M expenses including water charges claimed and allowed is summarized as under:

	2017-18		2018-19	2018-19
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Normative O&M Expenses claimed	13840	27680	29408	44112
<b>O&amp;M Expenses as allowed (annualized)</b>	<b>13840</b>	<b>27680</b>	<b>29408</b>	<b>44112</b>
Water Charges claimed	1003.29	1003.29	891.43	891.43
<b>Water Charges allowed (annualized)</b>	<b>1003.29</b>	<b>1003.29</b>	<b>891.43</b>	<b>891.43</b>
<b>Total O&amp;M Expenses allowed (annualized)</b>	<b>14843.29</b>	<b>28683.29</b>	<b>30299.43</b>	<b>45003.43</b>

132. The Water charges allowed as above is subject to truing-up at the end of the tariff period and the Petitioner is therefore directed to place on record all relevant information.

133. The Petitioner has claimed additional O&M expenses on account of the installation of ECS and other equipment. The same shall be guided by our observations in para 91 of this order.

### Operational Norms

134. The operational norms in respect of the generating station considered by the Petitioner are as under:

Normative Annual Plant Availability Factor (%)	85
Heat Rate (kcal/kWh)	2241.41
Auxiliary Power Consumption (%)	5.75
Specific Oil Consumption (ml/kWh)	0.50

135. The operational norms claimed by the Petitioner are discussed as under:

### Normative Annual Plant Availability Factor (NAPAF)

136. Regulation 36(A)(a) of the 2014 Tariff Regulations provides as under:



“(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) &(e)- 85%.

Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.

The above provision shall be reviewed based on actual feedback after 3 years from 1.4.2014.”

137. The Petitioner has considered the NAPAF of 85% for the periods 2017-18 and 2018-19 and the same is in line with the operational norms specified under the 2014 Tariff Regulations. Accordingly, NAPAF of 85% has been considered for the said periods.

### Station Heat Rate (SHR)

138. Regulation 36(C)(b)(i) of the 2014 Tariff Regulations provides Station Heat Rate as under:

#### (C) Gross Station Heat Rate

(b) New Thermal Generating Station achieving COD on or after 1.4.2014

(i) Coal-based and lignite-fired Thermal Generating Stations  
= 1.045 X Design Heat Rate (kCal/kWh)

Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.

Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:

Pressure Rating (Kg/cm <sup>2</sup> )	150	170	170	247
SHT/RHT (OC)	535/535	537/537	537/565	565/593
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935	1850
Min.Boiler Efficiency				
Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86
Bituminous Imported Coal	0.89	0.89	0.89	0.89
Max Design Unit Heat Rate (kCal/kWh)				
Sub-Bituminous Indian Coal	2273	2267	2250	2151
Bituminous Imported Coal	2197	2191	2174	2078

Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken:



*Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency:*

*Provided also that where the boiler efficiency is below 86% for Sub-bituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% respectively for Sub-bituminous Indian coal and bituminous imported coal for computation of station heat rate:*

*Provided also that maximum turbine cycle heat rate shall be adjusted for type of dry cooling system:*

*Provided also that if one or more generating units were declared under commercial operation prior to 1.4.2014, the heat rate norms for those generating units as well as generating units declared under commercial operation on or after 1.4.2014 shall be lower of the heat rate norms arrived at by above methodology and the norms as per the Regulation 36(C)(a)(i):”*

139. The Petitioner has furnished design turbine cycle heat rate and boiler efficiency of the generating station as 1819.30 kcal/kWh and 84.82% respectively. Thus, the unit design heat rate worked out from the data furnished by the Petitioner works out as 2144.90 kcal/kWh ( $1819.30/0.8482$ ). Considering the margin of 4.5% in terms of the 2014 Tariff Regulations, the Gross Station Heat Rate (GSHR) works out as 2241.42 kcal/kWh ( $1.045 \times 2144.90$ ). Accordingly, the Petitioner has prayed for consideration of the heat rate norm of 2241.41 kcal/kWh in terms of Regulation 54 (Power to relax) of the 2014 Tariff Regulations.

140. As per Regulation 36(C)(b)(i) of the 2014 Tariff Regulations, for new thermal generating station achieving COD on or after 1.4.2014, the GSHR= $1.045 \times$  Design Heat Rate i.e. 2241.41 (i.e.  $1.045 \times 2144.90$ ), provided that the design heat rate shall not exceed the maximum design unit heat rates depending upon the pressure and temperature ratings of the units as specified under the regulations (where ceiling design heat rate for plants having temperature of 565/593°C and pressure rating of 247 Kg/cm<sup>2</sup> using sub bituminous coal is given as 2151 kcal/kWh). The design heat rate of the generating station i.e. 2144.90 kcal/kWh is lower than the ceiling design heat rate of 2151 kcal/kWh. Further, Regulation 36(C)(b)(i) provides



that where the boiler efficiency is below 86% for sub-bituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% respectively for Sub-bituminous Indian coal and bituminous imported coal for computation of station heat rate. The boiler efficiency of the generating station is 84.82%. However, the same shall be considered as 86% as per the above regulation. Accordingly, the unit design heat rate works out as 2115.47 kcal/kWh (1819.30/0.86). Thus, considering the multiplying factor of 1.045, the applicable Station Heat Rate is 2210.66 kcal/kWh (1.045 x 2115.47). Accordingly, the claim of the Petitioner to consider the heat rate of 2241.41 kcal/kWh is rejected and the GSHR of **2210.66 kcal/kWh** has been considered for the purpose of tariff.

#### Auxiliary Power Consumption (APC)

141. Regulation 36(E)(a)(i) of the 2014 Tariff Regulations provides for APC as under:

##### *(E) Auxiliary Energy Consumption*

*(a) Coal-based generating stations except at (b) below:*

	<i>With Natural Draft cooling tower or without cooling tower</i>
<i>(i) 200 MW series</i>	8.5%
<i>(ii) 300/330/350/500 MW and above</i>	
<i>Steam driven boiler feed pumps</i>	5.25%
<i>Electrically driven boiler feed pumps</i>	7.75%

*Provided further that for thermal generating stations with induced draft cooling tower, the norms shall be further increased by 0.5%.*

142. The Petitioner has considered APC of 5.75% for the period 2017-19. The normative APC for 500 MW and above generating plants having steam driven boiler feed pump is 5.25%. Further, for thermal generating stations with induced draft cooling tower, the norms shall be further increased by 0.5%. Since the Petitioner has Steam Driven Boiler Feed Pump along with induced draft cooling tower, the APC of 5.75% as claimed by the Petitioner is as per the specified norms and is





allowed. It is noticed that the Petitioner has also prayed for additional APC on account of installation of FGD system as and when FGD is installed for ECS. The same shall be guided by our observations in para 92 of this order and shall be based on the actual auxiliary consumption of the equipment.

### Specific Oil Consumption

143. Regulation 36(D)(a) of the 2014 Tariff Regulation provides for the Secondary fuel oil consumption of 0.50 ml/kWh for coal based generating station. Hence, the Secondary Fuel Oil consumption as considered by the Petitioner is as per norms and is allowed.

144. Based on the above, the operational norms allowed for the period 2017-19 is as under:

Normative Annual Plant Availability Factor (%)	85
Heat Rate (kcal/kWh)	2210.66
Auxiliary Power Consumption (%)	5.75
Specific Oil Consumption (ml/kWh)	0.50

### Interest on Working Capital

145. Sub-section (a) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*“28 (1) The working capital shall cover:*

*(a) Coal-based/lignite-fired thermal generating stations*

*(i) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(ii) Cost of coal or lignite and limestone for 30 days for generation corresponding to the normative annual plant availability factor;*

*(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;*

*(iv) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29;*



(v) *Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor; and*

(vi) *Operation and maintenance expenses for one month.”*

### Fuel Cost and Energy Charges in Working Capital

146. The Petitioner has claimed cost for fuel component in working capital based on ‘as received’ GCV of coal and secondary fuel oil procured for the preceding three months of April 2017, May 2017 and June 2017 for Unit-I, September 2017, October 2017 and November 2017 for Unit-II and June 2018, July 2018 and August 2018 for Unit-III as under:

	2017-18		2018-19	2018-19
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Cost of coal towards stock	15597.68	32000.68	32000.68	52389.60
Cost of coal towards generation	15597.68	32000.68	32000.68	52389.60
Cost of secondary fuel oil 2 months	219.67	393.48	393.48	685.97

147. The Petitioner in Form-15 has claimed the details of LDO with respect to the fuel computation of energy charges. The Commission vide ROP of the hearing dated 14.5.2019 had sought clarification from the Petitioner regarding consumption of LDO and details of HFO for computation of fuel components and energy charges. In response, the Petitioner has submitted that the LDO system has been commissioned for all the Units of the project as per the scheme. The Petitioner has also submitted that the LDO is being fired using HFO pressurizing pumps since the commissioning of the system and usage of HFO system will be phased out in the Petitioner Company. Accordingly, HFO is not being used in the project and LDO is fired in the boiler. Hence, LDO is considered for computation of fuel component in energy charges.



148. The Petitioner in Form-15 has furnished 'as billed' GCV and 'as received' GCV of coal during preceding three months of the COD of each unit. In compliance with the direction of the Commission, the Petitioner vide its affidavit dated 10.4.2019 has submitted that the coal samples for measuring 'as received' GCV of coal were taken from wagon top. The Petitioner has also placed on record the GCV of coal for preceding three months on 'as received' basis.

149. In view of the above, the cost for fuel components in working capital has been computed at 85% NAPAF and based on 'as received' GCV of coal & price of coal procured along with secondary fuel oil for the preceding three months of COD of each unit of the generating station. Accordingly, the cost for fuel component for the purpose of tariff is allowed as under:

	2017-18		2018-19	2018-19
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Cost of coal towards stock (30 days)	15381.46	31664.61	31664.61	50962.48
Cost of coal towards generation (30 days)	15381.46	31664.61	31664.61	50962.48
Cost of secondary fuel oil 2 months	222.72	398.95	398.95	695.50

150. It is pertinent to mention that the cost of coal towards stock and generation allowed during the years 2017-18 and 2018-19 is less than the cost claimed by the Petitioner. This is due the fact that while the claim of the Petitioner is based on quantity and price of coal supplied during previous three months plus the quantity and price of opening stock for the prior periods, the cost allowed in this order for the years 2017-18 & 2018-19 is based on quantity and price of coal supplied during previous three months only as per the provisions of the 2014 Tariff Regulations. Further, the cost of secondary fuel oil for 2 months allowed during the year 2017-18 and 2018-19 is more than the claim of the Petitioner. In this regard, it is



observed that Petitioner has claimed secondary fuel oil for 60 days instead of 2 months. However, the cost of secondary fuel oil for 2 months as computed in this order is considered in terms of the provisions of the 2014 Tariff Regulations.

### Energy Charge Rate (ECR)

151. Clause 6(b) of Regulation 30 of the 2014 Tariff Regulations provides as under:

*“6. Energy charge rate (ECR) in Rupees per KWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:*

*(b) For gas based and liquid fuel based stations  $ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}$*

*Where,*

*AUX = Normative auxiliary energy consumption in percentage.*

*CVPF = Weighted Average Gross calorific value of primary fuel as received, in Kcal per kg, per litre or per standard cubic metre, as applicable.*

*ECR = Energy charge rate, in Rupees per KWh sent out.*

*GHR = Gross station heat rate, in KCal per KWh.*

*LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable during the month.”*

152. As stated, the Petitioner has claimed ECR (ex-bus) for 340.403 Paise/kWh for Unit-I, 348.874 Paise/kWh for Unit-I and Unit-II and 380.921 Paise/kWh for all units for the period 2017-18 and 2018-19 based on the weighted average price, GCV of coal (as received basis) & Oil procured and burnt for the preceding three months of COD of each unit of the generating station. ECR has been worked out based on the operational norms specified under the 2014 Tariff Regulations and on ‘as received’ GCV of coal for preceding three months of the COD of the respective units of the generating station as under:

Sr. No.		Unit	2017-18		2018-19	2018-19
			31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
1	Capacity	MW	800	1600	1600	2400
2	Weighted average Gross Station Heat Rate	Kcal/kWh	2210.66	2210.66	2210.66	2210.66
3	Weighted average Auxiliary Energy Consumption	%	5.75	5.75	5.75	5.75
4	Weighted average GCV of oil	Kcal/lit	9231	9556.26	9556.26	9248.56



5	Weighted average GCV of Coal (as received)	Kcal/kg	3947.87	3500.38	3500.38	3579.51
6	Weighted average price of oil	Rs/KL	44867.58	40183.87	40183.87	46702.62
7	Weighted average price of Coal	Rs/MT	5622.18	5131.40	5131.40	5629.88
8	Rate of Energy Charge ex-bus	Rs/kWh	3.357	3.452	3.452	3.706

153. Accordingly, the energy charges for 2 months on the basis of “as received” GCV of coal for the purpose of interest on working capital has been worked out as under:

2017-18		2018-19	2018-19
31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
31411.92	64601.69	64601.69	104032.68

(₹ in lakh)

#### Maintenance Spares

154. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provides for maintenance spares @ 20% of the O&M expenses. As specified under Regulation 29(2) of the 2014 Tariff Regulations, the maintenance spares @20% of the O&M expenses, including water charges claimed and allowed are as under:

2017-18		2018-19	2018-19
31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
2968.66	5736.66	6059.89	9000.69

(₹ in lakh)

#### Receivables

155. Receivables equivalent to two months of capacity charge and energy charges has been worked out and allowed as under:

	2017-18		2018-19	
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Variable Charges - for two months	31411.92	64601.69	64601.69	104032.68
Fixed Charges - for two months	19231.23	31919.95	32851.29	47242.71
<b>Total</b>	<b>50643.15</b>	<b>96521.64</b>	<b>97452.98</b>	<b>151275.39</b>

(₹ in lakh)





### O & M Expenses (1 month)

156. Regulation 28(1)(a)(vi) of the 2014 Tariff Regulations provides for O&M expenses for one month for coal-based generating station. Accordingly, one month O&M expenses (annualized) allowed are as under:

		(₹ in lakh)	
2017-18		2018-19	2018-19
31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
1236.94	2390.27	2524.95	3750.29

### Rate of interest on working capital

157. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*“Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1<sup>st</sup> April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.”*

158. In terms of the above regulation, bank rate of 12.60% (i.e. SBI base rate of 9.10% as on 1.4.2017 plus 350 bps) and 12.20% (i.e. SBI base rate of 8.70% as on 1.4.2018 plus 350 bps) for the period from COD of Unit-I to COD of the generating station and from COD of the generating station to 31.3.2019 respectively has been considered for the purpose of calculating interest on working capital. Accordingly, interest on working capital has been computed as under:

	2017-18		2018-19	
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Cost of coal for 30 days towards stock	15381.46	31664.61	31664.61	50962.48
Cost of coal for 30 days towards generation	15381.46	31664.61	31664.61	50962.48
Cost of secondary fuel oil for two months	222.72	398.95	398.95	695.50
Maintenance spares	2968.66	5736.66	6059.89	9000.69
Receivables for two months	50643.15	96521.64	97452.98	151275.39
O&M expenses for one month (annualized)	1236.94	2390.27	2524.95	3750.29



Total Working Capital	85834.39	168376.74	169765.99	266646.82
Rate of interest	12.6000%	12.6000%	12.6000%	12.2000%
Interest on working capital	10815.13	21215.47	21390.51	32530.91

### Annual Fixed Charges

159. Based on the above, the annual fixed charges approved for the generating station for the period 2017-19 is summarized as under:

	(₹ in lakh)			
	2017-18		2018-19	
	31.7.2017 to 30.12.2017	31.12.2017 to 31.3.2018	1.4.2018 to 14.9.2018	15.9.2018 to 31.3.2019
Depreciation	29556.51	47650.72	49578.75	67817.57
Interest on Loan	26488.27	43412.52	43458.53	58553.78
Return on Equity	33684.19	50557.69	52380.51	79550.57
Interest on Working Capital	10815.13	21215.47	21390.51	32530.91
O&M Expenses	14843.29	28683.29	30299.43	45003.43
<b>Total</b>	<b>115387.40</b>	<b>191519.69</b>	<b>197107.73</b>	<b>283456.26</b>

Note: 1) All figures are on annualized basis. 2) All the figures under each head have been rounded. The figure in total column in each year is also rounded. Because of rounding of each figure the total may not be arithmetic sum of individual items in columns.

### Month to Month Energy Charges

160. The Petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations.

161. The Commission vide order dated 19.2.2016 in Petition No. 33/MP/2014 (TPDDL V NTPC & ors) had directed NTPC to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out by the Petitioner with the beneficiaries at the Senior Management level

### Application filing fee and Publication Expenses

162. The Petitioner has sought reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the periods 2014-19. The Petitioner has deposited the filing fees in terms of the provisions of



the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. The Petitioner has also incurred charges towards publication of the tariff petition in newspapers. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations, the Petitioner is entitled to recover the filing fees and the expenses incurred on publication of notices directly from the respondents, on pro rata basis, on submission of documentary proof of the same.

163. The annual fixed charges approved as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

164. This order disposes of Petition No. 199/GT/2017.

*Sd/-*  
(I.S.Jha)  
Member

*Sd/-*  
(Dr. M. K. Iyer)  
Member

*Sd/-*  
(P.K.Pujari)  
Chairperson



**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 256/GT/2014**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson**

**Shri A.K. Singhal, Member**

**Shri A.S. Bakshi, Member**

**Dr. M.K. Iyer, Member**

**Date of Order: 12.6.2017**

**In the matter of**

Suo motu Review of order dated 8.3.2017 in Petition No. 256/GT/2014

**And**

**In the matter of**

Approval of tariff of NLC Thermal Power Station- II Stage- I (630 MW) and Stage-II (840 MW)  
for the period 2014-19.

**And**

**In the matter of**

Neyveli Lignite Corporation Limited  
Neyveli House, 135, EVR Periyar Road,  
Kilpauk, Chennai – 600010

.....**Petitioner**

**Vs**

1. Tamil Nadu Generation and Distribution Company Ltd  
800, Anna Salai  
Chennai – 600002

2. Power Company of Karnataka Ltd.  
KPTCL Building, Kaveri Bhavan, K.G.Road,  
Bangalore – 560009

3. Bangalore Electricity Supply Company Ltd.  
KR Circle, Bangalore – 560001

4. Mangalore Electricity Supply Company Ltd.  
Paradigm Plaza, AB Shetty Circle,  
Mangalore-575001

5. Gulbarga Electricity Supply Company Ltd.  
Station Main Road, Gulbarga-585102

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*Suo motu review in Petition No. 256/GT/2014*

*Page 1 of 5*



6. Hubli Electricity Supply Company Ltd.  
Corporate Office, Navanagar,  
PB Road, Hubli-580025
7. Chamundeshwari Electricity Supply Corporation Ltd.  
Corporate Office, No.927, LJ Avenue, New KantarajaUrs Road,  
Saraswathipuram, Mysore-570009
8. Kerala State Electricity Board Ltd.  
Vaidyuthi Bhavanam, Pattom  
Thiruvananthapuram-695004
9. Puducherry Electricity Department  
137, NSC Bose Salai,  
Puducherry – 605001
10. Transmission Corporation of Andhra Pradesh  
Vidyut Soudha, Khairatabad  
Hyderabad- 500082
11. Transmission Corporation of Telangana  
Vidyut Soudha, Khairatabad  
Hyderabad- 500082

.....Respondents

**ORDER**

This petition was filed by the petitioner, Neyveli Lignite Corporation (NLC) for approval of annual fixed charges and energy charges for the period 2014-19 for NLC TPS-II, Stage-I (630 MW) and Stage-II (840 MW) (the generating station) based on the 2014 Tariff Regulations and the Commission vide order dated 8.3.2017 has allowed the annual fixed charges based on the opening capital cost of Rs 32023.21 lakh as on 1.4.2014 as under:

**Stage-I**

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity	729	733	733	733	733
Interest on Loan	0	0	0	0	0
Depreciation	0	0	0	0	0
Interest on Working Capital	4080	4147	4201	4268	4339
O & M Expenses	15080	16025	17033	18104	19244
Special Allowance	4365	4642	4937	5250	5584
<b>Total</b>	<b>24254</b>	<b>25547</b>	<b>26904</b>	<b>28355</b>	<b>29900</b>





**Stage-II**

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity	3342	3166	2974	2782	2590
Interest on Loan	0	0	0	0	0
Depreciation	975	975	975	975	975
Interest on Working Capital	5516	5602	5669	5754	5844
O & M Expenses	20099	21359	22703	24131	25651
Special Allowance	0	0	0	1894	6044
Separate Compensation Allowance	735	840	840	630	210
<b>Total</b>	<b>30666</b>	<b>31941</b>	<b>33161</b>	<b>36165</b>	<b>41314</b>

2. It is noticed that certain inadvertent arithmetic/ clerical errors has crept in order dated 8.3.2017 as regards the total projected water charges allowed and the same is required to be corrected. Accordingly, in exercise of the power under Regulation 103 A of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2009, the error in total water charges allowed is rectified and consequently the annual fixed charges for Stage-I and II of the generating station are revised as stated in subsequent paragraphs.

**Water Charges**

3. The Water charges allowed in para-49 of order dated 8.3.2017 is as under:

	Projected Quantity Considered (KL) (1)	Pumping Charges ( 0.376₹/KL) (2)=(1)x0.376	Water cess (3)= (22995/7)	Water Consent Fee (4)= (143880/7)	Projected Water charge Allowed (₹ in lakh) (5)= (2)+(3)+(4)
2014-15	61310468	23052735.96	3285.00	20554.28	23.07
2015-16	61310468	23052735.96	3285.00	20554.28	23.07
2016-17	61310468	23052735.96	3285.00	20554.28	23.07
2017-18	61310468	23052735.96	3285.00	20554.28	23.07
2018-19	61310468	23052735.96	3285.00	20554.28	23.07

4. The sum total of the projected water charges of Rs 23.07 lakh allowed in column-5 of the above table is corrected as Rs 230.76 lakh and the water charges allowed stands modified as under:



	Projected Quantity Considered (KL) (1)	Pumping Charges ( 0.376₹/KL) (2)=(1)x0.376	Water cess (3)= (22995/7)	Water Consent Fee (4)= (143880/7)	Projected Water charge Allowed (₹ in lakh) (5)= (2)+(3)+(4)
2014-15	61310468	23052735.96	3285.00	20554.28	230.76
2015-16	61310468	23052735.96	3285.00	20554.28	230.76
2016-17	61310468	23052735.96	3285.00	20554.28	230.76
2017-18	61310468	23052735.96	3285.00	20554.28	230.76
2018-19	61310468	23052735.96	3285.00	20554.28	230.76

5. Consequent upon the above, the O & M expenses in working capital undergoes revision as under:

#### O & M expenses in working capital

(a) The table under para-51 of the order dated 8.3.2017 is modified as under:

(₹ in lakh)

STAGE-I					
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses allowed	15057.00	16002.00	17010.00	18081.00	19221.30
Water Charges allowed	98.90	98.90	98.90	98.90	98.90
<b>Total O&amp;M expenses allowed</b>	<b>15155.90</b>	<b>16100.90</b>	<b>17108.90</b>	<b>18179.90</b>	<b>19320.20</b>

(₹ in lakh)

STAGE-II					
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses allowed	20076.00	21336.00	22680.00	24108.00	25628.40
Water Charges allowed	131.86	131.86	131.86	131.86	131.86
<b>Total O&amp;M expenses allowed</b>	<b>20207.86</b>	<b>21467.86</b>	<b>22811.86</b>	<b>24239.86</b>	<b>25760.26</b>

#### O & M expenses for 1 month

(b) The table under para-57 of the order dated 8.3.2017 is modified as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Stage-I	1262.99	1341.74	1425.74	1514.99	1610.02
Stage-II	1683.99	1788.99	1900.99	2019.99	2146.69

#### Maintenance spares

(c) The table under para-60 of the said order dated 8.3.2017 is modified as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Stage-I	3031.18	3220.18	3421.78	3635.98	3864.04
Stage-II	4041.57	4293.57	4562.37	4847.97	5152.05



### Annual fixed charges

6. Based on the above correction, the annual fixed charges allowed for Stages – I and II of the generating station by order dated 8.3.2017 shall stand modified as under:

#### Stage-I

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity	729	733	733	733	733
Interest on Loan	0	0	0	0	0
Depreciation	0	0	0	0	0
Interest on Working Capital	4084	4152	4206	4272	4343
O & M Expenses	15156	16101	17109	18180	19320
Special Allowance	4365	4642	4937	5250	5584
<b>Total</b>	<b>24335</b>	<b>25628</b>	<b>26985</b>	<b>28436</b>	<b>29980</b>

#### Stage-II

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity	3342	3166	2974	2782	2590
Interest on Loan	0	0	0	0	0
Depreciation	975	975	975	975	975
Interest on Working Capital	5523	5608	5676	5760	5851
O & M Expenses	20208	21468	22812	24240	25760
Special Allowance	0	0	0	1894	6044
Compensation Allowance	735	840	840	630	210
<b>Total</b>	<b>30782</b>	<b>32057</b>	<b>33276</b>	<b>36281</b>	<b>41429</b>

7. Except for above, all other terms of the order dated 8.3.2017 remain unchanged.

**Sd/-**  
**(Dr. M.K.Iyer)**  
**Member**

**Sd/-**  
**(A. S. Bakshi)**  
**Member**

**Sd/-**  
**(A. K. Singhal)**  
**Member**

**Sd/-**  
**(Gireesh B. Pradhan)**  
**Chairperson**



**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 219/GT/2019**

**Coram:**

**Shri P.K.Pujari, Chairperson  
Dr. M.K. Iyer, Member  
Shri I.S.Jha, Member**

**Date of Order: 29<sup>th</sup> January, 2020**

**In the matter of**

Grant of interim tariff for Neyveli New Thermal Power Station (1000 MW) of NLC India Ltd for the period from anticipated COD of Units-I & II to 31.3.2021

**And**

**In the matter of**

Determination of tariff of Neyveli New Thermal Power Station (1000 MW) of NLC India Ltd for the period from anticipated COD of Units-I & II to 31.3.2021

**And**

**In the matter of**

NLC India Limited  
First Floor, No.8, Mayor Sathyamurthy Road,  
FSD, Egmore Complex of Food Corporation of India,  
Chetpet, Chennai - 600010

**...Petitioner**

**Vs**

1. Tamilnadu Generation and Distribution Corporation Ltd  
NPKRR Maaligai, 144 Anna Salai, Chennai - 600002

2. Andhra Pradesh Power Coordination Committee,  
Vidyut Soudha, Gunadula, Eluru Road,  
Vijawada,

3. Southern Power Distribution Company of Andhra Pradesh Ltd,  
D. No: 19-13-65/A, Srinivasapuram, Tiruchhanur Road,  
Tirupati (AP) - 517501

3. Eastern Power Distribution Company of Andhra Pradesh Ltd  
P&T Colony, Seethammadhara, Visakhapatnam (AP) - 530013

4. Transmission Corporation of Telangana Ltd  
Vidyut Soudha Khairatabad, Hyderabad - 500082



5. Northern Power Distribution Company of Telangana Ltd.  
H.No 1-1-504, Opp. NIT petrol pump  
Chaityanayapuri colony, Hanmkonda  
Warangal (Telangana) - 506004

6. Southern Power Distribution Company of Telangana Ltd  
2<sup>nd</sup> Floor, H.No. 6-1-50, Mint Compound  
Hyderabad - 500063

7. Power Company of Karnataka Ltd  
KPTCL complex, Kaveri Bhawan  
Bangalore - 560009

8. Bangalore Electricity Supply Company Ltd  
Krishna Rajendra Circle  
Bangalore - 560001

9. Mangalore Electricity Supply Company Ltd  
Corporate Office, MESCOM Bhavana, Bejai,  
Kavoor cross Road, Mangalore - 575004

10. Chamundeshwari Electricity Supply Company Ltd  
Corporate Office No. CA 29, Vijayanagar, 2<sup>nd</sup> Stage,  
Hinakal, Mysore-570017

11. Gulbarga Electricity Supply Company Ltd  
Station Main Road, Gulbarga  
Gulbarga- 585102, Karnataka

12. Hubli Electricity Supply Company Ltd  
Corporate Office, P.B Road, Navanagar  
Hubli - 580025

13. Kerala State Electricity Board Ltd  
Vaidyuthi Bhavanam, Pattom  
Thiruvananthpuram - 695004

14. Puducherry Electricity Department  
137, NSC Bose Salai  
Puducherry - 605001

...Respondents

**Parties present:**

Shri M.G.Ramachandran, Senior Advocate, NLC  
Ms. Anushree Bardhan, Advocate, NLC  
Shri J. Dhanasekaran, NLC  
Shri S.Vallinayagam, Advocate, TANGEDCO





### ORDER

The Petitioner, NLC India Limited (NLCIL) has filed this petition for determination of tariff of Neyveli New Thermal Power Station (2 x 500 MW) (hereinafter referred to as 'the Project/generating station') for the period from anticipated COD of Unit-I (July, 2019) and Unit-II (December, 2019) till 31.3.2024 in terms the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2019 ('the 2019 Tariff Regulations').

2. The Petitioner is in the process of establishing the 2 x 500 MW, lignite fired, Neyveli New Thermal Power Station (NNTPS) at Neyveli. The Project was sanctioned by the Govt. of India on 9.6.2011 with a capital cost of ₹5907.11 crore (October, 2010 base price level) including IDC of ₹559.09 crore with FE component of ₹217.009 Mn US\$ @ 1US\$=44.69. The power from the Project has been allocated to the beneficiaries as per MOP, GOI letter dated 28.5.2011 and the Petitioner had entered into PPAs with the Respondent beneficiaries. The Petitioner has submitted that the anticipated COD of Unit-I is July, 2019 and Unit-II is December, 2019.

3. Petition No. 323/GT/2018 was earlier filed by the Petitioner for determination of tariff of the Project for the period from anticipated COD of Unit-I (October, 2018) and Unit-II (December, 2018). However, based on the submission of the Petitioner that the units were expected to achieve COD during the period 2019-24, the said Petition was disposed of with liberty to the Petitioner to approach the Commission from anticipated COD of the units in terms of the provisions of the 2019 Tariff Regulations. In terms of the liberty granted, the Petitioner has filed this petition for determination of tariff from the anticipated COD of Units till 31.3.2024.

4. The Petitioner has filed this petition in terms of Regulation 9(1) of the 2019 Tariff Regulations read with Regulation 3(6) of the Central Electricity Regulatory Commission



(Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004. Copies of the petition have also been served on the Respondents. Reply to the petition has been filed by the Respondent, TANGEDCO.

5. During the hearing of the petition on 12.9.2019, the learned counsel for the Petitioner submitted that as Unit-I was likely to achieve COD during September 2019, the Commission may consider the grant of interim tariff, pending determination of final tariff of the generating station. Accordingly, the Commission, after directing the Petitioner to file affidavit regarding the COD of the units, reserved its orders on the prayer of the Petitioner for grant of interim tariff. Pursuant to the directions of the Commission, the Petitioner has submitted that the COD of Unit-I is scheduled on or before 30.9.2019 and the COD of Unit-II in December, 2019.

6. The Petitioner has claimed capital cost of ₹300531.08 lakh as on the anticipated COD of Unit-I and ₹668526.66 lakh as on the anticipated COD of Unit-II/station. While the Petitioner has incurred the expenditure for the Project, the Respondent beneficiaries will be reaping the benefits of such expenditure by way of supply of power. In this background and in order to enable the Petitioner to meet its on-going financial obligations through reasonable recovery of cost of supply of electricity by the Petitioner, we consider the grant of interim tariff for the generating station for the period from the anticipated COD of the said Units till 31.3.2021, as discussed in the subsequent paragraphs.

#### Commissioning schedule

7. The scheduled COD of the Units as per Investment Approval dated 9.6.2011 and the anticipated COD of the units, as submitted by the Petitioner is as under:

Unit No	Original schedule as per GOI sanction dated 9.6.2011	Anticipated COD	Time overrun (months)
I	9.6.2015	September, 2019	51
II	9.12.2015	December, 2019	48



8. It is observed that there is time overrun of 51 months and 48 months till the anticipated COD of Units I & II respectively from the scheduled COD, as per Investment approval of Govt. of India dated 9.6.2011.

**Time & Cost overrun**

9. The Petitioner has submitted the reasons for the delay in the commissioning of the units with respect to their anticipated COD, mainly as under:

- (i) Tender stage delay;
  - (a) Tender for 500 mw lignite based power plant;
  - (b) NLCIL initiatives for early award of the tender and impediments thereof;
- (ii) Enhancement of completion period by 6 months for NTA 1 package;
- (iii) Execution delay due to Force Majeure and technological issues/hindrances; and
  - (a) Delay due to Force Majeure:**
    - (i) Flood, heavy rain and inundation of the project site and logistical hindrance due to such disaster in Tamil Nadu;
    - (ii) Sand Quarry closure;
    - (iii) GST Implementation;
  - (b) Execution delay due to technological issues/surprises.**
    - (i) Requirement of Steel;
    - (ii) Requirement of Specialized material (E350 & E450);
    - (iii) Shortage of main steel structures;
    - (iv) Requirement of fabrication facilities for the heavy structure (i.e. size 2400 X 2400mm);
    - (v) Material transportation;
    - (vi) Specialized welding joints;
    - (vii) Non-availability of skilled labour;
    - (viii) Flue Gas Duct (FGD);
    - (ix) Flue Gas Duct needed to be facilitated with higher hanging elevation supports (56 -116 meter level);
    - (x) Flue Gas Recirculation System (FGRS) & Firing system;
    - (xi) Milling system;
    - (xii) High elevation wind velocity due to Tower type boiler; and
    - (xiii) Requirement of higher capacity (600 T) crane based on wind velocity.



**(c) NTA-3 Package-Balance of Plant -Insolvency Issues**

- (i) LOA has been issued to M/s EPC Constructions India Limited-EPCCIL Mumbai, for balance of Plant (NTA-3) package on 30.04.2014;
- (ii) Extension of time (referred to as EOT) schedule; and
- (iii) Insolvency issue

(d) Unit-I was synchronized with grid on 28.3.2019, with secondary fuel oil. However, Unit got tripped on protection on the same day and was shut down in order to carry out the following major activities for lignite firing so as to achieve COD;

10. The Respondent, TANGEDCO and PCKL vide their replies dated 25.9.2019 & 3.12.2019 respectively have mainly submitted that the reasons furnished for time overrun are attributable to the Petitioner and the same may not be accepted. They have also submitted that the cost overrun of the project is due to inefficiencies of the Petitioner and the Respondents cannot therefore be burdened on this count. The Respondents have also requested that the capital cost of the project may be allowed only on prudence check.

11. In our considered view, the question of time and cost overrun involved in the completion of the project and its impact on capital cost is required to be considered in detail, only after hearing the parties on merits, at the time of determination of final tariff of the generating station. Hence, the question of time and cost overrun has not been considered in this order.

**Capital Cost****Approved Capital Cost**

12. As stated, the original sanctioned cost of the project is ₹5907.11 crore at October, 2010 price level including IDC of ₹559.09 crore and FE component of ₹217.009 million US \$ (1 US \$ = ₹44.69). The hard cost of the project was ₹5348.08 crore, excluding IDC (about ₹5.34 crore/MW). The project cost was revised and RCE-I was approved by the Board of Directors in its 479<sup>th</sup> meeting dated 28.5.2018. Accordingly, the revised project cost is ₹7080.41 crore, including IDC of ₹772.78 crore.



### Revised Cost Estimate (RCE-II)

13. The Petitioner has submitted that the RCE-II for ₹779277.96 lakh including IDC, FC, FERV & Hedging cost of ₹108075.74 lakh is yet to be approved by the Competent Authority.

14. The capital cost claimed by the Petitioner as on the anticipated COD of Units-I & II in Form 1(i) of the Petition for 2019-21 is as under:-

	(₹ in lakh)		
	2019-20		2020-21
	Unit I	Units-I & II	
Capital Cost	300531.08	666463.83	668322.86
Additions during the year/ period	-	-	45634.14
Closing Capital Cost	300531.08	666463.83	713957.01

15. The capital cost of ₹666463.83 lakh claimed as on the anticipated COD of the generating station is higher than the original Investment approval cost of ₹590711.00 lakh and is lower than the revised cost of ₹708041.00 lakh. Further, the Petitioner vide its affidavit dated 15.11.2019 has furnished the audited balance sheets for the period 2011-12 to 2018-19 and audited Form-B indicating the capital cost of ₹614809.10 lakh as on 30.9.2019 (revised anticipated COD of Unit-I) including IDC, FC, FERV & Hedging cost of ₹101990.15 lakh.

### Capital cost for purpose of interim tariff

16. The Petitioner has furnished the actual capital expenditure for ₹583305.91 lakh as on 31.5.2019, in Part-I, Form-B of the petition, duly certified by auditor. The projected capital expenditure up to COD of the generating station, as certified by auditor, is ₹57971.68 lakh. Further, the Petitioner vide its affidavit dated 15.11.2019, has furnished the audited balance sheet for the period from 2011-12 to 2018-19. The Petitioner has also furnished the audited Form-B showing the capital cost of ₹614809.10 lakh as on 30.9.2019, including IDC, FC, FERV & Hedging cost of ₹101990.15 lakh. Further, the total





capital expenditure upto the COD of the generating station is ₹668526.66 lakh, including IDC, FC, and FERV & Hedging cost for ₹108075.74 lakh in Form-B.

17. The approved Revised Cost Estimate (RCE-I) is ₹708041.00 lakh. There is an increase in the project cost of ₹117330 lakh which is 19.86% of the Investment approval i.e. ₹ 590711 lakh. However, the approved RCE of ₹708041.00 lakh is higher than the audited capital expenditure of ₹614809.10 lakh as on 30.9.2019 (revised anticipated COD of Unit-I) and the projected capital expenditure as on station COD is ₹668526.66 lakh. The Petitioner has submitted that out of total increase of ₹1173.30 crore in project cost, ₹ 416.25 crore is on account of installation of FGD to comply with the environmental norms; ₹518.21 crore is on account of GST, contribution of IDC and overhead due to time overrun is ₹213.75 crore & ₹121.93 crore respectively. Further, the Petitioner has also accounted the saving from sub-packages for ₹66.34 crore and the revenue earned from sale of infirm power for ₹30.50 crore. The cost of FGD was not envisaged at the time of investment approval and the same has been incorporated at the time of approval of RCE-I.

18. The delay in COD of both the units/station has increased the hard cost, IDC, IEDC etc. of the Project. The Petitioner vide affidavit dated 14.11.2019 has furnished certified Form-B indicating the capital cost as on COD (revised) of Unit-I (30.9.2019) and the anticipated COD of Unit-II (31.12.2019). Considering the fact that the Project involves significant time and cost overrun, we grant interim tariff for the period from anticipated COD of Units I & II till 31.3.2021, considering 85% of the audited capital cost as on the anticipated COD of Units I & II, pending determination of final tariff of the generating station from the actual COD of the units for the period 2019-24, as under:



(₹ in lakh)

	Unit-I as on anticipated COD (30.9.2019)	Unit- II (station) as on anticipated COD (31.12.2019)
Capital cost excluding IDC	256409.48	560450.92
IDC, FC, FERV & Hedging cost	50995.07	108075.74
Capital cost including IDC, FC, FERV & Hedging cost	307404.55	668526.66
85% of audited capital cost	261293.87 (307404.55 x 0.85)	568247.66 (668526.66 x 0.85)
<b>Capital cost considered for interim tariff</b>	<b>261293.87</b>	<b>568247.66</b>

### Additional Capital Expenditure

19. The Petitioner has not claimed any projected additional capital expenditure for the said period. However, any claim for additional capitalization later, shall be considered on prudence check, at the time of determination of final tariff of the generating station.

### O&M Expenses

20. The Petitioner has claimed total O&M expenses including Water Charges and Security expenses for the period 2019-21 as under:

(₹ in lakh)

	2019-20		2020-21
	Unit-I	Units-I & II	
Normative O&M expenses	11255.00	22510.00	23300.00
Water Charges	235.64	471.28	471.28
Security Expenses	331.00	662.00	729.00
<b>Total O&amp;M expenses</b>	<b>11821.64</b>	<b>23643.28</b>	<b>24500.28</b>

21. The normative O&M expenses have been allowed in terms of Regulation 35(1)(1) of the 2019 Tariff Regulations. The Petitioner has claimed water charges consisting pumping charges, personnel charges deputed for the O&M of pumping station and Consent fees paid to the State Government. In the absence of any contracted quantity of water, we have considered the specific water consumption as per CEA norms for 500 MW unit size. Since the claim of the Petitioner is on projection basis and in the absence of actual figures of water consumption, the annual water consumption is restricted to 30.66 million KL per annum for the period 2019-21. The Petitioner has not furnished the basis of the pumping charges and personnel charges deputed for O&M of pumping station, however we



have allowed these at ₹0.376/ KL and ₹0.62/KL respectively as claimed by the Petitioner, for the said period. Since consent fee is a statutory obligation to be deposited to the State authorities by the Petitioner, we allow the same as claimed by the Petitioner.

### Security Expenses

22. As per Regulation 35(1)(6) of the 2019 Tariff Regulations, security expenses for thermal generating stations are to be allowed separately, after prudence check. The Petitioner has claimed ₹662 lakh towards security expenses for 2019-20 and escalated @ 9% annually for the period 2020-21 onwards. The Petitioner has neither furnished any justification for escalation nor the basis for working out the security expenses claimed. Considering the fact that the claim of the Petitioner is on projection basis, we have restricted the claim of the Petitioner to the actual expenditure incurred in 2019-20 i.e. ₹662.00 lakh.

23. Based on the above, the total O&M expenses, including Water Charges and Security expenses allowed for the period 2019-21 are summarized as under:

	(₹ in lakh)		
	2019-20		2020-21
	Unit-I	Units-I & II	
O&M Expenses	11255	22510	23300
Water Charges	235.64	443.11	443.11
Security Expenses	331.00	662.00	662.00
<b>Total O&amp;M Expenses</b>	<b>11821.64</b>	<b>23615.11</b>	<b>24405.11</b>

24. The Water charges and Security expenses allowed as above are subject to revision based on proper justification and documentary evidence to be furnished by the Petitioner on affidavit, at the time of determination of final tariff of the generating station.

### Operational norms

25. The Petitioner has considered the following operational norms for the purpose of tariff:



Normative Annual Plant Availability Factor (NAPAF) (%)	85
Gross Station Heat Rate (without correction factor) (kcal/kWh)	2598.75
Auxiliary Power consumption (%)	6.25
Specific Oil Consumption (ml/kWh)	1.00

26. NAPAF of 85% as claimed by the Petitioner in terms of the 2019 Tariff Regulations is allowed. The Petitioner has claimed Gross Station Heat Rate (GSHR) of 2598.75 (1.05 x 2250 x 1.1) kCal/kWh. The guaranteed gross turbine cycle heat rate and boiler efficiency is 1929.3 kCal/kWh and 89.79% respectively. Further, the Petitioner has submitted the proximate analysis report of lignite sample wherein moisture content works out to 1.1%. Accordingly, the Station Heat Rate (SHR) has been worked out to 2481.725 (1.05 x 1.1 x 1929.3/0.8979) kCal/kWh. The GSHR based on Boiler Efficiency & Turbine Cycle Heat Rate works out to 2481.725 kCal/kWh, which is lower than the maximum allowable design heat rate of 2598.75 kCal/kWh as claimed by the Petitioner. Accordingly, the GSHR of 2481.725 kCal/kWh is allowed. The Auxiliary Power Consumption (APC) of 6.25% as claimed by the Petitioner in terms of Regulation 49(E)(d)(i) of the 2019 Tariff Regulations is allowed. However, the prayer of the Petitioner for relaxation of APC shall be considered on merits, at the time of final determination of tariff of the generating station. The specific fuel oil consumption of 1.0 ml/kWh claimed in terms of Regulation 49(D)(b)(i) of the 2019 Tariff Regulations is allowed.

#### **Lignite Transfer Price**

27. The Petitioner has submitted that the Lignite transfer price has been adopted in accordance with the guidelines of the Ministry of Coal, GOI. The Petitioner has considered the Pooled Lignite Transfer price of ₹2132.239 per kg, which is lower than the approved rates of the lignite based on MOC guidelines. Accordingly, for the purpose of interim tariff, the lignite transfer price of ₹2132.239 per kg is allowed. However, the same is



subject to revision in accordance with the lignite transfer prices notified by the Commission.

### Cost of Lignite in Working Capital

28. The claim of the Petitioner for cost of lignite for 40 days (10 days cost of primary fuel towards stock and 30 days advance payment of primary fuel cost at the normative annual plant availability factor) in terms of Regulation 34(a)(i)&(ii) of the 2019 Tariff Regulations, is allowed.

29. Based on the above, the operational norms allowed for the purpose of interim tariff for 2019-21 is summarised as under:

NAPAF	%	85
APC	%	6.25
GSHR (with 1.1 correction factor)	kCal/kWh	2481.725
Specific Fuel Oil Consumption	ml/kWh	1.00
Cost of lignite towards stock	in days	10
Cost of lignite towards Generation	in days	30
Cost of Main Secondary Fuel Oil	in months	2.00

### Fuel Cost and Energy Charges in Working Capital

30. The Petitioner has claimed the following cost of fuel component in working capital:

	(₹ in lakh)		
	2019-20		2020-21
	Unit-I	Units-I & II	
Cost of Lignite towards stock	2161.28	4322.56	4322.56
Cost of Lignite towards Generation	6483.85	12967.69	12967.69
Cost of Secondary fuel oil	289.77	579.54	577.95

31. In case of the generating stations of the Petitioner, the price of fuel for preceding three months i.e. January, 2019, February, 2019 and March 2019 means the pooled price of the lignite for the year 2018-19. The pooled lignite transfer price for the 2018-19 as allowed by the Commission in the order dated 8.3.2017 in Petition No. 256/GT/2014 was ₹ 2821/ton. Hence, the weighted average price of lignite is ₹2132.24/ton and GCV of 2610 kCal/kWh has been considered by the Petitioner for the period 2019-24, which is lower than the approved pooled lignite transfer price. The said price of ₹2132.24/ton is





allowed for calculating the Energy Charges. Based on this, the cost for fuel components in working capital and 2 months of Energy Charge is worked out and allowed as under, for the purpose of interim tariff:

	2019-20		2020-21
	Unit-I	Units-I & II	
Cost of lignite towards stock (10 days)	2065.09	4118.89	4118.89
Cost of lignite towards generation (30 days)	6195.26	12356.67	12356.67
Cost of Secondary fuel oil	267.29	534.58	533.12

32. Energy charges for 2 months (coal+ oil) is worked out as under:

2019-20		2020-21
Unit-I	Units-I & II	
12829.96	25659.93	25589.82

### Annual Fixed Charges

33. Accordingly, the interim fixed charges allowed for the generating station for the period 2019-21 is summarised as under:

	2019-20		2020-21
	Unit-I	Units-I & II	
Return on Equity	15487.93	33682.31	33682.31
Interest on Loan	15305.42	32140.73	29650.90
Depreciation	13216.24	28679.46	28679.46
Interest on Working Capital	4708.90	8056.09	9553.51
O&M Expenses	11801.79	23603.57	24393.57
<b>Total fixed Charges (annualized)</b>	<b>60520.29</b>	<b>126162.17</b>	<b>125959.75</b>

34. The interim fixed charges granted above are subject to adjustment after determination of final tariff of the generating station from the actual COD of the units till 31.3.2024.

### Energy Charge Rate

35. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of ₹2.310 per kWh based on fuel cost and GCV for the month. ECR has been worked out based on the



operational norms as per the 2019 Tariff Regulations and Price & GCV of primary & secondary fuels as adopted by the Commission and allowed as under:

Description	Unit	2019-20 Unit-I	2019-20 Units-I & II
Capacity	MW	(1x500) = 500	(2x500)=1000
Gross Station Heat Rate	Kcal/kWh	2481.725	2481.725
Auxiliary Power Consumption	%	6.25	6.25
Weighted average GCV of oil	Kcal/lit	10260	10260
Weighted average GCV of Lignite	Kcal/kg	2610	2610
Weighted average price of oil	Rs/KL	42958.90	42958.90
Weighted average price of Lignite	Rs/MT	2132.25	2132.25
Rate of Energy Charge (ex-bus)	Rs/kWh	2.200	2.200

36. The price of lignite considered as above is subject to adjustment in terms of Regulation 36 of the 2019 Tariff Regulations. ECR, on month to month basis, shall be calculated as per Regulation 43(2)(a) of the 2019 Tariff Regulations.

37. It is noticed that Unit-I of the generating station has been declared under commercial operation on 28.12.2019. The Petitioner shall amend the tariff petition taking into consideration the actual COD of the units of the generating station, with copy to the Respondents.

**Sd/-**  
**(I.S.Jha)**  
**Member**

**Sd/-**  
**(Dr.M.K.Iyer)**  
**Member**

**Sd/-**  
**(P.K.Pujari)**  
**Chairperson**



**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 277/GT/2014**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson  
Shri A.K. Singhal, Member  
Shri A.S. Bakshi, Member  
Dr. M.K. Iyer, Member**

**Date of Order: 11 July, 2017**

**In the matter of**

Approval of tariff of Vallur Thermal Power Station (3 x 500 MW) for the period 2014-19

**In the matter of**

NTPC Tamil Nadu Energy Company Limited  
No. 123, G- Block, Anna Nagar (East)  
Chennai- 600102

**...Petitioner**

**Vs**

1. Transmission Corporation of Andhra Pradesh Ltd.  
Vidyut Soudha, Khairatabad,  
Hyderabad - 500 082.
2. Southern Power Distribution Company of A.P. Ltd.  
D.NO:19-13-65/A Srinivasapuram,  
Tiruchanoor Road Tirupathi- 517 501
3. Eastern Power Distribution Company of A.P. Ltd.  
P&T Colony, Seetammadhara,  
Vishakapatnam - 503 013
4. Transmission Corporation of Telangana Ltd.  
Vidyut Soudha Khairatabad,  
Hyderabad - 500 082
5. Northern Power Distribution Company of Telangana,  
H.No. 1-1-504, Opp. NIT petrol Pump,  
Chaityanayapuri colony, Hanmkonda,  
Warangal - 506 004
6. Southern Power Distribution Company of Telangana  
2nd Floor, H. No. 6-1-50, Mint Compound,  
Hyderabad-500 063
7. Power Company of Karnataka Limited  
KPTCL Complex, Kaveri Bhawan,  
Bangalore - 560 009
8. Bangalore Electricity Supply Company Ltd  
Krishna Rajendra Circle, Bangalore-560 001
9. Mangalore Electricity Supply Company Ltd  
Paradigm Plaza, A.B. Shetty Circle,  
Mangalore-575 001



10.Chamundeshwari Electricity Supply Co. Ltd.,  
Corporate Office No. 927, L.J.Avenue,  
New Kantharaj Urs Road Saraswathipuram,  
Mysore - 570 009

11.Gulbarga Electricity Supply CompanyLtd.,  
Main Road, Gulbarga, 585102

12.Hubli Electricity Supply Company Ltd.  
Corporate office, P.B. Road, Navanagar  
Hubli - 580 025

13.Kerala State Electricity Board  
Vaidyuthi Bhavanam, Pattom  
Thiruvananthapuram - 695 004

14.Tamil Nadu Generation & Distribution Corporation Ltd.  
144, Anna Salai,  
Chennai - 600 002

15.Electricity Department,  
Government of Puducherry,  
137, NSC Bose Salai,  
Puducherry-605 001

#### **Parties present:**

Shri M.G. Ramachandran, Advocate, NTECL  
Ms. Poorva Saigal, Advocate, NTECL  
Shri Nishant Gupta, NTECL  
Shri Patanjali Dixit, NTECL  
Shri Rohit Chahabra, NTECL  
Shri S. Vallinayagam, Advocate, TANGEDCO

#### **ORDER**

This petition has been filed by the petitioner, NTPC Tamil Nadu Energy Company Limited (hereinafter 'NTECL'), a joint venture company of NTPC and Tamil Nadu Electricity Board, for approval of tariff of Vallur Thermal Power Project (3 x 500 MW) ('the generating station') for the period 1.4.2014 to 31.3.2019 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (referred to as 'the 2014 Tariff Regulations').

2. The investment approval of the project was accorded on 14.7.2007 by the Board of the Petitioner company for Stage-I, Phase-I comprising of two units of 500 MW at a cost of ₹5552.78 crore and Phase-II comprising of one unit of 500 MW at a cost of ₹3086.78 crore on 19.5.2009. The petitioner has entered into Power Purchase Agreement (PPA) with the respondents herein for supply of power generated from the project to the respondents in terms of the allocation made by the Ministry of Power, Government of India vide letter dated 28.9.2010.



3. The generating station with a capacity of 1500 MW comprises of two units of 500 MW each in Phase-I and one unit of 500 MW in Phase-II. The dates of commercial operation of the units of the generating station are as under:

Unit-I	29.11.2012
Unit-II	25.8.2013
Unit-III	26.2.2015

4. The Commission vide order dated 8.2.2016 in Petition No.198/GT/2013 had approved the tariff of the generating station from the date of COD of Unit-I (29.11.2012) to 24.8.2013 and for Units- I and II (combined) from the COD of Unit-II (25.8.2013 ) to 31.3.2014. Aggrieved by the said order dated 8.2.2016, the petitioner had filed review petition (Petition No. 28/RP/2016) on various issues and the Commission vide order dated 18.4.2017 had disposed of the same, revising the tariff of Units-I and II of the generating station. Accordingly, the annual fixed charges determined vide order dated 18.4.2017 is as under:

	(₹ in lakh)		
	2012-13	2013-14	
	29.11.2012 to 31.3.2013	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	123 days	146 days	219 days
	1 Unit	1 Unit	2 Units
Return on Equity	4608.81	5564.20	14910.91
Interest on Loan	8776.71	10408.64	25412.02
Depreciation	5379.78	6560.17	16452.66
Interest on Working Capital	1412.82	1658.53	6576.92
O&M Expenses	2580.98	3248.00	9744.00
Secondary fuel oil cost	618.83	736.56	2114.02
<b>Total annual fixed charges</b>	<b>23377.94</b>	<b>28176.10</b>	<b>75210.54</b>

5. The opening capital cost as on 1.4.2014 and 26.2.2015 and the annual fixed charges for the period 2014-19 claimed by the petitioner are as under:

#### Capital cost

	(₹ in lakh)	
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015
Opening Capital Cost on Cash basis	577317	852103.56
Notional IDC capitalised as on 31.3.2014	6445.34	1241.76
Additional capitalization	71.03	1551.20
Liabilities Discharged	8103.17	7288.91
<b>Closing Capital cost</b>	<b>591936.57</b>	<b>862185.43</b>



**Annual Fixed charges**

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
Return on Equity	27335.00	39886.09	52955.15	56401.27	58374.99	59134.21
Interest on Loan	42158.70	62054.08	62322.62	61487.68	58573.12	53890.98
Depreciation	29234.76	43216.25	45350.08	48449.86	50038.23	50644.74
Interest on Working Capital	9859.41	14735.04	15188.11	15386.50	15506.09	15540.87
O&M Expenses	16441.00	23641.00	25200.91	26714.33	28398.75	30186.60
Secondary fuel oil cost	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total annual fixed charges</b>	<b>125028.87</b>	<b>183532.46</b>	<b>201016.87</b>	<b>208439.64</b>	<b>210891.19</b>	<b>209397.40</b>

6. The petition was heard on several dates and the Commission after hearing the matter on 16.2.2016 reserved orders in the petition after directing the petitioner to submit certain additional information vide record of proceedings of the said hearing. In compliance with the said directions, the petitioner has submitted the additional information and has served copies on the respondents. The respondents, KSEB and TANGEDCO have filed their replies and the petitioner had filed its rejoinder to the said replies. Based on the submissions of the parties and documents available on record, we proceed to determine the tariff of the generating station, on prudence check, as stated in subsequent paragraphs.

**Schedule of Commissioning**

7. The scheduled COD and the actual COD of the three units of the generating station are as under:

Unit Nos.	Date of LOA	Schedule COD as per LOA	Actual COD	Time Overrun (in months)
I	13.8.2007	10.2.2011	29.11.2012	21.63
II		10.8.2011	25.8.2013	24.53
III	28.7.2009	27.1.2013	26.2.2015	25.0

8. The Commission in order dated 8.2.2016 had examined the issue of time overrun in respect of Units-I and II and had allowed the time overrun of 16 months for Unit-I and 18 months for Unit-II of the generating station. Hence, the time overrun in respect of Unit-III of the generating station has only been considered in this order.

9. The investment approval for Unit-III of the generating station was approved in May 2009 and the main plant for Unit-III was awarded on 28.7.2009 (zero date). The schedule date for





declaration of commercial operation of Unit III was 27.1.2013 and the actual date of COD of Unit-III is 26.2.2015, thereby resulting in the delay of 25 months.

#### **Admissibility of Additional Return on Equity**

10. In terms of the provisions of the 2014 Tariff Regulations, the timeline specified for completion of different units of green field projects (Coal/lignite) with a unit size of 500 MW from the date of investment approval is 42 months for first unit and thereafter, at an interval of 6 months each for subsequent units. The actual COD of Unit-III/ generating station is 26.2.2015 and the date of investment approval is May, 2009. Thus, the time taken for COD of Unit-III is 69 months from the date of Investment approval which is beyond the timeline of 54 months as specified under the 2014 Tariff Regulations. Accordingly, the generating station is not entitled to Additional Return on Equity of 0.5% for timely completion in terms of the 2014 Tariff Regulations.

#### **Time and Cost Overrun**

11. As stated above, the time overrun in case of Unit-III is 25 months as the COD of the said unit is 26.2.2015 as against the schedule COD of 27.1.2013 and the same is being examined in this order. The petitioner vide affidavit dated 18.8.2014 has furnished the reasons for time overrun. However, the Commission vide ROP of the hearing dated 16.2.2016 had directed the petitioner to furnish details with respect to the delay in the COD of Unit-III and also for clarification as to whether there was any overlapping of time overrun due to common activities with regard to other units. In compliance with the above directions, the petitioner vide affidavit dated 3.5.2016 has furnished the major reasons for time overrun of Unit-III as detailed under:

SI No	Period	Total months	Reasons for the delay
1.	November, 2010 to June, 2011	8	On account of cyclone JAL
2.	December, 2011 to August, 2012	8	On account of cyclone THANE
3.	September, 2012	1	On account of civil contractor M/s Gammon
4.	July, 2014 to February, 2015	8	On account of NGT ban on Earth quarrying

#### **Delay due to Cyclones (JAL & THANE)**

12. The petitioner has submitted that two cyclones namely JAL in November, 2010 and THANE in December, 2011 had affected the progress of the work adversely leaving behind a trail of



devastation. Accordingly, the submissions of the petitioner under this head are summarized as under:

- (a) Cyclone and heavy rainfall has created huge impact on the infrastructure like approach road, construction, supply etc. for carrying out the project activities. The approach roads were completely washed away and this caused problems in movement of the trucks affecting the delivery of materials to the site, movement of material handling equipments like hydra, cranes etc affecting the progress of the work. This has brought down the project works to a standstill.
- (b) While the material supply was affected due to damage to the approach road on one hand, the manpower was completely de-mobilized due to cyclones and heavy rainfall on the other hand. The project is situated in close proximity to sea and hence aftermaths of cyclones are hugely felt in the project premises. The Cyclones have caused severe damages to the temporary sheds of contracts & the labor colony. The heavy rainfall accompanied by cyclone has resulted in flooding of labor colony necessitating the laborers to be mobilized to safe locations. NTECL took swift action in ensuring that the laborers were rescued to safer locations by collaborating with the agencies. However, on account of panic that was caused during that time, lot of laborers left to their home towns and it took lot of time to re-mobilize the laborers to the site back to work.
- (c) In addition to the damage caused to the labor colonies, severe damage also happened to the established infrastructure inside the site premises such as failure of construction supply due to falling of electrical poles carrying HT lines. Power supply was affected causing added difficulties in accomplishing rescue operations. Also, in order to bring the labor back to the site, labor colonies were to be re-built to provide safe accommodation to the laborers which also took lot of time on its part. To re-build the labor colonies, water logging happened on account of heavy rainfall needed to be de-watered. All these activities took lot of effort and time for NTECL such that project works almost came to standstill condition for a period of 08 months each for cyclone JAL and THANE. The newspaper clippings showing the damage caused by the cyclones in the city of Chennai is annexed in Annexure IV a of the petition.
- (d) All the structural works in the generating station were fabricated in the fabrication yard set up in premises of the generating station. The fabrication yards were completely washed away and the activities were affected thereby causing delay in completion of structural and thereafter subsequent civil works.
- (e) The unprecedented rains in 2010 and 2011 had a monthly maximum rainfall of 418 mm and 637mm respectively. There was huge water logging and flooding during periods of



heavy rainfall. All the civil foundation works which were started and in their early stages were completely water logged. The water logged areas were to be de-watered to commence the works but since all the surrounding areas were also water logged, there was no way out for the water to be de-watered to other areas. This process of de-watering the complete water logged areas and then preparing the foundation area for carrying out further civil works took a lot of time.

- (f) The boiler erection work of Unit-III was hugely affected due to JAL in November 2010 and this has caused delay of 08 months for completion of the activity.
- (g) There was a delay of 16 months in completion of TG deck and TG foundation works on account of cyclones and incessant rainfall in 2010 (8 months) and 2011 (8 months). This has caused delay of about 13 months in commencement of condenser erection works and 16 months in commencement of TG erection works, both being parallel activity was however completely dependent on the casting of TG deck & TG civil foundation works.
- (h) In case of completion of TG foundations, the civil contractor could not recover from the damage caused by cyclones and rainfall since civil works are the most affected works in case of natural calamities. The momentum with which the work has to progress, especially civil works, could not be regained after the devastating effects of cyclones. The civil contractor required a lot of time and energy in order to bring the condition to normal and thereafter commence the works such as re-establishing the labour colony, bringing the de-mobilized manpower to site, de-watering the foundation works, removing the debris etc and after all these works were completed and when the situation was brought back to workable condition, only then further works could be taken up. As stated above, the devastation caused by the cyclone/heavy rainfall and its impact in bringing the site conditions to the point where work could be taken up again was huge.
- (i) There is a delay of 17 months in actual synchronization with respect to scheduled date of synchronization. As stated above, 16 months of delay is attributable to cyclones and heavy rainfall and 1 month delay in completion of boiler foundations is attributable to the poor performance of the contractor.

#### **Delay by Civil Contractor (1 Month)**

13. The petitioner has submitted that in case of Unit-III the civil foundation works were progressing at a rapid pace and hence the delay at site activities due to effect of cyclones and rainfall were hugely felt or impacted at Unit-III. It has however submitted that in order to comply with the time schedule by increasing the pace of work to compensate for the time lost, the



petitioner has expressed deep concerns about progress of civil works to M/s Gammon India Ltd. several times. The petitioner has also submitted that even after a lot of reviews, follow-ups and deliberations at top management level, M/s Gammon India Ltd. could not speed up the pace of progress of work. The petitioner had insisted the civil contractor that the condenser and turbine erection works could be taken up only after casting of TG Deck and sought the personal intervention to ensure that no further delays happen. Accordingly, the petitioner has submitted that it has taken best efforts to bring back the project as close as possible to the scheduled timeline. However, despite the efforts of the petitioner the delay could not be compensated due to the above said uncontrollable reasons not attributable to the petitioner. The petitioner has submitted that in addition to the delay caused due to cyclone and incessant rainfall, there has been minor delays in completion of specific milestones on account of contractor such as boiler pressure parts erection, acid cleaning, etc. However, the same is compensated by exceptionally high performance in activities like steam blowing for which 50 days has been envisaged as schedule duration but completed in 19 days. Accordingly, the petitioner has submitted that the major delay causing time overrun in achieving synchronization of Unit-III was on account of cyclones and unprecedented rainfall in 2010 and 2011 which is completely beyond the control of the petitioner.

**National Green Tribunal ban on Earth quarrying (8 months)**

14. The petitioner has submitted the following causes of delay under this head:

(a) The delay of 8 months was due to ban on earth quarrying by National Green Tribunal (NGT) vide order dated 28.3.2014 which resulted in the non-issuance of Environment Clearance (EC), which is a pre-requisite for digging/quarrying. All this had ultimately stopped the Ash dyke works and consequently delayed the declaration of COD of Unit-III. NGT finally lifted the restriction of the issuance of EC by SEIAA vide order dated 13.1.2015. Consequent upon this EC was issued on 11.2.2015 for mining / excavation of earth to be used for ash dyke works at the project. Subsequently, allout efforts were made and Unit-III was declared under commercial operation on 26.2.2015. Thus, the stoppage of earth quarrying from July, 2014 to February, 2015 resulted in a delay of 8 months which was beyond the control of the petitioner.

15. The petitioner has submitted that there was no overlapping of time overrun in Unit-III due to common facilities with respect to Units I and II. It was also submitted that the time overrun in



Unit-III was due to reasons exclusive in Unit-III only thereby affecting the main plant works (TG and boiler works) of Unit-III only. In response to the directions in ROP of the hearing dated 10.7.2015, the petitioner has submitted that the declaration of COD of Unit-III got delayed upto 25 months considering a delay of 16 months in TG & condenser erection and 9 months delay is attributed to the delay in declaration of COD alone. It has further submitted the following reasons for delay from synchronization to COD of Unit-III.

- a) Unit-III was synchronized and commissioned on 28.2.2014. After assessing the progress of works, the petitioner initially planned to declare the commercial operation of Unit III within 6 months of initial synchronization i.e 28.8.2014. However, despite the best efforts by the petitioner, COD could not be declared due to delay in completion of 'In plant coal handling system' for bunkering coal for regular operation.
- b) The petitioner had filed miscellaneous petition seeking permission for injection of infirm power beyond six months i.e. 28.8.2014 from the date of initial synchronization for a period of three months beyond 28.8.2014 in terms of Regulation 8 (7) of the CERC (grant of connectivity and long term access and medium term open access in interstate transmission and related matters) Regulations 2009 as amended from time to time.
  - i. Coal Handling System contract was awarded to M/s BHEL ISG on 29.3.2010 and as per contract all the facilities related to Units I, II and III were to be completed by November, 2011, May, 2012 and November, 2012 respectively.
  - ii. M/s BHEL-ISG has sub-contracted various works relating to 'In plant CHP' package to M/s Tecpro (Mechanical Works), M/s CGL (Electrical) and M/s Prasad & Co (Civil/Structural works).
  - iii. The progress of the work was unsatisfactory even after a lot of reviews and follow ups. On 10.1.2014 the petitioner communicated to M/s BHEL-ISG intimating slow progress of work in all areas of CHP due to issues of BHEL with their sub-agencies. The agency M/s Tecpro had practically stopped working due to various internal problems.
  - iv. On 25.2.2014, the petitioner intimated BHEL about the planned commissioning of Unit III in February 2014 and made a specific remark that BHEL-ISG is not able to take up erection activities due to non-availability of materials and erection agencies and insisted to deploy erection agency on war footing to complete the system latest by May 2014 to facilitate declaration of commercial operation of the unit.
  - v. As the progress of the work was not satisfactory and the unit was already commissioned, a meeting was held at M/s BHEL- ISG office on 14.03.2014 to discuss the execution status of In-plant Coal Handling system. The petitioner pointed out that its Unit III is synchronized on 28.2.2014 and was targeting COD in July 2014. It was also pointed out that trial operation of the unit needs to be completed before



COD for which all associated facilities of CHP was required to be completed latest by June, 2014.

- vi. Subsequently on 26.3.2014, M/s BHEL - ISG had terminated erection contract with M/s Tecpro citing reasons of non-performance and delay in completion of project as per schedule. Further, M/s BHEL - ISG decided to award the pending works to other agencies.
- vii. On 25.4.2014, the petitioner emphasized BHEL-ISG that as per CERC's Regulations, COD is to be declared within six months otherwise there could be issues relating to injection of infirm power.
- viii. After highlighting and representing the issues in various forums, M/s. BHEL- ISG finally awarded the erection works of CHP In plant package to two sub-agencies namely M/s ESENTEE and M/s UK MECON and the works commenced only in the first week of June 2014.
- ix. With all essential systems being ready and with only conveyor works pending at the time of initial synchronization, the petitioner was of the view that, it shall achieve COD of unit III well before the stipulated time of six months from initial synchronization. Further, with respect to the CHP works, the petitioner has put all out efforts from all possible directions to ensure that M/s BHEL and its sub-agencies complete the works for timely commercialization of Unit III.
- x. The petitioner had submitted in Petition No. MP/129/2014 that it had taken up the issue of delay in erection and commissioning in various forums and had also written several letters to M/s BHEL-ISG. The petitioner made all efforts from all possible directions to pressurize M/s BHEL- ISG to complete the works on time to ensure Unit III readiness for COD.
- xi. The petitioner approached the Commission seeking permission to inject infirm power beyond six months from the date of first synchronization (28.8. 2014). Keeping in view the delay and the Commission vide order dated 25th August, 2014 granted permission to Unit III to inject infirm power into the grid up to 15.10. 2014.
- xii. After completion of the In-plant CHP works, bunkering was carried out and the petitioner was preparing to go ahead with the trial operation of Unit III, but due to catastrophic failure of one of the CW Pump, trial operation could not be completed. Sea water with IDCT was envisaged for the generating station as circulating water for condenser cooling system. The generating station has been provided with 6 no's of CW pumps for three units (2 per unit). The pumps are of vertical wet pit and impeller pull out type pumps manufactured by M/s WPIL in collaboration with MHI (Japan). Since the pumps are of impeller pull out type pumps, stand by pumps are not envisaged in the scheme. The petitioner had been facing severe problems with the availability of pumps owing to high pump vibration and high motor thrust bearing temperature.
- xiii. The petitioner took up the problems associated with pumps with the manufacturer, reviewed and revised several engineering aspects of the pump to overcome the vibration problem. The pump had undergone several modifications such as





modification at site, modification at WPIL (manufacturer) works and redesign/design ratification by WPIL in association with MHI (Japan). The modifications carried out at site reduced the failure rates, however, the manufacturer proposed to change the design of impeller like introduction of additional shells in the suction bell, flow stream liner in the bowl guide, provision of leather gaskets between the taper seating surface of the bowl and bowl guide to address the vibration problem. All the above modifications have been made in one of the pump.

xiv. The petitioner relied on the availability of pumps, since the various ratifications carried out has reduced the failure rates of pumps. On 2.9.2014, the petitioner had given a letter to M/s WPIL intimating the major failure of the said CW pump and asked M/s WPIL to perform inspection and root cause analysis.

xv. On 10.9.2014, the petitioner wrote to M/s WPIL expressing serious concerns over sustained high vibration level and repeated failure of pumps and motors and also insisted on the requirement of all the 6 pumps in proper working condition for declaration of commercial operation of the Unit by September, 2014.

xvi. NETRA (Research & Development wing of NTPC Ltd) also studied the vibration problems of CW pumps in Vallur and reviewed the possibilities to overcome the problem.

xvii. In view of the above circumstances, the petitioner approached the Commission for injection of infirm power beyond 15.10.2014 and up to 31.12.2014 for demonstrating full load trial run and before declaration of the COD of the said unit. The Commission vide order dated 17.10.2014 allowed the petitioner to inject infirm power up to 31.12.2014. In line with the Tariff Regulations specified by the Commission, the petitioner completed 72 hours full load trial operation on 10.12.2014 before declaration of COD. During the preparatory activities for COD, high vibration was observed in the Turbine shaft. To accomplish sustained and reliable operation of the Unit, it was decided along with the Turbine manufacturer M/s BHEL to rectify the vibration problem before declaration of COD. After rectifying the turbine vibration problem, Unit III was declared under commercial operation w.e.f. 26.2.2015.

16. In the above circumstances, the petitioner has submitted that it took best efforts from all possible directions to declare COD within 28.8.2014 but due to continuous unforeseen problems and difficulties, the COD was delayed from the target date and could be done only on 26.2.2015. It has further submitted that the failure of CW pump and problem of turbine vibration were last minute surprises and completely unforeseen instances which had caused the delay of a further period of 6 months from the planned date of declaration of commercial operation. The petitioner has submitted that the Commission while granting extension of time for injection of infirm power had considered the bonafide reasons and circumstances on account of which the petitioner had sought extension of time for injection of infirm power. Accordingly, the petitioner has prayed that



the delay in declaration of COD due to reasons as stated above may be considered to be beyond the control of the petitioner.

### **Submission of Respondents**

#### **KSEB**

17. The respondent, KSEB vide affidavits dated 24.11.2014 and 9.1.2015 has submitted as under:

(a) The reasons furnished by the petitioner that there was delay in tendering process and consequential delay in award of packages due to inclusion of Unit-3 requirement also in balance of Plant packages and that the delay in award of site levelling package and main plant civil package for Stage-1 and retendering issues connected with Cooling Water equipment and Coal Handling Plant may not be allowed as these reasons are purely attributable to the petitioner and hence the delay due to awarding contracts may not be admitted and the IDC due to this delay may be disallowed from the capital cost.

(b) The submission of the petitioner that the work has been affected adversely due to unprecedented rains in 2010 and 2011 is not justifiable and may not be admitted. These delays are attributable to the petitioner as the petitioner ought to have carried out necessary follow ups for speedy execution of the work. Moreover, the petitioner before preparation of the original scope of work ought to have done necessary earth work study, pre-commissioning survey including soil investigation at the planning stage itself before preparation of scope of work.

(b)The delay due to non availability of start-up power may be admitted only after the petitioner submits the supporting documents as regards the submission that the boiler light up of unit 1 was delayed by 13 months due to delay in getting start up power as PGCIL could not make available start up power due to RoW issues and court cases.

(e) Since the petitioner is joint venture of NTPC and TANGEDCO, proper care and attention could have been taken by the petitioner to prevent theft of fabricated material. Further, the petitioner ought to have taken timely initiatives to stop the local disturbances with the help of local administration. Hence the reasoning provided by the petitioner does not substantiate the delay and may be disallowed.

#### **TANGEDCO**

18. The respondent, TANGEDCO vide affidavit 22.9.2015 has submitted that the reasons furnished by the petitioner for delay in COD clearly exhibits the inefficiency on part of the



petitioner to execute the project. It is also submitted that improper planning and coordination led to the delay in commissioning of the project. The respondent has further submitted that the beneficiaries should not be burdened with the escalated project cost as scheduled and hence the Commission may negate the claim of the petitioner as the delay does not fall within the parameters for uncontrollable factors. In response, the petitioner in its rejoinder has submitted that the project activities/ items are inter-related and completion of one activity has a consequential effect on the commencement of the following activity. It is also stated that any delay in an activity/ item shall cause delay in commencement of other activities. Accordingly, it has submitted that the time overrun in the COD of the project may be condoned.

### **Analysis and decision**

19. We have examined the submissions of the parties and the documents available on record. The Appellate Tribunal for Electricity (the Tribunal) in its judgment dated 27.4.2011 in Appeal No.72 of 2010 has laid down the following principle for prudence check of time overrun and cost overrun of a project as under:

*"7.4. the delay in execution of a generating project could occur due to following reasons:*

*Due to factors entirely attributable to the generating company, e.g.,*

*i. Imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.*

*ii. Due to factors beyond the control of the generating company e.g.*

*Delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.*

*iii. Situation not covered by (i) & (ii) above.*

*In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/supplied of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices.*



20. The factors responsible for the delay in the commissioning of the unit III of the generation station as summarized by the petitioner are as under:

	Period
On account of cyclone JAL	8 months (November, 2010 to June, 2011 )
On account of cyclone THANE	8 months (December, 2011 to August, 2012)
On account of delay by Civil Contractor M/s. Gammon	1 month (September, 2012)
On account of NGT ban on Earth Quarrying	8 months (July, 2014 to February, 2015)

21. As stated, the schedule COD of Unit-III is 27.1.2013 against which the actual COD of the said unit is 26.2.2015. Thus there is a time overrun of 25 months. From the above submissions of the petitioner, the delay of 25 months in the COD of Unit-III can be categorized and examined as under:

- a) Delay of 13 months during the construction of the project till the first synchronization of Unit-III; and
- b) Delay of 12 months for Unit-III from the synchronization to actual COD

**Delay on account of cyclones (JAL and THANE) and unprecedented rainfall during 2010 and 2011 (16 months)**

22. The petitioner vide affidavit dated 3.5.2016 has submitted that the unprecedented rains during the years 2010 and 2011 had hampered the progress of work of TG deck and TG foundation work for 8 months from November, 2010 to June, 2011 and for a further period of 8 months from December, 2011 to August, 2012. In justification of the same, the petitioner has submitted that the material supply was affected due to damage to the approach road and manpower was completely demobilized. Accordingly, the petitioner has submitted that there was a delay of about 13 months in commencement of condenser erection works and 16 months in commencement of TG erection works as both the activities were completely dependent on the casting of TG deck and TG civil foundation works. It has further submitted that the heavy rainfall was followed by cyclone which damaged the labour colony and due to panic labourers left for their hometown. The respondent, KSEB has stated that the submissions of the petitioner that work has been affected adversely due to unprecedented rains in 2010 and 2011 is not justifiable and may not be admitted.



23. It is observed from the bar chart furnished by the petitioner vide affidavit dated 3.5.2016 that the schedule of boiler foundation work was from 28.7.2009 to 27.5.2010. The start date of the boiler foundation work was as per the original schedule date i.e. 28.7.2009 but its completion was delayed by one month with respect to the date of completion. The petitioner has furnished the reasons for the delay of one month for the work of the boiler foundation due to poor performance of the contractor. The petitioner can settle this delay as per the contractual provisions. Accordingly, we are not inclined to condone this delay of one month in completion of boiler foundation work. The original schedule of the boiler erection work up to drum lifting was five months from 28.5.2010 to 28.10.2010. However, due to consequential delay of one month in boiler foundation work, the boiler erection work was commenced on 1.7.2010 and was actually completed on 29.7.2011. Accordingly, the total time of 13 months taken for completion of boiler erection work up to drum lifting instead of 5 months as per original schedule thereby resulting in a delay of 8 months. This delay of 8 months was on account of cyclonic storm JAL in November, 2010 followed by heavy rain in December, 2010 when the boiler foundation work was in progress. It is observed from the rainfall data furnished by the petitioner that the average rainfall during the month of November and December for the previous three years i.e. 2007, 2008 & 2009 is 442.7 mm and 143.73 mm respectively, and whereas the actual rainfall was 230 mm during November, 2010 and 418 mm during December, 2010. From the bar chart furnished by the petitioner, it is noticed that there is consequential delay in boiler drum lifting, condenser erection and boiler hydro test. Thus, it could be inferred from the above that Cyclone JAL in November, 2010 followed by unprecedented rains with monthly maximum rainfall of 418 mm during the month of December, 2010 the boiler erection work, fabrication yard and civil works of TG foundation were hugely affected. Also the process of de-watering the water logged area and to carry out further civil work took considerable amount of time. In addition to this, there was disruption of labours and their colonies were damaged and accordingly rebuilding and labour colonies and remobilization to the site took considerable amount of time. Considering the fact that the delay in the above said works was on account of natural calamities, we are inclined to condone the delay due to cyclone JAL and rainfall as the same was beyond the control of the petitioner.



Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 8 months is condoned.

24. The petitioner has also submitted that there has been a delay of 8 months in the completion of the work on account of cyclone THANE during December, 2011. It is noticed from the bar chart furnished by the petitioner that the original schedule of TG erection work was for 12 months from 28.5.2011 to 27.5.2012. It is observed that the work could not be started as per original schedule of 28.5.2011 due to consequential delay because of cyclone JAL in November, 2010. Besides this, severe cyclone THANE, in December, 2011 had added to the delay in the work of TG erection which was finally started on 15.9.2012 and was subsequently completed on 24.9.2013. It is observed from the rainfall data furnished by the petitioner that the average rainfall during the month of November and December for the previous four years (i.e. 2007, 2008, 2009 & 2010) is 389 mm and 212.3 mm respectively while the rainfall remained 637 mm and 117.8 mm for the months of November, 2011 and December, 2011 respectively. In view of these facts, we find that that there was heavy rain during November, 2011 prior to the month of cyclone while the rainfall during December, 2011 is lower than the monthly rainfall data of previous four years. This disruption caused by wind and rain hampered the commencement of TG erection work. Though the rainfall data alone cannot be the basis to evaluate the amount of devastation caused by cyclone, we noticed that the similar problems faced by the petitioner like water logging, disruption of labourers, etc during the Cyclone JAL in November, 2010 was also faced by the petitioner due to cyclone THANE in December 2011. Thus, as per the submission of the petitioner, there has been a total delay of 16 months up to the start of TG erection work, (i.e. 8 months each due to Cyclone JAL in November, 2010 and THANE in December, 2011). Considering the fact that the generating station was severely affected by cyclone and rain, the delay, in our view, is attributable to natural calamities and is beyond the control of the petitioner.

25. From the perusal of the documents on record, discussion above and summary of delay, out of the total delay of 25 months as submitted by the petitioner, it is observed that there is delay of 12 months from the date of first synchronization (28.2.2014) to actual COD (26.2.2015). Therefore the total delay from date of erection/ construction to synchronization is 13 months (25-





12). Considering the delay of 1 month in boiler foundation work which is not condoned and 1 month delay by the civil contractor M/s Gammon, which has been discussed in the subsequent paragraphs, there is a total delay of 11 months (8 months due to cyclone JAL and 3 months due to cyclone THANE), from the above discussion it is inferred that delay due to cyclone THANE is only 3 months. The schedule for start of TG erection work was from 28.5.2011 and the consequential effect of cyclone JAL during November, 2010 was upto June, 2011 and hence the TG erection work should have been started by July, 2011. Accordingly, there is gap of 5 months from the effect of cyclone JAL (June, 2011) to occurrence of cyclone THANE in December, 2011. It is noticed that the petitioner has not furnished any justification regarding this gap of 5 months and has also not made out a case that there was actual delay of 8 months due to cyclone THANE in December, 2011. The petitioner has also not quantified the post cyclone activities which were undertaken by the petitioner for normalization of the effect of cyclone. In this background, we are of the considered view that there was consequential delay of 3 months due to cyclone THANE in December, 2011 which was beyond the control of the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 3 months due to cyclone THANE is condoned.

26. Based on the above discussions, the total delay of 11 months has been condoned on account of cyclone JAL in November, 2010 (8 months) and cyclone THANE in December, 2011 (3 months). Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 11 months is condoned and the generating company is given the benefit of the additional cost incurred due to time overrun. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction in the capital cost.

#### **Delay due to civil contractor (1 month)**

27. The petitioner has submitted that the delay of 1 month during September, 2012 is attributable to the working of the civil contractor M/s Gammon. It has submitted that despite persistent efforts, the contractor failed to mobilize its resources and had failed to give the desired results after the impact of the cyclones. However, from the submissions of the petitioner it is not clear as to which



work was delayed by one month due to failure of the contractor M/s Gammon to mobilize its resources and whether the said delay of one month was subsumed in the delay due to other reasons. In our view, it is the responsibility of the petitioner to maintain proper coordination, follow ups and check up in the award of and execution of contract and ensure that the work is completed within the scheduled date. It appears to us that there has been failure on the part of the petitioner in project management due to lack of coordination and accordingly, the work has been delayed. Moreover, as per contract procedure, there is declared completion date with terms and conditions and any violation of the terms and conditions of the contract would entail the contractor with imposition of penalty or recovery of LD. Hence, the delay in completion of work by the contractor cannot be said to be beyond the control of the petitioner and the responsibility squarely lies with the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (i))], the delay of one month cannot be said to be beyond the control of petitioner and hence not condoned. Therefore, the increase in cost on account of the said delay has to be borne by the petitioner. However, the Liquidated Damages (LD) and Insurance proceeds if any, received by the generating company, on account of the said delay, could be retained by the generating company.

**On account of NGT ban on Earth Quarrying (8 months)**

28. The petitioner vide affidavit dated 3.5.2016 has submitted that the delay of 8 months was due to ban on earth quarrying by National Green Tribunal (NGT) vide order dated 28.3.2014 which resulted in the non-issuance of Environment Clearance (EC), which is a pre-requisite for digging/quarrying. It has also submitted that the stoppage of Ash dyke works consequently delayed the declaration of COD of Unit-III. It has further submitted that NGT finally lifted the restriction of the issuance of EC by SEIAA vide order dated 13.1.2015 and thereafter, EC was issued on 11.2.2015 for mining / excavation of earth to be used for ash dyke works at the project. Accordingly, the petitioner has submitted that the stoppage of earth quarrying has caused delay of 8 months and same is beyond the control of the petitioner.

29. It is observed that the petitioner vide affidavit 10.7.2015 had submitted that its third unit was first synchronised on 28.2.2014 with a scheduled COD as 28.8.2014 and the actual COD is



26.2.2015. Thus, there is a gap of 12 months from the date of first synchronisation to the actual COD. The petitioner has stated that the delay of 12 months from the date of synchronisation to actual COD is due to the non-completion of CHP work which was hampered by local disturbances, contractual problems, re-tendering and award of CHP work to different agencies. From the submissions of the petitioner, it is noticed that that CHP work was awarded on 29.3.2010 with a scheduled completion date of November, 2012. The progress of the work was unsatisfactory which was cascaded by problems of local disturbances in which one worker of Sub-agency of M/s BHEL was murdered and on account of that total work on Internal CHP inside Vallur TPP got stopped for one month and contractual problem of M/s BHEL with its sub-contractor. A discussion regarding the delay of CHP work was held at Chennai by the petitioner on 26.12.2013 and accordingly the first communication was sent to BHEL by the petitioner only 10.1.2014 followed by further correspondences on 25.2.2014 and 10.3.2014. The petitioner has not indicated the steps taken by it during the period between November, 2012 (completion date of CHP work) to December, 2013 (meeting regarding delay of CHP work) and has also not furnished any documentary evidence showing the efforts taken by it or with the contractor for settlement of the outstanding issues during the period from November, 2012 to December, 2013. It is however noticed that M/s BHEL being dissatisfied with the progress of work of sub-contractor M/s Tecpro, had terminated the work of CHP on 26.3.2014 and the same was re-tendered and awarded only during the first week of June, 2014 to two sub-contractors, namely, M/s Esentee and M/s UK Mecon. Moreover, the petitioner has not furnished the actual completion date of CHP work by the said contractors in the petition.

30. However, in Petition No. 129/MP/2014 filed by the petitioner for extension of time for injection of infirm power, the petitioner had furnished the target completion date as 7.6.2014. It had also submitted in the said petition that the scheduled date of COD of 15.10.2014 could not be achieved due to high vibration and high motor thrust bearing temperature in CW pump has lead to unexpected heavy leakage in pipe lines of HVAC (AC & Ventilation) resulting in tripping of air-conditioning system of unit control room. It has further submitted that the problems associated with CW pump was taken up with the manufacturer and subsequently in Petition No. 392/MP/2014 filed by the petitioner before the Commission seeking injection of infirm power for testing including full



load testing of Unit-III of the generating station beyond six months of initial synchronization, it had indicated the target completion date as 20.11.2014 for repair of pumps. Also, the petitioner has stated that after completion of CW pump works, the 72 hour trial run operation was completed on 10.12.2014, but high vibration was observed in the turbine shaft and after rectifying the turbine shaft vibration problem, the COD of Unit-III was finally declared on 26.2.2015.

31. It is evident from the above submissions that the delay of 12 months from first synchronisation (28.2.2014) to the actual COD of Unit-III (26.2.2015) was due to the non-completion of CHP work, failure of CW pump and excessive turbine shaft vibration. In our considered view, the period of delay from July, 2014 to February, 2015 which was due to order of NGT banning earth quarrying had actually coincided with the delay due to non completion of CHP work, failure of CW pump and excessive turbine shaft vibration etc. In fact, the petitioner was not in a position to declare COD of Unit-III, even if there would have been no ban order of NGT on earth quarrying. In our view, the delay in CHP work except one month which was due to local disturbance and murder of worker and the delay due to technical problems/failure in CW pumps and turbine shaft vibration were due to non-performance of the sub-contractor of M/s BHEL /delay on the part of the contractor and cannot be said to be beyond the control of the petitioner. The petitioner is also entitled to recover the LD from the contractor for violation of the terms of the contract/non-performance of the contract and the liabilities on this count cannot be imposed on the beneficiaries. As stated, the petitioner has taken 12 months for declaration of COD of Unit-III from the date of synchronisation. Since there has been time overrun of 13 months prior to the synchronisation, the petitioner should have taken necessary steps for declaration of COD of the said unit, within 3 to 6 months after synchronisation. However, due to technical problem in machines and also due to delay in completion of CHP work, the petitioner was able to declare the COD only after 12 months from synchronisation. Considering the fact that it would normally take about 3 to 6 months for declaration of COD after synchronisation and keeping in view that some technical problems was faced by the petitioner to complete the pending works after synchronisation, we are inclined to grant a reasonable period of time from synchronisation of the unit to declaration of COD. Hence, out of the total delay of 12 months from the date of



synchronisation to declaration of COD, we are inclined to condone the delay of one month in CHP due to local disturbance and 6 months normally taken from synchronisation to COD to stabilize the unit on the ground that the said delay was beyond the control of the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii))], the total delay of 7 months is condoned and the generating company is given the benefit of the additional cost incurred due to time overrun for this period. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction in the capital cost. For the balance period of five months delay which has not been condoned, the increase in cost has to be borne by the petitioner. However, the Liquidated Damages (LD) and Insurance proceeds if any, received by the generating company, on account of the said delay, could be retained by the generating company.

32. To summarise, the delay of 11 months (out of 13 months) from the date of erection to the synchronisation of Unit-III, has been condoned due to natural calamities i.e. cyclone JAL in November, 2010 and THANE in December, 2011 as the same is beyond the control of the petitioner. However, out of the total delay 12 months from the date of synchronisation to the actual COD of Unit-III due to non completion of CHP work, failure of CW pump and excessive vibration in turbine shaft, a period of 7 months has been condoned for reasons beyond the control of the petitioner and the balance period of delay of five months is attributable to the petitioner, as narrated above.

**Impact of time overrun on contract price, IDC and IEDC etc.**

33. The petitioner vide ROP of the hearing dated 16.2.2016 was directed to furnish the details of the impact of time overrun on cost of Plant & Machinery under different packages separately. In response, the petitioner vide affidavit dated 03.05.2016 has submitted that price variation is calculated on the basis of date of scheduled COD and not on actual COD unless L2 schedule is revised. The petitioner has further submitted that L2 schedule has not been revised for any other packages except for two packages and there has not been any increase in prices of contract packages due to time overrun from the scheduled COD to the actual COD of Unit-III except for the following two packages:



(₹ in Crore)				
Sl. No.		Price variation clause (PVC) as per original L2	PVC as per revised L2	Difference
1	Station piping, FO unloading & storage package.	2.41	4.00	1.59
2	Air conditioning package	0.22	0.45	0.23
<b>Total</b>		<b>2.63</b>	<b>4.45</b>	<b>1.82</b>

34. The petitioner vide affidavit dated 30.08.2016 has submitted that on the basis of books of account no price escalation has been paid or included in the capitalization value beyond the scheduled date prescribed in the contract agreement for the work of main plant & offsite civil works Phase-II, CW system & makeup water and these amount is inclusive of cost of free issue material provided by the company. The package wise details of total capital expenditure incurred as on COD of Unit-III certified by the auditor is as under:

(₹ in crore)				
	Contract value as per LOA (excluding taxes & duties)	Payment to the contractor including escalation up to scheduled dates only	Material issued by the petitioner	Total Capital cost
C.W. system & makeup water system civil	57.00	55.54	51.54	107.08
Main plant & offsite civil works of Phase-II	160.12	120.25	135.06	255.31

35. The submission of the petitioner that there is no cost overrun in the contractual price due to time overrun has been verified from the revised project cost furnished in Form-5B of the affidavits dated 3.5.2016 and 30.8.2016. It is noticed that there is no increase in Land, Civil work, EPC and non-EPC cost but there is increase in the cost of two packages as submitted by the petitioner above. Accordingly, the pro rata reduction on account of cost overrun due to time overrun of the two packages for the said period as on COD of Unit-III is worked out as under:

(₹ in lakh)			
Total exceeded Capital expenditure till the completion or COD whichever is earlier	Total period taken from zero date to actual COD (Months)	Time overrun disallowed (Months)	Pro-rata due to Time overrun disallowed for Unit-III
	Unit-III	Unit-III	
(1)	(2)	(3)	(4)=((1)x(3))/(2)
182.00	25	7	50.96

36. The petitioner vide ROP of the hearing dated 16.2.2016 was also directed to furnish details of impact of time overrun on increase in IDC & IEDC from the scheduled COD to the actual COD of Unit-III. In response, the petitioner vide affidavit dated 3.5.2016 has submitted the break-up of the increase in IDC & IEDC from the scheduled COD to the actual COD as under:





(₹ in crore)

Cost Element	As per approved Revised Cost Estimate	As per actual as on COD of Unit-III (26.02.2015)	Increase in IDC & IEDC for the station
	(1)	(2)	(2-1)
IDC	1427.89	1564.73	136.84
IEDC	425.94	408.46	(-)17.48

37. The petitioner has furnished the increase in IDC & IEDC of the generating station as on COD of Unit-III as compared to IDC & IEDC as per RCE. However, the petitioner had not submitted the increase in IDC & IEDC for Unit-III from scheduled COD to the actual COD. It is observed from Form-5B that IDC of Unit-III as on COD is ₹57815.48 lakh and Overhead expenses in the form of establishment charges is ₹15039.40 lakh. Due to time overrun in COD of Unit-III, there is requirement of reduction in IDC & IEDC due to the disallowance of time overrun of 7 months. Thus, the pro rata deduction in Overhead expenses due to the delay of 7 months in the COD of Unit-III is worked out as under:

(₹ in lakh)

	Total period taken from zero date to actual COD (in months)	Time overrun disallowed (in months)	Overhead Expenses under IEDC	Pro-rata reduction = (4x 3)/2
(1)	(2)	(3)	(4)	(5)
As on COD of Unit-III (26.2.2015)	69.25	7	15039.40	1737.40

### Capital Cost

38. Clause (1) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

*"9(3)-The Capital cost of an existing project shall include the following:*

*(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*

*(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*

*(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15."*

39. The capital cost claimed by the petitioner as on 1.4.2014 and 26.2.2015 for tariff purpose as submitted in Form-I(i)(part-I) vide affidavit dated 10.7.2015 are as follows:



	1.4.2014 to 25.2.2015	(₹ in lakh) 26.2.2015 (COD of Unit-III) /Station to 31.3.2015
Opening Capital Cost on Cash basis	577317.00	852103.56
Notional IDC capitalised as on 31.3.2014	6445.34	1241.76
Additional capitalization	71.03	1551.20
Liabilities Discharged	8103.17	7288.91
<b>Closing Capital cost</b>	<b>591936.57</b>	<b>862185.43</b>

### Approved Cost

40. The Investment Approval of Phase-I of the project (Units- I & II) was accorded by the Board of the Petitioner Company on 14.7.2007 at a cost of ₹5552.78 crore including IDC and FC of ₹ 497.01 crore and Working Capital Margin (WCM) of Rs 129.225 crore at a price level of second quarter of 2007. Subsequently the investment approval of Phase-II (Unit-III) was accorded by the Board of the Petitioner Company on 19.5.2009 at a cost of Rs 3086.779 crore including IDC and FC of Rs 334.65 crore and WCM of Rs 66.74 crore in the first quarter of 2009. Accordingly, the total project cost as approved by the Board for three units (Phase- I & II) is Rs 8639. 557 crore. The total cost of the project (Phase-I & II) excluding WCM works put to Rs 8443.592 crore. The petitioner vide affidavit dated 3.5.2016 has furnished the Revised Cost Estimate (RCE) of Rs 10080.50 crore which includes the project cost of ₹9799.84 crore and WCM of ₹280.57 crore.

### Admitted Capital Cost

41. The Commission in its order dated 8.2.2016 in Petition No. 198/GT/2013 had approved the capital cost of ₹553348.08 lakh as on 31.3.2014 including IDC of ₹73139.32 lakh, Normative IDC of ₹1533.54 lakh and additional capital expenditure of ₹2921.00 lakh. Thereafter, the Commission vide order dated 18.4.2017 in Petition no. 28/RP/2016 had revised the capital cost as ₹ 558876.17 lakh including IDC of ₹73139.32 lakh, FC of ₹329.88 lakh, and notional IDC of ₹1533.54 lakh as on 31.3.2014. This has been considered as the opening capital cost as on 1.4.2014.

### Interest during Construction

42. As stated, there is a time over-run of 25 months in the declaration of commercial operation of Unit-III of the generating station. The time overrun involved in the COD of Unit-III has been examined and out of the total time overrun of 25 months, a delay of 17 months has been condoned



by this order on the ground that the same was not attributable to the petitioner. Based on the condonation of delay of 17 months in case of Unit-III as above, the date of scheduled COD is reset for computation IDC, IEDC etc. due to time overrun as follows:

Schedule COD as per LOA	SCOD shifted to	Actual COD	Time overrun disallowed (months)
27.1.2013	25.7.2014	26.2.2015	7

43. The petitioner has claimed IDC of ₹156473.26 lakh as on 26.2.2015 and the break-up of the same as per Form- 5B is as under:

(₹ in lakh)	
Opening IDC as on 1.4.2014	98177.19
Add: IDC in add-cap during 1.4.2014 to 25.2.2015	480.59
IDC as on 25.2.2014 pertaining to 2 units	98657.78
Add: IDC capitalised as on 26.2.2015 pertaining to Unit-III	57815.48
Total IDC claimed as on 26.2.2015 (COD of Unit-III)	156473.26

44. It is observed that the petitioner has availed loan for the project from M/s Rural Electrification Corporation Limited. As per the balance sheet as on 26.2.2015, the total loan outstanding as on 26.2.2015 is ₹589798.49 lakh (₹371464.92 lakh for Phase-I and ₹218333.57 lakh for Phase-II). IDC which is to be allowed for capitalisation has been calculated based on the details furnished by the petitioner such as loan agreements, drawl/ interest rate resets/ repayment etc and the same has been restricted up to the rescheduled COD (25.7.2014). The petitioner has not furnished the basis of allocation of IDC. Hence, details such as total interest charged to Profit and loss Account out of the total interest on the loan, amount of IDC transferred to fixed assets and IDC lying in CWIP as on COD of Unit-III have all been obtained from the financial statements for the generating station since inception of fund infusion till COD of the generating station. The total IDC computed till rescheduled COD of the generating station has been apportioned as under based on the proportion worked out with the above-mentioned details:

(₹ in lakh)	
	IDC Allowed
IDC allowed as on COD of Unit-I and Unit-II vide order dated 8.2.2016 in Petition No. 198/GT/2013	73139.32 (38660.53 for Unit-I and 34478.79 for Unit-II)
IDC allowed as on COD of Unit-III	51969.73
<b>Total IDC allowed for capitalization till Scheduled COD</b>	<b>125109.05</b>



The IDC allowed as above is subject to revision, based on the allocation details to be furnished by the petitioner at the time of truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

#### Normative IDC

45. The petitioner has claimed normative IDC of ₹1241.76 lakh from 1.4.2014 to 25.2.2015, based on the deployment of equity in excess of 30% of the total expenditure based on the computation vide Form-14A. Accordingly, the normative IDC has been computed and allowed based on the details namely actual deployment of debt and equity on quarterly basis, cash expenditure incurred and rate of interest on actual loan portfolio furnished by the petitioner. The Normative IDC (restricted upto 25.7.2014) allowed for the purpose of tariff is under:

(₹ in lakh)	
Normative IDC already allowed up to 31.3.2014	2412.88
Normative IDC from 1.4.2012 to 25.7.2014	435.75
Normative IDC allowed till 25.7.2014	<b>2848.63</b>

#### Incidental Expenditure during Construction

46. The petitioner has claimed Incidental Expenditure during Construction (IEDC) of ₹30430.76 lakh in Form-13D. The petitioner was directed vide ROP of the hearing dated 16.2.2016 to furnish the reconciliation of IEDC claimed vide Form 13D as against Form 5B and in response, the petitioner vide affidavit dated 3.5.2016 has submitted that the amount of IEDC capitalised as on COD of Unit-III is ₹275.426 crore (on cash basis) and does not include IEDC pertaining to CWIP. The IEDC as per Form 13 D includes IEDC pertaining to CWIP amounting to ₹28.8808 crore. As stated above, the pro- rata reduction in overhead expenses due to the delay of 8 months in COD of Unit-III as worked out in the table above is ₹1520.23 lakh. This amount has been considered for the purpose of capital cost and the same is subject to revision based on the details of increase in IDC and IEDC for Unit-III from scheduled COD to the actual COD along with the break-up of expenditure to be furnished by the petitioner at the time of truing- up of tariff of the generating station.

#### Initial Spares

47. Regulation 13 of Tariff Regulations 2014 provides for initial spares as under:



*"13. Initial Spares: Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:*

*(a) Coal-based/lignite-fired thermal generating stations - 4.0%*

*Provided that:*

*i. where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:*

*iv. for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the breakup of head wise IDC & IEDC in its tariff application."*

48. The Commission vide order dated 8.2.2016 in Petition No.198/GT/2013 had allowed the capitalization of initial spares amounting to ₹1190.00 lakh as on actual date of COD of Unit-I and ₹982.00 lakh as on actual date of COD of Unit-II. Accordingly, the total initial spares capitalized as on COD of Units-I&II (combined) is ₹2172.00 lakh. The COD of the Unit-III of the generating station is 26.2.2015 and accordingly, the cutoff date of the generating station is 31.3.2018. The petitioner vide affidavit dated 10.7.2015 has claimed Initial spares of ₹8700 lakh during 2015-18 (₹1600 lakh in 2015-16, ₹3500 lakh in 2016-17 and ₹3600 lakh in 2017-18) on projection basis. Thus, the total initial spares up to cut-off date of the generating station works out to ₹10872 lakh (2172+8700). The petitioner vide Form 5B of the affidavit dated 10.7.2015 has furnished the anticipated Plant and Machinery cost of ₹500369.49 lakh up to 31.3.2018. Therefore, the projected initial spares of ₹10872 lakh claimed by the petitioner up to cut off date of the generating station works out to 2.17% of the Plant & Machinery cost which is within the ceiling limit specified under the above regulations and hence allowed. The petitioner is however directed to furnish the break-up of actual plant & machinery cost and the details of initial spares capitalized up to the cut-off date at the time of truing-up.

#### **Infirm Power**

49. The petitioner vide affidavit dated 10.7.2015 has submitted that the revenue earned from sale of infirm power as on COD of Unit-III is ₹1740.85596 lakh as on COD of Unit-III. It has also submitted that the infirm power has been capitalized with the respective units of the generating station. In view of this submission, no adjustment in the capital cost has been made towards revenue earned from sale of Infirm Power from Unit-III of the project till the COD of Unit-III.



**Liquidated Damages**

50. The petitioner has not furnished any details regarding the amount of Liquidated Damages (LD) recovered. Accordingly, the petitioner is directed to submit the complete details of the amount of LD recovered for delay under the contract of different packages at the time of truing up.

**Additional Capital Expenditure**

51. The petitioner has claimed additional capital expenditure of ₹71.03 lakh during the period from 1.4.2014 to 25.2.2015 and ₹1551.20 lakh from 26.2.2015 to 31.3.2015. It is also submitted that liabilities amounting to ₹8103.17 lakh during 1.4.2014 to 25.2.2015 and ₹7288.91 lakh during the period from 26.2.2015 to 31.3.2015 have been discharged. These amounts have been allowed and considered in the capital cost of the generating station.

52. Regulation 14 of the 2014 Tariff Regulations provides for additional capitalization of an existing project as under:

*“14. Additional Capitalization and De-capitalization: (1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

*(i) Un-discharged liabilities recognized to be payable at a future date;*

*(ii) Works deferred for execution;*

*(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;*

*(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and*

*(v) Change in law or compliance of any existing law:*

*Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff. “*

53. The capital expenditure has claimed projected additional capital expenditure under Regulation 14(1) of the 2014 Tariff Regulations in respect of the generating station for the period 2015-19 as summarized under:

Sl. No.	Head of work / Equipment	(₹ in lakh)			
		2015-16	2016-17	2017-18	2018-19
1	Preliminary investigation & Site development	0.00	1250	0.00	0.00
2	Steam Generator Island	1759.28	0.00	0.00	0.00
3	Turbine Generator Island	2433.99	0.00	0.00	0.00





4	DM water Plant	241.00	0.00	0.00	0.00
5	Chlorination plant	17.10	0.00	0.00	0.00
6	Ash Handling system	8299.01	0.00	2760.57	0.00
7	Coal Handling Plant	7809.00	0.00	0.00	0.00
8	Air Conditioning & Ventilation system	877.70	0.00	259.50	0.00
9	Fire fighting system	126.00	0.00	0.00	0.00
10	Workshop lab (inclpp)	25.00	725.00	250.00	0.00
11	Transformer package	1223.55	0.00	0.00	0.00
12	C & I Package( incl. instrn. Cable)	1384.36	251.00	96.00	0.00
13	Initial spares	1600.00	3500.00	3600.00	0.00
14	Main plant / Adm. building	5701.00	7857.00	4876.00	0.00
15	CW System	90.00	0.00	0.00	0.00
16	Ash disposal area development	1550.55	12400.0	6500.00	0.00
17	Township & colony	4182.00	9577.0	5667.00	0.00
18	Temporary Construction & enabling works	350.00	0.00	0.00	0.00
19	Chimney	416.00	0.00	0.00	0.00
20	Tools & Plant	502.33	600.00	550.00	0.00
	<b>Total</b>	<b>38587.53</b>	<b>36160.00</b>	<b>24559.00</b>	<b>0.00</b>

54. It is observed from the above that the petitioner has claimed total projected additional capital expenditure of ₹99306.53 lakh during 2015-18 (₹38587.53 lakh in 2015-16, ₹36160.00 lakh in 2016-17 and ₹24559.00 lakh in 2017-18). As stated, the cut-off date of the generating station is 31.3.2018. The claim of the petitioner within the cut-off date is towards deferred works on Land, Main Plant & Equipment package, Spares, Civil work, Construction & Pre-commissioning expenses. Since the claim of the petitioner is within the original scope of work and within the cut-off date of the generating station, the total projected additional capital ₹99306.53 lakh during 2015-18 is allowed under Regulation 14 (1) of the 2014 Tariff Regulations. The petitioner is however directed to submit the details of works asset wise/work wise included in the original scope of work along with estimate and actual expenditure, liabilities recognized to be payable at a future date and the works deferred for execution along with actual work of execution at the time of truing-up.

### Funding Gap

55. The actual cash expenditure claimed as per Form 14A is ₹881826.00 lakh. On the other hand, it is observed that the fund raised through loan, share capital and share application money is ₹854918.71lakh, which is evident from balance sheet of the generating station as on 26.2.2015. The details are as under:



(₹ in lakh)		
a	Net loan as per Balance Sheet	589798.49
b	Share capital as per Balance Sheet	253121.22
c	Share application money as per Balance Sheet	11999.00
1	Total fund raised as per balance sheet (Net loan + Share capital + Share application money) a+b+c	<b>854918.71</b>
2	Actual cash expenditure as per Form 14A	<b>881826.00</b>
	<b>Funding gap (2-1)</b>	<b>26907.29</b>

56. Thus, there is a funding gap of ₹26907.29 lakh between the fund raised and the actual capital expenditure claimed. Moreover, the actual cash expenditure based on the cash expenditure details pertaining to fixed assets and capital work in progress as per auditor's certificate is as follows:

(₹ in lakh)				
		Gross basis	UDL	Cash flow
a	Gross Block of Fixed Assets	892587.32	47164.71	845422.61
b	CWIP	49878.17	8358.03	41520.14
c	Construction stores & Equipments	8595.02	2989.91	5605.11
1	<b>Total Expenditure</b>	<b>951060.51</b>	<b>58512.65</b>	<b>892547.86</b>
2	Total fund raised as per balance sheet	-	-	<b>854918.71</b>
	<b>Funding gap (1-2)</b>	-	-	<b>37629.15</b>

57. It is noticed from the above that the cash outflow toward capital expenditure as per auditor's certificate (₹892547.86) is more than the fund raised as per balance sheet by ₹37629.15 lakh. As there exists an unexplained funding gap of ₹37629.15 lakh, it may not be a correct approach to allow capital cost for tariff based on the cash expenditure as claimed by the petitioner or as per auditor's certificate which exceeds the long term sources of finance as evident from the above table. Accordingly, the said funding gap of ₹37629.15 lakh has been considered as un-discharged liability and has been deducted from the capital cost allowed for the purpose of tariff. Similar view has been taken by the Commission in Petition no. 28/RP/2016 (review of the order in Petition no. 198/GT/2013) vide order dated 18.4.2017.

The same is subject to revision, based on the justification/ explanation to be furnished by the petitioner as regards the funding gap, at the time of truing- up of tariff.

### **Capital cost**

58. Based on the above discussions, the capital cost allowed for the purpose of tariff of the generating station is as under:



(₹ in lakh)

	2014-15 1.4.2014 to 25.2.2015	2014-15 26.2.2015 to 31.3.2015	2015-16	2016-17	2017-18	2018-19
Opening capital cost	558876.17	**827217.36	790341.99	866442.63	907730.04	933540.21
Less: unexplained gap between project funding and actual expenditure as on Unit-III COD	-	37629.15	-	-	-	-
Less: IDC/FC/FERV claimed as on Unit-III COD	-	58051.10	-	-	-	-
Less: Notional IDC included in capital cost claimed	-	1241.76	-	-	-	-
Add: IDC allowed on COD of Unit-III	-	51969.73	-	-	-	-
Add: FC allowed on COD of Unit-III	-	372.24	-	-	-	-
Add: FERV allowed on COD of Unit-III	-	235.62	-	-	-	-
Add: Notional IDC allowed	-	435.75	-	-	-	-
Less: pro-rata reduction in IEDC	-	1520.23	-	-	-	-
Less: Pro-rata reduction in two packages	-	50.96	-	-	-	-
<b>Total Opening cost</b>	<b>558876.17</b>	<b>781737.50</b>	<b>790577.61</b>	<b>866442.63</b>	<b>907730.04</b>	<b>933540.21</b>
Add: Additional capital expenditure	71.03	1551.20	38587.53	36160.00	24559.00	-
Add: Liabilities discharged	8103.17	7288.91	37277.49	5127.41	1251.17	-
<b>Closing capital cost</b>	<b>567050.37</b>	<b>790577.61</b>	<b>866442.63</b>	<b>907730.04</b>	<b>933540.21</b>	<b>933540.21</b>

(\*\* including 260166.99 capitalized for Unit-III on 26.2.2015)

**Reasonableness of Capital Cost**

59. We now examine the reasonableness of capital cost as on the COD of the generating station as under:

(₹ in lakh)

A	Capital cost including soft cost as on 26.2.2015	<b>781737.50</b>
B	Less: IDC, FC, Notional IDC, FERV allowed towards Unit-III	52777.72
C	Less: IDC, FC, Notional IDC, FERV allowed till 31.3.2014	75002.74
D	Capital Cost excluding notional IDC, IDC, FC, FERV as on COD (26.2.2015) (A-B-C)	653957.04
E	Projected capitalization up to the cut-off date (31.3.2018) (excluding IDC & Liabilities)	99306.53
F	Capital cost excluding IDC, Notional IDC, FERV and FC including Projected capitalization up to the cut-off date.(Hard cost up to cut off date as on 31.3.2018) (A-B-C+E)	753263.57

60. The benchmark hard cost as specified by the Commission in Order dated 4.6.2012 for thermal power stations with coal as fuel at 2011, December price level with 3 units of 500MW each is ₹4.48 crore/MW. As stated, the hard cost of the generating station as on COD



(26.2.2015) is ₹653957.04 lakh (₹4.36 crore/MW) and as on the cut-off date of the generating station is ₹753263.57 lakh (₹5.02 crore/MW). The benchmark capital cost for thermal power generating stations as per Commission's order dated 4.6.2012 is dynamic and based on market trends, indices, subject to adjustment based on inflation. The hard cost linked to escalation in WPI for the intervening period has been taken into account to arrive at the capital cost as on COD. The indicative benchmark norms for capital cost based on December, 2011 index as base, needs to be escalated up to February, 2015 based on the WPI index for prudence check of the capital cost. As per data available with Ministry of Commerce and Industry, Government of India, the WPI index for February, 2015 is 175.60 as against the WPI index of 157.30 as on December, 2011 resulting in inflation of 1.042. Accordingly, the indicative benchmark hard cost is worked out as ₹4.66crore/MW (1.04 x 4.48). The hard cost as on COD of Unit-III/Station is ₹4.36 crore/MW which is lower than the indicative benchmark hard cost. However, the hard cost as on cut off date of the generating station including projected capitalisation is ₹5.02 crore/MW which is higher than indicative benchmark hard cost. The main reasons for higher capital cost of generating station are due to special features viz.(a) Cross country conveyor system for transportation of coal from port to site (b) Grab un-loader and (c) Desalination Plant. It is evident from the above that the hard cost of the generating Station (Units- I, II & III) up to the cut-off date is marginally higher than the benchmark cost mainly due to addition of special features. However, the actual hard cost up to cut off date can only be assessed after the end of the tariff period when capitalization is based on actuals.

### Debt–Equity Ratio

61. Regulation 19 of the 2014 Tariff Regulations provides as under:

*(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that:*

- (i) where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- (ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
- (iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt- equity ratio.*

*Explanation - The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up*



capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilized for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

62. The petitioner has considered debt equity ratio of 70: 30 for calculation of normative loan and equity. As stated above, it is noticed from Form-14A and the Auditor's Certificate that there is a funding gap of ₹37629.15 lakh between the funds raised through long term loans/equity and the cash expenditure as on 26.2.2015 which is as under:

(₹ in lakh)		
a	Net loan as per balance sheet	589798.49
b	Share capital as per balance sheet	253121.22
c	Share application money as per balance sheet	11999.00
1	Total fund raised as per balance sheet (Net loan + Share capital + Share application money) a+b+c	854918.71
2	Actual cash expenditure as per Form 14A	881826.00
3	Actual cash expenditure as per auditor's certificate	892547.86
	Funding gap (3-1)	37629.15

63. Accordingly, the cash expenditure considered for debt equity ratio calculation has been restricted to the funds raised, i.e. ₹854918.71. The balance sheet also indicates that an amount of ₹11999.00 as share application money is pending for allotment as on 25.2.2015 and therefore, the same has not been considered as equity without its conversion into share capital. In this background, while calculating the debt equity ratio, actual equity has been restricted to share capital and the balance amount (which includes the long term loans as per the balance sheet ₹589798.49 and share application money of ₹11999.00 lakh) is considered as loan. Accordingly,



debt-equity ratio as on COD of the generating station (26.2.2015) has been worked out and allowed as under:

(₹ in lakh)	
Actual cash Expenditure (restricted to fund raised)	854918.71
Equity (Share capital as per B.S.)	253121.22
Debt (Balancing figure)	601797.49
<b>Equity</b>	<b>29.61%</b>
<b>Debt</b>	<b>70.39%</b>

64. It is noticed from the balance sheet as on 31.3.2015 that the share application money amounting to ₹11999.00 lakh as existed on 25.2.2015 (station COD) has been converted into share capital. The balance sheet position as on 31.3.2015 with respect to debt and equity is as below:

(₹ in lakh)		
		Amount
a	Net loan	589281.57
b	Share capital	265121.22
c	Share application money as per balance sheet	-

65. It appears from the above that the share application money pending allotment as reflected in the balance sheet as on 25.2.2015 was converted into equity share capital subsequently. Conversion of the said sum into equity has since been achieved and there has been increase in position of equity capital albeit after the date of COD to tune of ₹11999.00 lakh, the denial of return on such sum as equity capital for the entire project life of 25 years, in our view, is not justified. In view of the above, we, in exercise of power to relax under Regulation 54 of the 2014 Tariff Regulations, allow the revision of debt-equity ratio post COD. Similar view has been taken by the Commission in Petition no. 129/GT/2015 vide order dated 30.3.2017. Since the petitioner has not furnished the exact date of such conversion, the same has been considered w.e.f 1.4.2015 considering the balance sheet presented as on 31.3.2015. Accordingly, the debt- equity ratio as on 1.4.2015 is as under:

Equity (share capital)	265121.22
Debt	589281.57
<b>Equity%</b>	<b>31.03%</b>
<b>Debt%</b>	<b>68.97%</b>

As the equity as on 1.4.2015 is more than 30%, as per Regulation 19 quoted as above, the debt- equity ratio for the purpose of calculation of tariff has been considered as 70:30.





66. The debt-equity ratio allowed as above is subject to revision based on the reconciliation of actual cash expenditure and project funding as on COD of the generating station and date wise details regarding conversion of the share application money into share capital to be furnished by the petitioner at the time of truing-up of the tariff of the generating station.

### **Return on Equity**

67. Regulation 24 of the 2014 Tariff Regulations provides as under:

*"24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.*

*(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:*

*Provided that:*

*i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:*

*ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:*

*iii) additionalRoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:*

*iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:*

*v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:*

*vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.*

68. Regulation 25 of the 2014 Tariff Regulations provides as under:

*"Tax on Return on Equity (1)The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate".*

*(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:*



*Rate of pre-tax return on equity = Base rate / (1-t)*

*Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess."*

69. The petitioner has not claimed grossing up of RoE in the year 2014-15 and has grossed up for rest of the years (2015-16 to 2018-19) with the MAT rate of 20.9605% for the year 2013-14. It is noticed from the financial statement of the generating station for 2014-15 that there is no taxable income for the said year. As such, the claim of the petitioner is in order and the RoE for the said year has not been allowed to be grossed up. However, for the rest of the years (2015-16 to 2018-19) the petitioner has claimed grossing up of RoE. In terms of the 2014 Tariff Regulations, RoE is to be grossed up with the effective tax rate. In petitions wherein tariff has been determined in 2016-17 (for the period 2014-19) on projection basis, it has been the consistent approach of the Commission to allow the grossing up of MAT rate of 2014-15. However, in the instant case, the grossing up has not been allowed as there is no taxable income/tax payable in 2014-15. Accordingly, no grossing up of ROE is allowed for the tariff period 2014-19. The petitioner is however directed to furnish the basis of effective tax rates along with the Tax Audit Report for the period 2014-19 at the time of truing-up of tariff of the generating station in terms of Regulation 8 of the 2014 Tariff Regulations. Accordingly, return on equity is worked out and allowed as under:

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
Gross Notional Equity	162512.91	231453.99	237173.28	259,932.79	272319.01	280062.06
Addition due to Additional Capitalisation	2376.94	2617.35	22759.51	12386.22	7743.05	-
Closing Equity	164889.84	234071.34	259932.79	272319.01	280062.06	280062.06
Average Equity	163701.38	232762.67	248553.04	266125.90	276190.54	280062.06
Return on Equity (Base Rate )	15.500%	15.500%	15.500%	15.500%	15.500%	15.500%
Tax rate for the year	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Rate of Return on Equity (Pre Tax )	15.500%	15.500%	15.500%	15.500%	15.500%	15.500%
<b>Return on Equity (Pre Tax)</b>	<b>23010.13</b>	<b>3360.71</b>	<b>38525.72</b>	<b>41249.51</b>	<b>42809.53</b>	<b>43409.62</b>



**Interest on Loan**

70. Regulation 26 of the 2014 Tariff Regulations provides as under:

*"26. Interest on loan capital: (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*

*(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*

*(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.*

*(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

*(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

*(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

*(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.*

*(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.*

*(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:*

*Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."*

71. In terms of the above regulation, the normative loan outstanding as on 31.3.2014 has been considered as normative loan as on 1.4.2014. The petitioner vide Form 13 A has submitted the weighted average rate of interest based on actual loan portfolio and the same is found to be in order. Necessary calculations for interest on loan are as under:



	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
Gross Notional Loan	396363.26	550283.50	553404.33	606509.84	635411.03	653478.15
Cumulative Repayment of Loan upto previous year	28392.62	54113.78	57803.31	99673.72	144408.60	190794.80
Net Opening Loan	367970.64	496169.73	495601.02	506836.11	491002.43	462683.35
Addition due to Additional Capitalisation	5797.26	6222.76	53105.51	28901.19	18067.12	-
Repayment of Loan during the period	25721.16	3689.53	41870.42	44734.88	46386.20	47036.42
<b>Net Closing Loan</b>	<b>348046.74</b>	<b>498702.96</b>	<b>506836.11</b>	<b>491002.43</b>	<b>462683.35</b>	<b>415646.92</b>
Average Loan	358008.69	497436.34	501218.57	498919.27	476842.89	439165.13
Weighted Average Rate of Interest on Loan	11.45%	11.45%	11.40%	11.37%	11.37%	11.37%
<b>Interest on Loan</b>	<b>37183.20</b>	<b>5307.31</b>	<b>57134.24</b>	<b>56721.98</b>	<b>54225.15</b>	<b>49954.71</b>

## Depreciation

72. Regulation 27 of the 2014 Tariff Regulations provides as under:

*"27. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

*(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*

*(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*

*Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*

*Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*

*(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*



(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

73. The weighted average rate of depreciation furnished by the petitioner vide Form 11 is examined and found to be in order. Accordingly, depreciation has been calculated as under:

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
Opening Gross Block	558876.17	781737.50	790577.61	866442.63	907730.04	933540.21
Additional Capitalization	71.03	1551.20	38587.53	36160.00	24559.00	-
Discharge of liabilities	8103.17	7288.91	37277.49	5127.41	1251.17	-
Closing Gross Block	567050.37	790577.61	866442.63	907730.04	933540.21	933540.21
Average Gross Block	562963.27	786157.55	828510.12	887086.33	920635.12	933540.21
Rate of Depreciation	5.0382%	5.0382%	5.0537%	5.0429%	5.0385%	5.0385%
Depreciable Value including amortization of lease land in 25 years	506666.94	707541.80	745659.11	798377.70	828571.61	840186.19
Remaining Depreciable Value	478274.33	653428.02	687855.80	698703.98	684163.01	649391.39
Depreciation (for the period)	<b>25721.16</b>	<b>3689.53</b>	<b>41870.42</b>	<b>44734.88</b>	<b>46386.20</b>	<b>47036.42</b>
<b>Cumulative Depreciation (at the end of the period)</b>	54113.78	57803.31	99673.72	144408.60	190794.80	237831.23



## O & M Expenses

74. Regulation 29(1) (a) of the 2014 Tariff Regulations provides the following O & M norms for coal based generating stations of 500 MW capacity:

(₹ in lakh/MW)				
2014-15	2015-16	2016-17	2017-18	2018-19
16.00	17.01	18.08	19.22	20.43

75. Proviso to Regulation 29(1) (a) of the 2014 Tariff Regulations provides as under:

*"Provided that the above norms shall be multiplied by the following factors for arriving at norms of O&M expenses for additional units in respective sizes for the units whose COD occurs on or after 1.4.2014 in the same station:*

500 MW and above	Additional 3 <sup>rd</sup> & 4th units	0.90
	Additional 5 <sup>th</sup> & above units	0.85

76. The petitioner has claimed O & M expenses in respect of the generating station as under:

2014-15		2015-16	2016-17	2017-18	2018-19
1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
14909.51	2202.18	25200.91	26714.33	28398.75	30186.60

77. The respondent, TANGEDCO has submitted that the claim of the petitioner is in excess against the norms specified for 500 MW units under Regulation 29(1) (a) of the 2014 Tariff Regulations and has prayed that excess claim may be negated.

78. We have examined the matter. The CODs of the Units-I and II of the generating station are 29.11.2012 and 25.8.2013 respectively and is within the tariff period 2009-14. However, the COD of Unit-III is 26.2.2015 and is covered within the scope of the 2014 Tariff Regulations. Accordingly, the multiplication factor of 0.90 is considered for working out the normative O & M expenses (annualized) for Unit-III of the generating station for the period 2014-19 and is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
23200.00	24664.50	26216.00	27869.00	29623.50

## Additional O & M Expenses for desalination plant

79. The petitioner has claimed additional O & M expenses of ₹441.00 lakh in 2014-15, ₹468.84 lakh in 2015-16, ₹498.33 lakh in 2016-17, ₹529.75 lakh in 2017-18 and ₹563.10 lakh in 2018-19 on estimation basis, towards chemicals, filters and membranes used in the desalination plant.





The petitioner has submitted that the plant is located near sea coast and there will be no water charges as the water will be made available from the sea itself.

80. The respondent, KSEB has submitted that the petitioner has claimed additional O & M cost on account of desalination plant over and above the normative O & M expenses allowed by the Commission. It has also submitted that the O & M expenses allowed in accordance with the 2014 Tariff Regulations have provision for meeting the expenses for desalination plant also and hence it has prayed that the said expenditure may be disallowed. The petitioner in its rejoinder has submitted that the generating station does not have any nearby water source and therefore the claim has been made for production of RO water and for other different purposes of the generating station and has accordingly prayed that the additional O & M charges claimed for desalination plant may be allowed.

81. The matter has been examined. It is noticed that the normative O & M allowed under the 2014 Tariff Regulations do not include expenses towards desalination plant. In view of this, the O & M expenses for desalination plant as claimed by the petitioner has been allowed. This is however subject to revision based on all relevant details to be furnished by the petitioner at the time of truing-up of tariff of the generating station in terms of Regulation 8 of the 2014 Tariff Regulations.

		(₹ in lakh)			
2014-15		2015-16	2016-17	2017-18	2018-19
1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
399.92	41.08	468.84	498.33	529.75	563.10

### Water Charges

82. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

*“29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check.*

*The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization”.*



83. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges furnished by the petitioner is as under:

	Remarks
Type of Plant	Coal
Type of cooling ware system	Closed circuit cooling
Consumption of water	Sea Water at present
Rate of water charges	0.0
*Total water charges in 2013-14	0.0

84. The petitioner has submitted that at present the generating station is using sea water and is not paying any water charges. However, it has submitted that in future, if any water charges are levied on the generating station, it shall approach the Commission to claim the same under O&M expenses. The petitioner has further submitted the details on actual water charges paid for the relevant year shall be furnished at the time of truing- up of tariff and shall be subjected to retrospective adjustment. Since the petitioner has not claimed any water charges on projection basis during the period 2014-19, the same has not been considered in this order. The claim of the petitioner, if any, in future shall be considered in accordance with the 2014 Tariff Regulations.

85. Accordingly, the total O&M expenses including expenses for desalination plant and water charges claimed and allowed is summarized as under:

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
Normative O&M Expenses claimed	14909.51	2202.18	25200.91	26714.33	28398.75	30186.60
<b>O&amp;M Expenses allowed</b>	14509.59	2161.10	24664.50	26216.00	27869.00	29623.50
Additional O&M expenses for desalination plant claimed	399.92	41.08	468.84	498.33	529.75	563.10
<b>Additional O&amp;M expenses for desalination plant Allowed</b>	399.92	41.08	468.84	498.33	529.75	563.10
Water Charges claimed	0.00	0.00	0.00	0.00	0.00	0.00
<b>Water Charges allowed</b>	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total O&amp;M Expenses allowed</b>	<b>14909.51</b>	<b>2202.18</b>	<b>25133.34</b>	<b>26714.33</b>	<b>28398.75</b>	<b>30186.60</b>



### Capital Spares

86. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up, shall be considered on merits, after prudence check.

### Operational Norms

87. The operational norms considered by the petitioner in respect of the generating station are as under:

Target Availability	83.0
Heat Rate (kcal/kwh)	2375
Auxiliary power consumption %	6.69
Specific Oil Consumption (ml/kwh)	0.50

88. The operational norms claimed by the petitioner are discussed as under:

### Target Availability

89. Regulation 36 of the 2014 Tariff Regulations provides as under:

*(A) Normative Annual Plant Availability Factor*

*“(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) &(e)- 85%.*

*Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed. The above provision shall be reviewed based on actual feedback after 3 years from 1.4.2014.”*

90. The petitioner has considered the Target Availability of 83% for the period 2014-19. The Commission, due to shortage of domestic coal supply has relaxed the Target Availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Accordingly, in terms of the Regulation 36(A) of the 2014 Tariff Regulations, the Target Availability of 83% is considered for the period 2014-17 and 85% for the period 2017-19.

### Station Heat Rate (kcal/kwh)

91. Regulation 36(C)(b)(i) of the 2014 Tariff Regulations provides Station Heat Rate as under:

*(C) Gross Station Heat Rate*

*(b) New Thermal Generating Station achieving COD on or after 1.4.2014*

*(i) Coal-based and lignite-fired Thermal Generating Stations*

*= 1.045 X Design Heat Rate (kCal/kWh)*



Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.

Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:

Pressure Rating (Kg/cm <sup>2</sup> )	150	170	170	247
SHT/RHT (°C)	535/535	537/537	537/565	565/593
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935	1850
Min. Boiler Efficiency				
Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86
Bituminous Imported Coal	0.89	0.89	0.89	0.89
<b>Max Design Unit Heat Rate (kCal/kWh)</b>				
Sub-Bituminous Indian Coal	2273	2267	2250	2151
Bituminous Imported Coal	2197	2191	2174	2078

Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency:

Provided also that where the boiler efficiency is below 86% for Subbituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% respectively for Sub-bituminous Indian coal and bituminous imported coal for computation of station heat rate:

Provided also that maximum turbine cycle heat rate shall be adjusted for type of dry cooling system:

Provided also that if one or more generating units were declared under commercial operation prior to 1.4.2014, the heat rate norms for those generating units as well as generating units declared under commercial operation on or after 1.4.2014 shall be lower of the heat rate norms arrived at by above methodology and the norms as per the Regulation 36(C)(a)(i).

92. The petitioner has furnished the design turbine cycle heat rate and boiler efficiency of all three units of the generating station as 1932 kcal/kWh and 85% respectively. Accordingly, the Unit design heat rate worked out is ₹2272.94 kcal/kWh (1932/0.85). In terms of the Regulation 36 (C)(b)(i) of the 2014 Tariff Regulations, new thermal generating stations achieving COD on or after 1.4.2014, the Gross Station Heat Rate= 1.045 X Design Heat Rate (kcal/kWh) i.e. 1.045 X 2272.94 = 2375.223. It also provides that the design heat rate shall not exceed the maximum design unit heat rates depending upon the pressure and temperature ratings of the units as specified by the Commission, where ceiling design heat rate for plants having temperature of 537/565 °C and pressure rating of 170 Kg/cm<sup>2</sup> using sub bituminous coal is given as 2250 kcal/kwh. The Design heat rate of the generating station is 2272.94kCal/kWh which is higher than the ceiling design heat rate of 2250 kcal/kwh. In view of this, the ceiling design heat rate of 2250



kcal/kwh has been considered as the Design heat rate for this generating station. Considering the multiplication factor of 1.045, the applicable Station Heat Rate is 2351.25 kcal/kwh (1.045 x 2250). This GSHR of 2351.25 kcal/kWh has been considered for the purpose of tariff for the period 2014-19. It is pertinent to mention that GSHR for Units- I & III was considered as 2421 kCal/kWh and hence the GSHR of 2351.25 kCal/kWh considered for 2014-19 is lower than the GSHR allowed for the period 2009-14.

### Auxiliary Power Consumption

93. Regulation 36(E)(a)(i) of the 2014 Tariff Regulation provides Auxiliary power consumption as under:

*(E) Auxiliary Energy Consumption*

*(a) Coal-based generating stations except at (b) below:*

	With Natural Draft cooling tower or without cooling tower
(i) 200 MW series	8.5%
<b>(ii) 300/330/350/500 MW and above</b>	
Steam driven boiler feed pumps	5.25%
Electrically driven boiler feed pumps	7.75%

*Provided further that for thermal generating stations with induced draft cooling tower, the norms shall be further increased by 0.5%.*

94. The petitioner has considered Auxiliary Power Consumption (APC) of 6.69 % which is not in accordance with the norm of 5.75% as specified by the Commission for 500 MW units with induced draft cooling, under the 2014 Tariff Regulations. The petitioner has considered APC of 6.69% to include the consumption for additional systems like coal transportation from port to project which consume about 6.0 MW and also additional electrical equipment installed for desalination of sea water through RO system which consume 5.25 MW (approx).

95. The petitioner was directed vide ROP of the hearing dated 16.2.2016 to submit the details of actual APC and the petitioner vide affidavit dated 3.5.2016 had furnished the following details:

Period	Generation	APC in MU	APC in %
COD of Unit-II (25.8.2013) to 31.3.2014	2875.55	206.32	7.17%
1.4.2014 to 25.2.2015	5025.96	355.93	7.08%
COD of Unit-III (26.2.2015) to 31.1.2016	7099.25	533.42	7.51%



96. It is noticed from the above that the APC furnished by the petitioner is higher than the APC of 6.69% considered by the petitioner. It has also submitted the additional electrical powers are required for the operation of cross country pipe conveyor system, Grab un-loader at Jetty installed for unloading of coal from the ship and desalination plant as there is no water source near the power plant and the project is designed to use sea water which will be converted as potable water for drinking, service water for different purposes and DM water for process make-up & equipment cooling make up through RO conversion. The petitioner vide affidavit dated 6.10.2015 has submitted that 5.99 MW is required for cross country pipe conveyor, 4.44 MW for Grab unloader at Jetty(for unloading coal from the ship) and 5.26 MW electrical equipment (for desalination of sea water through RO system). Hence, it has submitted that an additional load of 15.69 MW has been considered for calculating the APC for the generating station i.e. additional 1.04% of the APC.

97. The auxiliary consumption due to special features like desalination of sea water, coal conveying system from port to station etc. have not been considered in the operational norms under the 2014 Tariff Regulations. It is observed that the station has special features for which there will be additional auxiliary consumption for running the additional systems like coal transportation from port to project and also additional electrical equipment installed for desalination of sea water through RO system. In this background, we are inclined to relax the operational norm for APC and allow the APC of 6.69% as claimed by the petitioner. The petitioner is however directed to furnish the detail of actual Auxiliary Power Consumption, PLF of the station since COD of Unit-III to 31.3.2019 at the time of truing up of the tariff.

### **Specific Oil Consumption**

98. Regulation 36(D)(a) of Tariff Regulations, 2014 provides for Secondary fuel oil Consumption of 0.50 ml/kWh for coal-based generating stations. Hence, the Secondary fuel oil Consumption considered by the petitioner is as per norms and is allowed.





**Interest on Working Capital**

99. Sub-section (a) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*“28. Interest on Working Capital:*

*(1) The working capital shall cover*

*(a) Coal based/lignite fired thermal generating stations*

*i) Cost of coal towards stock for 15 days for pit-head generating stations and 30 days for non-pit-head generating station for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower.*

*ii) Cost of coal for 30 days for generating corresponding to the normative annual plant availability factor.*

*iii) Cost of secondary fuel oil for two month for generating corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil.*

*iv) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29.*

*v) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and*

*vi) Operation and maintenance expenses for one month.”*

**Fuel Components and Energy Charges in working capital**

100. The petitioner has claimed the cost of fuel component in working capital based on price ‘as fired’ GCV of coal procured and burnt for the preceding three months i.e. January, 2014, February, 2014 and March, 2014 and secondary fuel oil for the preceding three months i.e. January, 2014, February, 2014 and March, 2014 as under:

	2014-15		2015-16	2016-17	(₹ in lakh)	
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015			2017-18	2018-19
Cost of Coal towards stock	11731.59	17734.87	17734.87	17686.41	17686.41	17686.41
Cost of Coal towards Generation	11731.59	17734.87	17734.87	17686.41	17686.41	17686.41
Cost of Secondary fuel oil 2 months	304.94	460.98	460.98	459.72	459.72	459.72

101. The respondent, KSEBL has submitted that the claim of the petitioner on this count is not in accordance with the 2014 Tariff Regulations. It has further submitted that the petitioner has not produced the certified copies of the bills showing the price of domestic coal, imported coal, GCV of domestic coal, GCV of imported coal. The respondent has also submitted that



receivables for calculation of working capital be revised based on the averments of the respondent for all components of fixed cost. The respondent, TANGEDCO has submitted that the claim of the petitioner for considering the GCV of coal on 'as fired' basis for the purpose of tariff determination is in deviation of the provisions specified under the Regulations. In response, the petitioner has submitted that the measurement of GCV was being carried out on 'as fired' basis till the month of March, 2014 as per the 2009 Tariff Regulations till 31.3.2014 and as such the petitioner was maintaining data of GCV on 'as fired' basis till March, 2014.

102. The Computation of Energy Charges and fuel component (coal cost) in working capital for the period 2014-19 is based on 'as received' GCV of coal. The Commission vide ROP of the hearing dated 27.2.2015 directed the petitioner to submit the GCV of coal on 'as received' basis. In response, the petitioner vide affidavit dated 4.6.2015 has submitted that they did not have suitable infrastructure for measurement of representative GCV on 'as received' basis.

103. The issue of 'as received' GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon'ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon'ble High Court of Delhi has directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

104. The petitioner has furnished as billed GCV and as fired GCV of coal during preceding three months. However, the petitioner has not furnished the 'as received' GCV of coal as per the Commission's order dated 25.1.2016 in Petition no.283/GT/2014.

105. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

*"In view of the above discussion, the issues referred by the Hon'ble High Court of Delhi are decided as under:*

(a) *There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.*

(b) *The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic*



*Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC."*

106. The petitioner has claimed Energy Charge Rate (ECR) of 211.264 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months of January, 2014, February, 2014 and March, 2014. It is observed that the petitioner has not placed on record the GCV of coal for preceding 3 months on 'as received' basis. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydraulic Augur. In the absence of GCV of coal on as received basis the present petition cannot be kept pending. Hence, the Commission has decided to compute the fuel components and the energy charges in the working capital by provisionally taking the GCV of coal on 'as billed' basis and allowing on adjustment for total moisture as per the formula given as under:

$$\frac{\text{GCV} \times (1 - \text{TM})}{(1 - \text{IM})}$$

Where: GCV= Gross Calorific value of coal  
TM=Total moisture  
IM= Inherent moisture

107. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for the years 2014-15, 2015-16 and 2016-17 and at 85% NAPAF for the year 2017-18 & 2018-19 and based on 'as billed' GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January, 2014 to March 2014 and allowed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Cost of Coal for stock- 30 days</b>	15700.93	15700.93	15700.93	16079.26	16079.26
<b>Cost of Coal for Generation- 30 Days</b>	15700.93	15700.93	15700.93	16079.26	16079.26
<b>Cost of Secondary fuel oil 2 months</b>	457.90	459.15	457.90	468.93	468.93



108. Energy charges for 2 months on the basis of "as billed" GCV of coal for the purpose of interest on working capital have been worked out as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
32295.89	32384.37	32295.89	33074.10	33074.10

#### O & M Expenses (1 month)

109. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital in Form-13 B is as under:

2014-15		2015-16	2016-17	2017-18	2018-19
1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
1370.08	1970.08	2100.08	2226.19	2366.56	2515.55

110. Regulation 28 (a) (vi) of the 2014 Tariff Regulations provides for O & M expenses for one month for coal based generating station. Accordingly, O&M expenses including water charges for 1 month is allowed as under:

2014-15		2015-16	2016-17	2017-18	2018-19
1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
1242.46	183.52	2094.45	2226.19	2366.56	2515.55

\*The difference in the claim of the petitioner and as allowed by the Commission for year 2014-15 is due to the fact that the petitioner has claimed the normative O & M and the Commission has allowed the actual O & M

#### Maintenance Spares

111. The petitioner has claimed maintenance spares in the working capital as under:

2014-15		2015-16	2016-17	2017-18	2018-19
1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
3288.20	4728.20	5040.18	5342.87	5679.75	6037.32

112. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the Operation & Maintenance expenses as specified in Regulation 29 of the 2014 Tariff Regulations. In terms of Regulation 29(2) of the 2014 Tariff Regulations and in line with Commission's order dated 6.10.2015 in Petition No. 186/GT/2014 (Sugen CCPP), the maintenance spares @ 20% of O & M expenses allowed is as under:



2014-15		2015-16	2016-17	2017-18	2018-19
1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
2981.90	440.44	5026.67	5342.87	5679.75	6037.32

\* The difference in the claim of the petitioner and as allowed by the Commission in year 2014-15 is due to the fact that the petitioner has claimed the normative maintenance spares and the Commission has allowed the actual maintenance spares.

## Receivables

113. Receivables equivalent to two months of capacity charges and energy charges has been worked out and allowed as under:

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
Fixed charges	18627.20	2634.40	29377.36	30537.69	30993.28	30794.83
Variable charges	29287.51	3008.38	32384.37	32295.89	33074.10	33074.10

## Rate of interest on working capital

114. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*"Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later."*

115. In terms of the above regulations, SBI PLR of 13.50% has been considered for the purpose of calculating interest on working capital. Accordingly, Interest on working capital has been computed as under:

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
O&M expenses	1242.46	183.52	2094.45	2226.19	2366.56	2515.55
Receivables (Fixed Charges)	18627.20	2634.40	29377.36	30537.69	30993.28	30794.83
Receivables (Variable Charges)	29287.51	3008.38	32384.37	32295.89	33074.10	33074.10
Maintenance Spares	2981.90	440.44	5026.67	5342.87	5679.75	6037.32
Cost of secondary fuel oil for two months	415.25	42.65	459.15	457.90	468.93	468.93
Cost of coal for stock (30 days)	14238.37	1462.55	15700.93	15700.93	16079.26	16079.26
Cost of coal for generation (30 days)	14238.37	1462.55	15700.93	15700.93	16079.26	16079.26
<b>Total Working Capital</b>	<b>81031.06</b>	<b>9234.49</b>	<b>100743.84</b>	<b>102262.39</b>	<b>104741.14</b>	<b>105049.25</b>
Interest Rate %	13.50%	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest on Working Capital</b>	<b>10939.19</b>	<b>1246.66</b>	<b>13600.42</b>	<b>13805.42</b>	<b>14140.05</b>	<b>14181.65</b>



116. Accordingly, Annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:

	2014-15		2015-16	2016-17	2017-18	2018-19
	1.4.2014 to 25.2.2015	26.2.2015 to 31.3.2015				
Return on Equity	23010.13	3360.71	38525.72	41249.51	42809.53	43409.62
Interest on Loan	37183.20	5307.31	57134.24	56721.98	54225.15	49954.71
Depreciation	25721.16	3689.53	41870.42	44734.88	46386.20	47036.42
Interest on Working Capital	10939.19	1246.66	13600.42	13805.42	14140.05	14181.65
O&M Expenses	14909.51	2202.18	25133.34	26714.33	28398.75	30186.60
<b>TOTAL</b>	<b>111763.20</b>	<b>15806.39</b>	<b>176264.14</b>	<b>183226.13</b>	<b>185959.69</b>	<b>184769.00</b>

### Energy Charge Rate

117. The petitioner has claimed an energy charge rate (ECR) of 211.264Paise/kWh for the period 2014-15 to 2018-19 based on the weighted average price, GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months. The energy charge rate (ECR) as worked out based on operational norms specified in 2014 Regulations and on "As Billed" GCV of coal for preceding 3 months i.e. January, 2014 to March, 2014 to January 2014, as worked out under may be considered for allowing 2 months Energy Charge in Working capital:

Sl no.		Unit	2014-19
1	Capacity	MW	1500
2	Weighted average Gross Station Heat Rate	Kcal/kWh	2351.250
3	Weighted average Aux. Energy Consumption	%	6.69
4	Weighted average GCV of oil (as fired)	Kcal/lit	9960
5	Weighted average GCV of Coal (as Billed)	Kcal/kg	3998.517
6	Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV of Coal India		*
7	Weighted average price of oil	₹/KL	50382.035
8	Weighted average price of Coal	₹/MT	2985.00
9	Rate of Energy Charge ex-bus	Paise/kWh	190.413**

\* To be calculated by the petitioner based on the adjustment formula

\*\* To be revised as per the figures at Sr. No. 6

118. The GCV of coal as computed above shall be adjusted in the light of the GCV of coal on 'as received basis' computed by the petitioner as per our directions in order dated 25.1.2016 in Petition No. 283/GT/2014. The GCV of coal needs to be measured from the sample collected at the jetty for considering 'as received' basis in terms of provision of para 5 (sampling from ship during loading or unloading) and para 8 (sampling from loaded ships) of IS 436(Part-1/Section-1) -1964.





119. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014.

120. The Commission in its order dated 19.2.2016 in Petition No. 33/MP/2014 (TPDDL v NTPC & anr) had directed as under:

*"The respondents shall introduce help desk to attend to the queries and concerns of the beneficiaries with regard to the energy charges. The contentious issues regarding the energy charges should be sorted out with the beneficiaries at the senior management level, preferably at the level of Executive Directors."*

Accordingly, in line with the above decision, help desk shall be introduced by the petitioner and contentious issues if any, which arise in respect of energy charges for this generating station shall be sorted out with the beneficiaries at the Senior Management level.

#### **Application filing fee and Publication Expenses**

121. The petitioner has sought reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited filing fees of ₹4604800/- for the year 2014-15, ₹6600000/- for the year 2015-16 and ₹6600000/- in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulations 52 of the 2014 Tariff Regulations, we direct that the petitioner shall be entitled to recover *pro rata*, the filing fees and the expenses incurred on publication of notices directly from the respondents, on production of documentary proof. The filing fees for the remaining years of the tariff period 2017-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.

122. The annual fixed charges approved for the period 2014-19 as above are subject to truing up in terms of Regulation 8 of the 2014 Tariff Regulations.

123. Petition No. 277/GT/2014 is disposed of in terms of above.

Sd/-

Sd/-

Sd/-

Sd/-

**(Dr. M.K. Iyer)**  
Member

**(A.S. Bakshi)**  
Member

**(A.K. Singhal)**  
Member

**(Gireesh B. Pradhan)**  
Chairperson





**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 135/GT/2015**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson**

**Shri A.K.Singhal, Member**

**Shri A. S. Bakshi, Member**

**Dr. M. K. Iyer, Member**

**Date of Order: 11.7.2017**

**In the matter of**

Approval of tariff of coal based NLC Tamil Nadu Power Limited TPS (1000 MW) for the period from the date of declaration of commercial operation of Units-I &II till 31.3.2019

**And**

**In the matter of**

NLC Tamil Nadu Power Limited  
(a joint venture of NLC & TANGEDCO)  
Harbour Estate, Tuticorin-628004

**...Petitioner**

**Vs**

1. Transmission Corporation of Andhra Pradesh  
VidyutSoudha, Khairatabad,  
Hyderabad – 500082
2. Southern Power Distribution Company of Andhra Pradesh Ltd,  
D. No: 19-13-65/A, Srinivasapuram  
Tiruchhanur Road, KesavayanaGunta,  
Tirupati (AP) – 517501
3. Eastern Power Distribution Company of Andhra Pradesh Ltd  
Corporate Office P&T Colony, Seethammadhara,  
Visakhapatnam (AP) – 530013
4. Transmission Corporation of Telangana Ltd  
VidyutSoudhaKhairatabad,  
Hyderabad – 500082
5. Northern Power Distribution Company of Telangana Ltd.  
H.No 1-1-504, Opp. NIT petrol pump,  
Chaityanarayani colony, Hanamkonda  
Warangal (Telangana) – 506004
6. Southern Power Distribution Company of Telangana Ltd  
2<sup>nd</sup> Floor, H.No. 6-1-50, Mint Compound  
Hyderabad – 500063
7. Power Company of Karnataka Ltd  
KPTCL Complex, KaveriBhawan  
Bangalore – 560009
8. Bangalore Electricity Supply Company Ltd  
Krishna Rajendra Circle  
Bangalore – 560001



9. Mangalore Electricity Supply Company Ltd  
Paradigm Plaza A.B Shetty circle  
Mangalore – 560009

10. Chamundeshwari Electricity Supply Company Ltd  
Corporate Office No. 927, L.J Avenue  
New Kantharaj Urs Road, Saraswathipuram  
Mysore – 570009

11. Gulbarga Electricity Supply Company Ltd  
Main Road, Gulbarga  
Karnataka – 585102

12. Hubli Electricity Supply Company Ltd  
PB.Road, Navanagar  
Hubli – 580025

13. Kerala State Electricity Board  
VaidyuthiBavanam, Pattom  
Thiruvananthapuram – 695004

14. Puducherry Electricity Department  
137, NSC Bose Salai  
Puducherry – 605001

15. Tamilnadu Generation and Distribution Corporation Ltd  
NPKRR Maaligai, 144, Annasalai,  
Chennai – 600002

...Respondents

**Parties present:**

Shri M.G. Ramachandran, Advocate, NLC  
Ms. AnushreeBardhan, Advocate, NLC  
Shri S. GnanaPrabhakaran, NLC  
Shri S. Vallinayagam, Advocate, TANGEDCO  
Shri R. Jayaprakash, TANGEDCO

**ORDER**

This petition has been filed by the petitioner, NLC TamilNadu Power Limited (in short 'NTPL') for approval of tariff of NLC TamilNadu Power Limited TPS (2 x 500MW) ('the generating station/project') for the period from the date of commercial operation (COD) of Units-I & Unit-II till 31.3.2019, based on the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2014 ('the 2014 Tariff Regulations').

2. The petitioner is a joint venture Company of Neyveli Lignite Corporation (NLC) and TANGEDCO and is a subsidiary of NLC Ltd. The said joint venture company was incorporated on 18.11.2005 to implement the power project (coal fired) at Tuticorin and the promoters namely, NLC and TNEB/TANGEDCO share the equity in ratio of 89:11 respectively. This coal based thermal power



project is located at Harbour estate of Tuticorin Port Trust (TPT) and is adjacent to the Tuticorin Thermal Power station in Tamilnadu.

3. The Investment Approval of the project comprising of two units of 500 MW each was sanctioned on 12.5.2008 by the Govt. of India at a cost of ₹4909.54 crore at April, 2007 Price Level. As per Govt. of India guidelines, the Revised Cost Estimate (RCE) was submitted and approved on 9.12.2013 by GOI. The approved project cost as per RCE-I is ₹6602.74 crore, including IDC, at June, 2013 Price Level. Further, RCE-II of ₹7293.48 crore was approved by GOI on 27.4.2016 including IDC of ₹1379.15 crore of Foreign Exchange component of ₹93.11 crore equivalent to US \$18.10 million at June 2015 price level. The petitioner has entered into Power Purchase Agreements (PPA) with the respondent beneficiaries and the Ministry of Power, Govt of India has allocated the power generated from this project amongst the respondent beneficiaries on 9.8.2010, as under:

Tamil Nadu	387 MW
Andhra Pradesh &Telangana	254.6 MW
Karnataka	157.9 MW
Kerala	72.5 MW
Puducherry	9.5 MW
Un-allocated	118.5 MW

4. The petitioner vide affidavit dated 8.5.2015 had sought approval of tariff of the generating station from the anticipated date of commercial operation of Units-I (30.4.2015) and Unit-II (15.5.2016) till 31.3.2019. However, the Commission vide order dated 13.10.2015 had granted interim tariff on *pro rata* basis for the period from the anticipated COD of Units-I&II till 31.3.2017as under:

	(₹ in lakh)		
	Anticipated COD of Unit-I (30.4.2015to 14.5.2015)	Anticipated COD of Unit-II (15.5.2015to 31.3.2016)	2016-17
Return on Equity	600.20	22925.45	26058.12
Interest on Loan	762.97	28187.41	29796.34
Depreciation	528.32	20179.83	21742.08
Interest on Working Capital	196.33	8200.84	9291.33
O&M Expenses	348.57	14965.08	18080.00
<b>Total</b>	<b>2436.38</b>	<b>94458.61</b>	<b>104967.87</b>

5. Pursuant to the COD of Unit-I on 18.6.2015 and Unit-II on 29.8.2015, the petitioner vide affidavit dated 29.3.2016 amended the petition based on actual COD of the units and has sought approval of



tariff from the COD of the Units-I & II till 31.3.2019. Accordingly, the annual fixed charges claimed by the petitioner for the period from COD of Unit-I (2015-16) till 2018-19 is as under:

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016			
Depreciation	3195	19302	31758	31758	31758
Interest on Loan	4235	25021	38622	34830	31823
Return on Equity	3613	21833	36994	36994	36994
Interest on Working Capital	1004	6124	10515	10618	10643
O & M Expenses	1673	10039	18080	19220	20430
<b>Total</b>	<b>13720</b>	<b>82318</b>	<b>135971</b>	<b>133420</b>	<b>131649</b>

(₹ in lakh)

6. In compliance with the directions of the Commission, the petitioner has filed additional information with copies to the respondents. The respondents, TANGEDCO and KSEB have filed their replies and the petitioner has filed its rejoinder to the said replies. The matter was heard on 29.9.2016 and the Commission after directing the petitioner to file certain additional information reserved its orders in the petition. Based on the submissions of the parties and the documents available on record, we proceed to determine the tariff of the generating station for the period 2014-19 as stated in the subsequent paragraphs.

#### Commissioning schedule

7. The Investment approval of the project was sanctioned by the Govt. of India on 12.5.2008 and the main plant was awarded on 28.1.2009. The schedule date of declaration of commercial operation of Unit-I was 11.3.2012 and Unit-II was 11.8.2012. As stated, the actual date of commercial operation of Unit-I is 18.6.2015 and Unit-II is 29.8.2015, thereby resulting in the delay of 39.23 and 36.60 months from the schedule, as summarized hereunder:

Unit No	Original schedule as per Ministry of Coal, GOI	Actual COD	Time overrun (in months)
I	11.3.2012	18.6.2015	39.23
II	11.8.2012	29.8.2015	36.60

#### Admissibility of additional ROE

8. The date of original investment approval for the project is 12.5.2008. In order to avail the additional ROE of 0.5%, the completion time line specified under the 2014 Tariff Regulations for green field projects (Coal/lignite) with a unit size of 500 MW/600 MW from the date of investment approval is





44 months, with subsequent units at an interval of 6 months each. The original schedule as per MoC guidelines were 11.3.2012 and 11.8.2012 for Unit- I and Unit-II of the generating station respectively and the actual COD of Unit-I is 18.6.2015 and Unit-II is 29.8.2015. Hence, there is a time overrun of 39.23 months in the COD of Unit-I and 36.60 months in the COD of Unit-II, from the date of investment approval. As the units of the project have been declared under commercial operation beyond the completion timeline specified under the 2014 Tariff Regulations, we are not inclined to grant additional ROE of 0.5%. Accordingly, the generating station is not entitled to the additional return on equity of 0.5% which is allowed for timely completion of the Project.

### Time Overrun

9. The petitioner vide affidavit dated 8.5.2015 has stated that the delay from the RCE is 14 months for Unit-I and considering the first investment approval, it is 37 months. It is also submitted that site encumbrances and technical issues such as change of foundation type to suit local soil conditions, etc. which are beyond the control of the petitioner have contributed to the delay during the construction period. The petitioner has further submitted that the project could not proceed faster during/ after the first synchronization due to unforeseen technical problems which surfaced while operating the unit. The petitioner vide Annexure-VI of the said affidavit has furnished the causes of delay through delay analysis and endorsed by the project consultant M/s MECON. The petitioner has submitted that due to various delays in rerouting of existing power lines and water lines along the length and breadth of the project, unforeseen rain, unprecedented wind power and commissioning delays are major contributing factors for the delay in commissioning of the plant. A cursory view of the delay in achieving milestone activities as tabulated by the petitioner is as under:

Sl.No.	Milestone/ Event	Occurrence date	Quantified delay
a	Unit-I Boiler Light up	19.3.2014	29 months
	Unit-II Boiler Light up	23.9.2014	30 months
b	Unit-I Synchronization		
	i) With coal firing	10.3.2015	37 months
c	Unit-I COD	30.4.2015	36 months
d	Unit-II COD	15.5.2015	33 months



10. Accordingly, the petitioner has furnished the reasons for the delay during the project execution stage and the delay during the commissioning and has submitted that the same were beyond the control of the petitioner. The petitionervide affidavit dated 29.3.2016 has furnished the reasons for delay in declaration of COD of the project, under the following heads:

**Delay due to Environmental clearance**

**(a) Forest clearance**

(i) The petitioner had taken 102.465 Ha of land from VOCPT on long term lease basis for setting up of the Thermal Power Project, out of which about 59 Ha of land was marked as "Kaadu" (Forest) in the revenue records, which is a part of about 1200 Acres of land notified in the year 1923 and handed over to Tuticorin Port Trust Authorities for management, though the above area was devoid of forest cover and has long back been used for non-forestry purpose under the orders passed by the competent authorities from time to time. However, the said land legally continues to be reserved forest as it was never de-notified. The situation necessitated VOCPT to approach the Hon'ble Supreme Court of India for permission and seek the approval of Central Government under section 2 of the Forest (Conservation) Act, 1980 for the de-reservation of the said forest land.

(ii) Since beginning of the project, NTPL had been communicating with VOCPT (Lessor of the land) and the concerned officials of the Forest Department for getting forest clearance for the land at the earliest possible.

(iii) Following the GOI sanction for the project in May-2008, various package contracts were awarded during the year 2009 & 2010 and the site construction activities have started picking momentum during the year 2011. Considering the escalation of site activities following the award of contract and also considering the fact that, forest clearance for the land was a prerequisite for signing Fuel Supply Agreement (FSA) for the project with Mahanadi Coalfields Ltd (MCL), NLC/NTPL was steadfastly and closely following up this issue with VOCPT and GoTN at various levels for securing forest clearance for the land at the earliest possible.

(iv) Because of the relentless efforts taken by the NLC/NTPL, Chief Secretary/GoTN has finally convened a meeting with concerned authorities to deliberate on the issue on 26.03.2013 and during the meeting VOCPT was advised to file an Interlocutory Application (IA) with the Supreme Court of India seeking permission for de-notification of the forest land and accordingly VOCPT had filed IA with Supreme Court of India on 26.08.2013. The real breakthrough in the forest clearance issue could be achieved only when the Supreme Court of India has issued an order during March 2014 on the IA filed by VOCPT, accepting the recommendation of the Central Empower Committee of Supreme Court of India. Pursuant to the Supreme Court of India order VOCPT has submitted application for seeking approval under section 2 of the Forest (Conservation) Act 1980 for the de-reservation of the 457.25 Ha of forest land with Conservator of Forest on 11.3.2014. Further VOCPT has deposited ₹200275500/- with "Compensatory Afforestation Fund Management and Planning Authority" CAMPA on 17.3.2014 as Net Present Value for 457.25 Ha of land as per the Supreme Court of India directive. With the Order of the Supreme Court of India, the matter has started moving on a fast track. Govt. of TN has forwarded the recommendation of the Principal Chief Conservator



of Forest, Chennai for the de-reservation of the of 457.25 Ha of forest land to Assistant Inspector General of Forest, MOEF, GOI on 16<sup>th</sup> July 2014. Subsequently Addl. PCCF and Dy. Director, MOEF visited the site on 18.09.2014 and submitted a report to Addl. Director General of Forest, MoEF.

(v) The proposal for the de-reservation of 457.25 ha of Mullakadu reserved forest land was discussed in the Forest Advisory Committee (FAC) meeting held on 28.11.2014 at New Delhi and the FAC has recommended the State Government proposal for the de-reservation of the forest land, subject to certain conditions. Subsequently VOCPT/State Government has complied with the all the requirements of FAC and MOEF has communicated its in-principle approval for the de-reservation of the Forest land on 16.4.2015 subject to compliance of certain conditions. On the basis of the compliance report given, MOEF has accorded approval for the de-reservation of the 457.25 Ha of reserved forest land on 12.5.2015. Ultimately the 457.25 ha of Mullakadu reserved forest land in Thoothukudi has been de-reserved vide G.O (MS) No.66 dated: 02.06.2015 of Environment and Forest Department, GoTN. Tamil Nadu Government Gazette notification to this effect was issued on 24.6.2015.

**(b) Wildlife clearance**

(i) The Project is located 6.2KM South/South West of Gulf of Mannar National Marine Park boundary. As the project is located within 10 KM from Gulf of Mannar National Marine Park boundary, the provisions of Wildlife (Protection) Act, 1972 were applicable. Similarly one of the conditions of the Environmental Clearance under EI A notification 2006 accorded for the project on 13th June 2007 stipulates that, clearance under Wildlife (Protection) Act 1972 is to be obtained from competent authority. In the early stages of the project itself, NLC had sought for Wildlife Clearances for the project. The Chief Wild Life Warden (CWLW), Chennai after considering the various details furnished by NLC, accorded No Objection Certificate (NOC) to the project subject to certain conditions on 21.05.2009 and was forwarded to MOEF, New Delhi.

(ii) However, on 28.12.2010, Wildlife department of MoEF, New Delhi addressed to Chief Wildlife warden, Chennai requesting to provide a detailed factual report, whether the project involves intake and release of water from Gulf of Mannar. Based on this, the Wildlife warden, Ramanathapuram and Conservator of Forest, Virudhunagar visited the Project Site and asked for a report on Baseline Information of flora and fauna in the Marine Environment towards the National Park. The work was carried out by M/s.SuganthiDevadasan Marine Research Institute (SDMRI), Tuticorin and the reports were submitted to the Wildlife Authorities.

(iii) In the meeting convened by Principal Secretary, Energy, GoTN on 23.11.2011, the Chief Wildlife Warden had informed that the baseline data submitted is not sufficient and a comprehensive study on bio diversity impact assessment and allied issues has to be carried out by an accredited agency of Govt.of India. Accordingly the study of impact assessment as required by Wildlife department was carried out by M/s Cholamandalam MS Risk services, Chennai and they have submitted the report on 16.04.2012. The Report along with the required application for Wildlife clearance in Form I & II was handed over to Wildlife warden, Ramanathapuram on 02.05.2012 for consideration and recommendation. The Principal Secretary, Environment and Forests had forwarded the applications along with Form V to the Inspector General of Forests, MoEF, New Delhi on 1.11.2012 recommending the project under



Wildlife protection Act, 1972 and to place the proposal before the Standing Committee of National Board for Wildlife (NBWL).

(iv) The proposal for the Wildlife Clearance for the Project was listed in the 28th meeting of the Standing Committee of National Board for Wildlife held on 20.03.2013. However the proposal was deferred by the Committee as it had not been considered by the Tamil Nadu State Board for Wildlife (SBWL). State Board for Wildlife was not in existence at that point of time. The Wildlife clearance for the project was again listed in the agenda of the 30th meeting of the NBWL on 04.09.2013 and the proposal was deferred citing that, the proposal has to be recommended by the SBWL. The proposal was again discussed in the 31st meeting of the Standing Committee of NBWL held on 12th & 13th August 2014. However the proposal was deferred again for want of recommendation from SBWL. NTPL had followed up with GoTN for early constitution of the SBWL and consideration of NTPL Wildlife clearance proposal. Government of Tamilnadu reconstituted the State Board for Wildlife (SBWL) vide GO. No. 178 dated 6.11.2013 and the SBWL meeting held on 11.9.2014 has considered the wildlife clearance proposal of NTPL and forwarded its recommendation to MoEF, GOI to place it before the National Board for Wild Life for consideration.

(v) The 32nd meeting of the Standing Committee of the NBWL held on 21.1.2015 recommended the proposal for Wildlife clearance of the project. PCCF & Chief Wildlife Warden, Chennai, vide letter dated 14.5.2015 informed that, the above recommendation of NBWL constitutes clearance of the project in wildlife angle. The Project Monitoring Group (PMG), Cabinet Secretariat, GOI had played a vital role in securing the Forest & Wildlife Clearances for the project. PMG closely monitored the project during the year 2014-15 with a special thrust on Forest & Wildlife Clearances for the project and resulted in Forest Clearance for the project in the month of June-2015 & Wildlife clearance for the project in the month May-2015.

### **(c) Coastal Regulation Zone clearance**

(i) An application was submitted by NTPL to the District Environmental Engineer on 27.5.2005 for clearance under `Coastal Regulation Zone (CRZ). It was considered by the Tuticorin District Coastal Zone Management Authority and the application was forwarded to Tamil Nadu State Coastal Zone Management Authority (TNCZMA). On the recommendation of TNCZMA on 17.10.2006, the Principal Secretary, Environment and Forest, GoTN forwarded the application to National Coastal Zone Management Authorities (NACZMA), MoEF, New Delhi for further clearance.

(ii) The Project was appraised in the Expert Appraisal Committee (EAC), CRZ in its 79th meeting held on 27 & 28.8.2009 and the committee raised some points for clarification. After deliberating on the clarifications submitted by NTPL, the EAC recommended the issue of CRZ clearance in the 81st meeting held on 29 & 30.10.2009. However CRZ clearance and Wildlife clearances are interrelated subjects, the issue of CRZ clearances for the project also got delayed. CRZ Clearance for the project was accorded by MOEF/GOI on 11.4.2014, subject to compliance of the certain terms & conditions as specified therein.

(iii) COD of Units were achieved within the time frame of 6 months from the initial Synchronization mandated by regulations. Thus, it can assume that there was no delay in respect of the period from first synchronization to COD.



**(d) Delay due to hostile climatic conditions****Unprecedented Rainfall**

(i) Before taking up the area grading to higher level, the project area was low lying and undulated. Though the project area is near to sea, no natural drainage was available for this area. Due to these reasons, during the month of November, 2009 and December 2009 heavy rain, much more than the average rainfall, has occurred and caused flooding the project area. At the early stage of project execution and unexpected inundated rainfall, most of the contractors were not equipped with proper dewatering pumps. This caused a delay of about four months in the commencement of civil works. In the year 2014, Tuticorin experienced heavy downpour more than the average. As the project area was flooded and works hampered for about 20 days during Nov'14-Dec'14. Apart from this monsoon rain, about 85 days works were hindered on account of unseasonal rains in the period from March 2009 to Oct, 2014. Also, after each and every rainfall, the project land became slushy and made the surface un-motorable till the water dries out.

**Heavy wind**

(ii) Every year in the months of June, July and August in Tuticorin area, the wind blows heavily along with dust storm much more than the average velocity. Due to this higher elevation works like Chimney, Cooling towers and precision mechanical erection works in Boilers and Power house were hampered. A total delay of about one month in all packages is quantifiable on account of dust storm.

**(e) Delay due to ban on sand supply**

(i) During April, 2011, Government of Tamilnadu has banned the quarrying of river sand in this locality as a measure to regularize the supply of river sand and to check illegal mining. Due to this ban, sand supply from these river sources got disturbed and in turn concreting progress suffered in the months of May, 2011 & June, 2011 in all the packages and this caused a delay of one month.

**(f) Delay due to shortage of water supply.**

(i) Tuticorin area is facing heavy water scarcity during the months of April, May & June in every year. In the year 2012 & 2013 heavy shortage of water supply for construction purpose was experienced. Due to this water shortage in the year 2012 & 2013, construction activities were hampered and delayed about one month on account of this in entire project.

**(g) Delay due to fatal accident.**

(i) Though NTPL had ensured highest safety practices by the package contractors at erection site, due to fatal accidents occurred during the erection activities in various packages and subsequent labour unrest in the whole project, about 7 days of site works was lost.

**(h) Delay due to shortage of skilled and unskilled manpower.**

(i) In general there was heavy shortage of both skilled and unskilled manpower in all the packages throughout the execution phase. As the locality of the project area is heavily industrialized in addition to the fishing industry, local manpower availability is very meagre to cater the requirement of NTPL project and turnkey contractors had to mobilise majority of



manpower strength from northern parts of the country and these migrated manpower didn't wish to continue in Tuticorin due to its southernmost geographical location. Several correspondences and discussions even by highest officials of NTPL to improve the man power could not be realized. Package contractors were informing that the labours are not continuing for the reason cited above. Due to lesser manpower deployment, works like Concreting, Fabrication and Erection of Structures, Boiler and ESP erection, Pressure parts erection and civil & mechanical works in other areas as well were delayed abnormally. This situation prevailed in all the packages almost during the entire period of project execution.

**(i) Delay due to location disadvantages**

- a. Inadequacy of land.
- b. Location compulsion.
- c. Varying soil characteristics.
- d. Higher ground water table.

**(j) Delay in the carrying out the work/clearance from the agencies.**

- a. Rerouting of TWAD water pipe line.
- b. Rerouting of Ammonia and Naphtha line.
- c. Sea water intake approval from Port trust & TNEB.
- d. Outfall pipeline routing approval by TNEB.
- e. Handling over of North Cargo berth by VOCPT.

**(k) Delay in execution of work by package contractors**

(i) The petitioner has further submitted that apart from some delay on the part of package contractors including BHEL, the main reason for delay in the commissioning of the project is attributable to the delay in getting the wildlife and Forest clearances. However, the petitioner had not quantified the period of delay due to delay in environmental clearances.

11. The Commission vide ROP of the hearing dated 2.8.2016 had directed the petitioner to furnish additional information towards justification for time overrun as under:

*"Detailed justification of time overrun of 39.23 months for Unit-I and 36.60 months for Unit-II from the scheduled COD. The reasons for delay shall be explained with PERT chart giving details of working days/ months lost with relevant documentary evidence, wherever necessary. Measures taken for reduction of the delays/ problems faced during execution of the project alongwith the supporting documents/ correspondence exchanged between the parties/ agencies"*

12. In compliance to the directions of the Commission, the petitioner vide affidavit dated 2.9.2016 has furnished detail justification for time overrun along with the PERT chart and has made similar submissions as in affidavit dated 29.3.2016.





### **Submission of the Respondents**

#### **TANGEDCO**

13. The respondent, TANGEDCO has mainly submitted as under:

- a) The main reason for the delay in commissioning of the project is attributable to the delay in getting the wild life and forest clearances of the project. Moreover the land to the extent of 102.465 ha has only been acquired on lease basis by the petitioner. Out of the total requirement of 102.465 ha lease hold land, only 59 ha of land was marked as Forest in the revenue records and hence, the reason behind getting approval for de- reservation for 457.25 ha has not been furnished by the petitioner. The petitioner has also not furnished the details of quantum of works affected due to non- availability of forest land. It is ascertained that there was no stoppage of works which have occurred due to non- availability of forest clearance and therefore the delay in getting forest clearance cannot be a reason for the delay in commissioning of the project.
- b) The investment approval for the project was sanctioned during May,2008 and the petitioner should have taken steps to identify the land for earlier commissioning of the project. However, the petitioner after a lapse of five years, had approached the govt. of Tamilnadu in the year 2013. Hence the delay on the part of the petitioner in execution of the project has resulted in abnormal delay in commissioning of the project after a span of nearly 4 years from scheduled COD.
- c) The petitioner has not furnished any communication with regard to the delay in signing the Fuel Supply Agreement (FSA) with Mahanadi Coal fields Ltd.(MCL) Moreover, fuel supply activities will take place only after the completion of plant works. Accordingly, the petitioner may be directed to furnish the details of FSA with MCL to ascertain the clauses necessitating forest clearance.
- d) No documentary evidence/ communication made with the wildlife department have been furnished indicating that the delay in commissioning of the project is due to non- availability of wildlife clearance.
- e) No documentary evidence has been furnished by the petitioner indicating that the delay in commissioning of the project beyond the schedule COD is only due to non- availability of CRZ clearance. Hence the claim of the petitioner as regards delay in getting wildlife clearance is not justifiable.
- f) The delay in commissioning of the project on account of the delay in getting forest clearances, wild life clearance and CRZ clearance and procurements fall under the controllable factors in terms of Regulation 12 of the 2014 Tariff Regulations.

Accordingly, the respondent has prayed that the claim of the petitioner to consider the delay in commissioning of the project may be rejected and the capital cost and IDC may be restricted upto the scheduled COD of the project.



**KSEBL**

14. The respondent, KSEBL hasmainly submitted as under:

- a) The delay in 10 months for boiler and 12 months for power house are due to lack of proper planning and insight at the time of preparation of original sanction and hence the delay due to these factors is purely attributable to the petitioner.
- b) Undue delay has been observed in the tendering and finalization of various works and hence the delay is purely attributable to the contractor and may be disallowed.
- c) No justification has been furnished by the petitioner as regards the delay of 15 months in the erection works of coal conveyors on North cargo berth and hence the delay may be disallowed. Moreover, the delay in execution of almost all works is purely attributable to the petitioner and the contractors engaged by the petitioner.

15. Accordingly, the respondent has submitted that the delay in commissioning the project has occurred due to the slackness in project management and lack of proper insight and co-ordination with equipment suppliers. It has further submitted that the petitioner has not taken appropriate project monitoring and management measures to achieve the COD of the generating station within the scheduled completion time. Accordingly, the respondent has prayed that in terms of the judgment of the Tribunal, the entire cost due to time overrun may be borne by the generating company.

**Analysis and decision**

16. We have examined the submissions of the parties and the documents available on record. The Appellate Tribunal for Electricity (the Tribunal), in the judgment dated 27.4.2011 in Appeal No. 72 of 2010 has laid down the following principles for prudence check of time overrun and cost overrun of a project :

*"7.4. The delay in execution of a generating project could occur due to following reasons:*

*Due to factors entirely attributable to the generating company, e.g.,*

- i) imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.*
- ii) due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.*
- iii) Situation not covered by (i) & (ii) above.*



*In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated Damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/suppliers of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices.*

*7.5. In our opinion, the above principles will be in consonance with the provisions of Section 61(d) of the Act, safeguarding the consumers' interest and at the same time, ensuring recovery of cost of electricity in a reasonable manner. "*

17. As stated, there is a time overrun of 39.23 months and 36.60 months in the COD of Unit-I & Unit-II respectively. The petitioner was directed vide ROP of the hearing dated 2.8.2016 and 29.9.2016 to furnish the reasons for delay alongwith PERT chart giving details of activities delayed, working days/months lost (quantification of days) with relevant documentary evidence with scheduled start date, scheduled completion date, actual start date, actual completion date. In response, the petitioner vide affidavit dated 2.9.2016 and 4.11.2016 have submitted the details and it could be inferred from the said submissions that the reasons attributed to the delay in the commissioning of the project is on account of the delay in getting (i) Forest clearance (ii) Wildlife clearance and (iii) CRZ clearance. However, from the PERT chart and the details of the activities furnished by the petitioner, the delay in different activities for Unit-I & Unit-II is compiled and examined as under:

Sl. NO	Activity	Scheduled Start Date	Scheduled completion date	Actual start date	Actual completion date	Delay Period (months)
<b>Unit-I</b>						
1	Civil work for Boiler erection	February 2009	November,2009	December,2009	October,2010	10
2	Drum Lifting	April,2010	May,2010	September,2011	September,2011	15
3	Hydro test	March,2011	April,2011	August,2012	September,2012	16
4	Lighting up	October,2011	October,2011	March,2014	March,2014	28
5	Synchronization	January,2012	January,2012	December,2014	February,2015	37
6	COD		March ,2012		June,2015	
<b>Unit-II</b>						
1	Start of boiler erection	April,2010	May,2010	November,2010	December,2010	6
2	Drum Lifting	September,2010	October 2010	September,2011	September,2011	10
3	Hydro test	August,2011	September 2011	August,2012	November,2012	13
4	Lighting up	March,2012	March 2012	September,2014	September,2014	29
5	Synchronization	June,2012	June,2012	September,2014	April,2015	33
6	COD		August,2012		August,2015	36



**Delay due to Start of Civil works for boiler erection**

18. The petitioner has submitted that there is a delay of 10 months and 6 months in completion of the civil works for boiler erection for Unit-I and Unit-II of the generating station respectively. In justification of the same, the petitioner has submitted that the delay is on account of geological surprises i.e change in type of foundations, heavy rain and flooding during November and December, 2009 and consequent dewatering of the site which has affected the civil works. It is evident from the affidavit dated 4.11.2016 that the first drawing of boiler foundations and Power house were to be submitted by the petitioner by 28.1.2009, but the same was submitted during the months of November, 2009 and January, 2010 respectively due to the delay in finalization of type of foundations. As per the contract technical specifications, the turn key contractors were to conduct the confirmatory soil investigation and the conservative results were to be adopted for foundation design but because of the varying soil characters and unpredictable layers of soft disintegrated rocks & clayey layers, the Package contractors had to change the approved drawings from Open foundation to Pile foundation and vice versa according to the local condition of the sub soil characteristics. It is also noticed that the delay due to geographical conditions was aggravated by heavy rain during the months of November, 2009 and December, 2009 and the rainfall during this period was much more higher than the average rainfall causing flooding of the project area. Moreover, dewatering of the flooded area added to the sufferings of the petitioner thereby causing delay. Also the unpredictable soil characteristics and heavy rain during this period was beyond the control of the petitioner and hence, the delay on this count cannot be attributable to the petitioner. In view of this, we are inclined to condone the delay of 10 months in case of Unit-I and 6 months in case of Unit-II in start of boiler erection work.

**Delay due to heavy wind & dust storm in Drum Lifting**

19. The petitioner has submitted that there has been delay of 15 months for Unit-I and 10 months for Unit-II in the completion of the Drum lifting work of the generating station. In justification of the same, the petitioner has submitted that Ceiling Girder alignment issue got affected due to heavy winds and dust storms during the months of June, July and August, 2011 and works at higher elevations was at slow pace due to dust storm. It has also submitted that heavy winds during the months of June, July



and August every year in Tuticorin area is a continuous phenomenon. In our considered view, the petitioner at the time of seeking investment approval of the project may have proposed schedule of commissioning of units/station keeping in view the climatic conditions of the site. Moreover the petitioner has not furnished any documentary evidence such as report, newspaper cuttings and video clippings of the site which is stated to have been affected by heavy wind. Also, since the completion of Boiler erection work is October, 2010 for Unit-I and December, 2010 for Unit-II, the drum lifting should have been done within 5 to 6 months as per timeline envisaged in original schedule, which could have then avoided the impact of wind and dust storms during the months of June, July and August. In this background, the delay of 15 months for Unit-I and 10 months for Unit-II in completion of the Drum lifting work has not been condoned.

#### **Consequential delay in Hydro test**

20. The petitioner has submitted that there has been delay of 16 months (from April, 2011 to September, 2012) for Unit-I and delay of 13 months (from September, 2011 to November, 2012) for Unit-II towards the completion of the Hydro test. In justification of the same, the petitioner has submitted that the delay is consequential upon the delay in achieving the previous milestones. It is noticed from the table under para 17 above that due to the consequential delays of the various milestones, the Hydro test was completed in September, 2012 for Unit-I and in November, 2012 for Unit-II. The petitioner has also submitted that there has been heavy scarcity of water during the months of April, May and June 2012-13 had affected the various construction activities. From the submissions of the petitioner, it is clear that the project area is at an average elevation of 2.40m above mean sea level and due to proximity to the sea, the ground water table in the project area is about 1m below the finished ground level. In our view, the petitioner could have arranged water from any of the alternative sources for conducting the hydro test. Moreover, the petitioner has not furnished any documentary proof justifying its claim for shortage of water in the locality. Accordingly, the submission of the petitioner is not acceptable and the delay in commissioning of the project on account of delay in hydro test is not condoned.



**Delay due to Forest clearance in the Boiler Lighting up**

21. The petitioner has submitted that there has been total delay of 28 months from scheduled completion date of October, 2011 to actual completion date of March,2014 for Unit-I and 29 months from March 2012 to September 2014 for Unit-II up to boiler lighting up. The petitioner has attributed the said delay due to delays in obtaining statutory forest clearance and previous milestones activities i.e. ban on river sand mining by Govt. of Tamilnadu in April, 2011, Dust storms during the months of June, July and August every year and Heavy rain during the months of November and December every year vide affidavit dated 4.11.2016. The same is examined hereunder.

**A. Delay due to Forest Clearance**

(i) The petitioner has submitted that MOU was signed on 28.10.2005 between Tuticorin Port Trust (now VOCPT) and NLC and subsequently a lease deed agreement was signed on 2.5.2011 for the total area of 127.465 hectare of land (102.465 Ha for Plant and 25 Ha for residential colony). It has also submitted that out of the 102.465 hectares of land for Plant, 59 hectares of land was notified as reserved forest under Section 16 of Madras Forest Act vide gazette notification dated 3.11.1923. The petitioner vide affidavit dated 2.9.2016 has further submitted that the issue of forest clearance cropped up after MCL vide Letter of Assurance (LOA) dated 24.9.2010 had agreed to sign the FSA with the petitioner after fulfilling certain requirements and forest clearance was one of the requirements. The petitioner has further submitted that it had followed this issue with VOCPT and the Govt. of Tamil Nadu at various levels for securing the forest clearance. On scrutiny, we find that there is no detail of the communication made by the petitioner to VOCPT prior to 7.5.2012 on which date the first correspondences has been made. It is noticed that subsequently, the petitioner vide letters dated 2.7.2012, 3.8.2012, 17.5.2013, 30.5.2013, 11.9.2013, 1.9.2014, 11.9.2014, 12.11.2014 and 29.12.2014 had communicated to different authorities i.e VOCPT, Govt. of Tamil Nadu, Ministry of Power, GOI, Ministry of Environment & Forests, GOI and the Ministry of Coal, GOI as regards to forest and wildlife clearance. However, from the letter dated 7.5.2012, it is noticed that reclassification of land was discussed in the review meeting held by the Chief Secretary of the Govt. of Tamil Nadu on 28.1.2012 and accordingly VOCPT has taken up the issue with Principal





Chief Conservation of Forests vide letter dated 7.3.2012. It is further observed that though the petitioner has mentioned that out of 102.465 hectares only 59 hectares was notified as forest land, the petitioner has not specified the systems/ equipments which were to be installed/erected in the forest land for which Forest Clearance was required. Further, the petitioner has also not furnished the list of the activities which were held up for the want of forest clearance. Moreover, the reserved forest land was de-reserved vide Govt of Tamil Nadu G.O. (MS) No.66 dated 2.6.2015 and accordingly GoTN gazette notification was issued on 24.6.2015. From the table of activity referred above, it is noticed that the petitioner was carrying out all the activities even prior to the notification of de-reserving the forest land. Moreover, the lighting up of Units-I and II of the generating station was completed by the petitioner during March, 2014 and September, 2014 respectively which is prior to the forest clearance notification dated 2.6.2015 obtained by the petitioner. Thus, the petitioner has failed to explain as to how and in what way the forest clearance had hampered the commissioning activities of the project. It is therefore clear that the work of the project was not held up at any stage for the want of forest clearance. In this background, the delay of 12 months for Unit-I and 16 months for Unit-II in the light up of boiler has not been condoned.

(ii) In addition to forest clearance, the petitioner has attributed time overrun due to delay in previous milestones activities like ban on sand supply by Govt. of Tamil Nadu during the months of May, 2011 and June, 2011, Dust storms during June, July and August of project years and heavy rains during the months of November and December. The delay due to heavy rains and heavy winds had already been considered as above in the civil works for boiler erection. However, the ban on quarrying of river sand by the State Govt of Tamil Nadu was a measure to check illegal mining and to regularize the supply of river sand. Moreover, the period of delay affected by the ban on sand supply was in April, 2011 and the lighting up of Units-I and II was scheduled during the months of October, 2011 and March, 2012 respectively and the actual completion of lighting up of the said units were carried out in the months of March, 2014 and September, 2014. In this background, the time overrun account of delay in previous milestones such as ban on sand supply, heavy rains and dust storms has not been condoned.



**B. Delay due to Wildlife clearance in the Synchronization**

(i) The petitioner has submitted that there is total delay of 37 months in Unit-I and 33 months in Unit-II up to the Synchronization of respective units and accordingly the delay corresponding to the activity of synchronization is 9 months for Unit-I and 4 months for Unit-II. In justification of the same, the petitioner has submitted that the Tamil Nadu Pollution Control Board (TNPCB) vide letter dated 10.9.2014 had requested to start the operations of the plant only after obtaining clearance under Wildlife Protection Act and thereafter wildlife clearance was obtained in May, 2015. It is observed that despite the directions of TNPCB in letter dated 10.9.2014 that the construction of the Power plant without clearance is in violation of the provisions of the Environment Protection Act, 1986, the petitioner was still carrying out the commissioning activities. It is further observed that the synchronization of Units-I and II of the generating station was carried out during the months of February, 2015 and April, 2015 respectively, even prior to the Wildlife clearance obtained on 14.5.2015. Thus, no delay has been caused in the synchronization of the units for want of wildlife clearance. It is however noticed that the work of the project was hampered for 20 days during the months of November, 2014 and December, 2014 on account of flooding of the project area and accordingly, the delay of 20 days in the synchronization of the units has only been condoned.

22. Apart from the above, the petitioner has attributed time overrun of the project due to delay for other reasons namely, 1 month delay in all the packages due to ban on sand supply and 7 days delay due to fatal accidents. As stated above, the delay due to ban on sand quarrying in relation to the delay in Boiler light up had been examined and is not found justifiable. Hence, the delay of 1 month due to ban on sand supply in Boiler lightup has not been condoned. Also, the delay of 7 days due to fatal accident and labour unrest is allowed as the same is not attributable to the petitioner. Based on the above discussions, the total delay of 27 days (20 days due to flooding of project area and 7 days due to fatal accident and labour unrest) is condoned for each unit.



23. Further, the petitioner has attributed time overrun of the project on account of the delay in obtaining Wildlife clearance and CRZ clearance. As stated, the CRZ clearance was accorded to the petitioner on 11.4.2014, the Wildlife clearance on 14.5.2015 and the Forest clearance on 2.6.2015. Accordingly, the delay on account of CRZ clearance and Wildlife clearance has already been subsumed in the delay due to Forest clearance. From the submissions of the petitioner, it is observed that the petitioner has been carrying out the work of the project continuously irrespective of any of the said environmental clearances. It has also failed to clarify the details of the activities/milestones which were really impacted/hampered due to want of the said environmental clearances. The only hindrance due to the absence of environmental clearance, in our view was the Fuel Supply Agreement with MCL and the declaration of COD as no other activities of the project was affected by it. However, due to delay in statutory environmental clearance, the petitioner was able to declare the COD of the units only after 4 months from its synchronisation. In the above circumstances, we are of the considered view, that the delay of 4 months each for Unit-I and Unit-II from synchronisation till the COD of the units has been condoned.

24. In the background of the above discussions and in light of the decision of the Tribunal in judgment dated 27.4.2011, we conclude that the total delay of 15 months for Unit-I and 11 months for Unit-II which includes the delay in the civil works for boiler erection due to geographical surprises, declaration of COD, rain and fatal accident is beyond the control of the petitioner and the petitioner cannot be made responsible for the same. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation 7.4(ii))], the total delay of 15 months for Unit-I and 11 months for Unit-II is condoned and the generating company is given the benefit of the additional cost incurred due to time overrun. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

25. The balance delay of 24.23 months for Unit-I and 25.60 months for Unit-II are in respect of factors namely, delay in providing inputs like making land available to the contractors is due to slackness on the part of the petitioner in project management and is within the control of the petitioner. Since these



are controllable factors in terms of Regulation 12(1) of the 2014 Tariff Regulations, the delay is attributable to the petitioner. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation 7.4(i)], the delay of 24.23 months for Unit-I and 25.60 months for Unit-II cannot be said to be beyond the control of petitioner and hence not condoned. Therefore, the increase in cost on account of the said delay has to be borne by the petitioner. However, the Liquidated Damages (LD) and Insurance proceeds if any, received by the generating company, on account of the said delay, could be retained by the generating company

26. Based on the above discussions, the time overrun allowed (against the actual time overrun) for Unit-I and Unit-II and the schedule COD (reset) for the purpose of computation IDC is summarized as under:

Units	Schedule COD as per Investment Approval	Actual COD	Time Overrun considering SCOD (months)	Time overrun allowed ( in months)	SCOD (reset) for IDC computation
I	11.3.2012	18.6.2015	39.23	15	11.6.2013
II	11.8.2012	29.8.2015	36.60	11	11.7.2013

### Capital Cost

27. Regulation 9 (2) of the 2014 Tariff Regulations provides as under:

*“The Capital cost of a new project shall include the following:*

*(a) The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*

*(b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*

*(c) Increase in cost in contract packages as approved by the Commission;*

*(d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;*

*(e) Capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;*

*(f) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;*

*(g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and*

*(h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.*



**Approved Capital Cost**

28. The original sanctioned cost of the project is ₹4909.54 crore at April 2007 price level including IDC of ₹597.33 crore and foreign exchange component of ₹716.06 crore equivalent of US \$ 169.884 Million at 1 US \$ = ₹42.16. As per GoI guidelines on "Mandatory Review and Revised Cost Estimate (RCE)", mandatory review of the project cost estimates has to be carried out with a view to make sure whether project cost estimate would require upward revision at the stage when funds to the extent of 50% of the approved cost are released. Accordingly, RCE-I was submitted and approved by Govt. of India on 9.12.2013. Further, on account of time & cost overrun after taking into account the relevant guidelines issued by GOI, RCE-II was submitted and approved by the Board of Directors of the Petitioner Company in the 419<sup>th</sup> Board Meeting held on 9.4.2012. However, the Board of Directors of the Petitioner Company had approved RCE-II considering the increase in project cost and the same was approved by the Govt. of India on 27.4.2016. The petitioner has claimed tariff based on RCE-II amounting to ₹7293.48 crore as on June, 2015 price level, including IDC of ₹1379.15 crore and Foreign Exchange component of ₹93.11 crore equivalent to US \$ 18.10 million. Accordingly, the approved project cost as per original investment approval, RCE-I and RCE-II is as under:

(₹ in crore)		
Sanctioned cost as per original approval dated 12.5.2008	As per RCE-I dated 9.12.2013	As per RCE-II dated 27.4.2016
4909.54	6602.74	7293.48

29. The RCE-II approved by the Board of Directors of the Petitioner Company is ₹7293.48 crore which is ₹2383.94 crore higher than original approved cost of ₹4909.54 crore. Hence, there is increase of 48.56% in the approved cost as per RCE-II from the Original investment approval cost. This increase is due to increase in IDC, Construction & Pre-commissioning activities etc.

**Actual Capital Cost as on COD**

30. The capital cost considered by the petitioner for the purpose of determination of tariff in Form(1)(i) of the affidavit dated 29.3.2016 is as under:



	(₹ in lakh)				
	2015-16 (Unit-I)	2015-16 (station)	2016-17	2017-18	2018-19
Capital cost claimed	367184.91	734023.16	668560.63	717742.62	732735.62
Less : IDC Included	68957.50	137915.00	-	-	-
Less : Liabilities included	53465.71	106931.42	-	-	-
Add : IDC claimed	66768.35	137915.00	-	-	-
Add : Notional IDC claimed	1693.62	3387.23	-	-	-
Less : Adjustment of sale of Infirm Power (certified by SRPC provisional)	2510.72	4674.77	-	-	-
<b>Capital Cost allowed</b>	<b>310712.95</b>	<b>625804.20</b>	<b>668560.63</b>	<b>717742.62</b>	<b>732735.62</b>
Less : Land value	-	-	-	-	-
Gross Asset value - Additions (Works) (A)	-	42756.43	49182.00	14993.00	-
Deletion of Asset -(B)	-	-	-	-	-
Cum. Depreciation of asset deleted (C)	-	-	-	-	-
Net Assets capital additions [A- (B-C)]	-	42756.43	49182.00	14993.00	-
<b>Closing capital cost</b>	<b>310712.95</b>	<b>668560.63</b>	<b>717742.62</b>	<b>732735.62</b>	<b>732735.62</b>

31. However, in Form-5B of the affidavits dated 29.3.2016 and 4.11.2016, the capital cost, on cash basis, as on COD of Units-I and II claimed by the petitioner is as under:

	(₹ in lakh)	
	2015-16 (Unit I)	2015-16 (station)
Capital Cost including IDC	307501.49	622416.97
Less: IDC	66768.35	137915.00
Capital Cost excluding IDC	240733.14	484501.97

32. The difference between the claim of the petitioner in Form-5B and Form 5(1)(i) is on account of the fact that the capital cost claimed in Form 5(1)(i) includes notional IDC along with actual IDC. Accordingly, the capital cost, on cash basis, as furnished in Form-5B has been considered for the purpose of tariff.

#### Impact of time overrun on contract price, IDC and IEDC etc

33. Due to time overrun in the COD of Units-I & II, there is requirement for *pro rata* reduction in the contract price, IDC & IEDC. It is noticed in Form-5D and Form-5B submitted by the petitioner vide affidavits dated 29.3.2016 and 4.11.2016 that there is no increase in the Main plant package cost, Civil works etc. as on the actual COD and up to 31.3.2018 along with provisions as compared to the award value. Therefore, there is no price escalation on account of time overrun. The total actual expenditure on overheads as on COD of the generating station (29.8.2015) is ₹19027.55 lakh (₹9123.93 lakh as on





COD of Unit-I (18.6.2015) and ₹9903.62 lakh as on COD of Unit-II) and the expenditure towards Establishment charges is ₹16604.59 lakh (₹7919.92 lakh as on COD of Unit-I (18.6.2015) and ₹8684.67 lakh as on COD of Unit-II). Due to time overrun, there is increase in establishment charges and the pro-rata deduction in establishment charges is worked out as under:

	(₹ in lakh)			
	Total period taken from zero date to actual COD (Months)	Time overrun disallowed (Months)	Overhead (Establishment) Expenses under IEDC	Pro-rata reduction =(col.4xcol.3) / col.2
Unit-I	85.20	24.23	7919.92	2252.34
Unit-II/ generating station	87.56	25.60	8684.67	2539.14

### Initial Spares

34. Regulation 13 of the 2014Tariff Regulations provides as under:

*“13. Initial Spares: Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:*

*(a) Coal-based/lignite-fired thermal generating stations - 4.0%*

*(b) Gas Turbine/Combined Cycle thermal generating stations - 4.0%*

*Provided that:*

*i. where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:*

*iv. for the purpose of computing of initial the cost spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the break-up of head wise IDC & IEDC in its tariff application.”*

35. The COD of the Unit-II/ generating station is 29.8.2015 and accordingly, the cut-off date of the generating station is 31.3.2018. The total initial spares claimed by the petitioner upto the cut-off date of the generating station is ₹15065.64 lakh (₹9414.43 lakh as on COD + liability provision of ₹5651.21 lakh during the years 2016-17 and 2017-18). The total Plant and Machinery cost of the project including taxes and duties and transport as per Form-5B of the petition is ₹290385.34 lakh as on COD of the generating station and ₹336070.29 lakh as on cut off date (i.e. 31.3.2018). Further, the petitioner has capitalized initial spares amounting to ₹9414.43 lakh as on COD of the generating station. The initial spares of ₹9414.43 lakh capitalized works out to 3.24% of the Plant and Equipment cost up to COD and the same is within the ceiling limit of 4% specified under the said Regulations. Hence, the amount of initial spares claimed is allowed. The petitioner is however directed to furnish the details of initial spares



capitalized from COD upto the cut-off date of the generating station at the time of truing-up of tariff in terms of the Regulation 8 of the 2014 Tariff Regulations.

### Infirm power

36. The petitioner vide ROP of the hearing dated 2.8.2016 was directed to submit the details of infirm power injected in the grid by Units-I and II separately, till its COD along with the revenue earned from sale of infirm power, excluding fuel cost, and the details of fuel used from synchronization till COD along with expenditure on fuel for pre-commissioning activities. In response, the petitioner vide affidavit dated 2.9.2016 has submitted the details of infirm power injected in the grid by Units-I & II separately from synchronization to COD's of Units, revenue earned from sale of infirm power excluding fuel cost and the detail of fuel used from synchronization to COD for pre-commissioning activities as summarized under:

	Unit	Unit-I	Unit-II	Total
Consumption of coal	MT	149220	94785	244005.00
Landed cost of coal	₹/MT	3009.430	3553.76	
Fuel Cost (Coal)	₹	449067144.60	337162980.00	786230124.60
Consumption of oil (HFO)	KL	4190	5633	9823
Consumption of oil (LDO)	KL	1025	546	1571
Landed cost of HFO	₹/KL	34086.67	32792.58	
Landed cost of LDO	₹/KL	58946.66	57462.57	
Fuel cost (oil)	₹	203229157.40	216098816.93	419327974.33
Revenue from infirm power excluding fuel cost	₹	(-)365324983.88	(-)372756154.05	(-)738081137.93
Infirm power injected into the grid	MU	202.6127	126.6674	329.2801
<b>Revenue earned from sale of Infirm Power</b>	₹	<b>286971318.12</b>	<b>180505642.88</b>	<b>467476961.00</b>

37. It is observed from the above that the revenue from sale of infirm power, excluding fuel cost, from Units-I and II of the project till the COD of the generating station is (-)₹738081137.93. It is further observed that the revenue earned from sale of infirm power amounting to ₹4674.77 lakh has been adjusted in the capital cost. However, from the details of fuel cost, it is noticed that the total cash expenditure on fuel cost (coal+oil) is ₹12055.58 lakh, and whereas, the fuel cost as indicated in Form-5B is ₹19918.47 lakh. The petitioner has however not furnished any explanation/justification for the said discrepancy in the fuel cost. In the absence of any explanation/clarification, we have in this order, considered the fuel cost of ₹12055.58 lakh instead of ₹19918.47 lakh. Accordingly, the fuel cost has been adjusted by (-)₹7862.89 lakh (19918.47-12055.58).



**Liquidated Damages**

38. The petitioner has submitted that the LD amount of ₹27126.00 lakh has been recovered from different contractors on account of the delay in the execution of the project. Since the LD amount is to be shared between the petitioner and the beneficiaries on account of time overrun allowed, the LD adjustment is worked out as under:

(₹ in lakh)

Total time overrun	Time overrun Allowed (months)	Time overrun disallowed (months)	Amount of total LD recovered	Pro-rata reduction =(col.5xcol.3)/ col.2
36.60	11	25.60	27126.00	8152.62

39. Based on the above discussions, the capital cost considered after adjusting the cost of establishment, LD recovered etc., as furnished in Form-5B by the petitioner, the capital cost of Unit-I and Unit-II/station works out as under:

(₹ in lakh)

Sl. No		2015-16	
		Unit-I (as on COD 18.6.2015)	Unit-II (as on COD 29.8.2015)
1.	Capital cost including IDC	307501.49	622416.97 (including capital cost of 307501.49 for Unit-I)
2.	IDC	66768.35	137915.00 (including ₹71146.65 for Unit-II)
3.	Capital Cost excluding IDC (1-2)	240733.14	484501.97
4.	Less: Pro-rata reduction on overhead expenses IEDC	2252.34	4791.48 (2252.34 for Unit-I & 2539.14 for Unit-II)
5.	Less: Adjustment of LD recovered	0.00	8152.62
6.	Less: Pro-rata reduction of excess fuel cost	3850.92	7862.89 (3850.92 for Unit-I & 4011.97 for Unit-II)
6.	Total Opening capital cost for purpose of tariff excluding, IDC, IEDC and adjustment of LD (3-4-5)	234629.88	463694.98

40. As against the above cash expenditure in Form 5B, the position based on the balance sheet of the generating station as on COD of both the units are as under:

(₹ in lakh)

		As on COD of Unit-I	As on COD of station
A	Gross Block	335786.69	675263.38
B	CWIP	349319.21	17495.47
C	Un-discharged liabilities	48448.42	48029.37
D	<b>Cash Expenditure (A+B-C)</b>	<b>636657.48</b>	<b>644729.47</b>



41. In the balance sheet as on the COD of Unit-I (18.6.2015), as sum of Rs 180170.35 lakh has been shown under 'Revenue expenditure' transferred to CWIP. In the absence of head-wise details of this expenditure, Establishment, Audit and Accounts as per Form 5B has been considered under IEDC. The petitioner is directed to submit the details of such expenditure as shown in the balance sheet, with head-wise details at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations.

42. It is pertinent to mention that as against un-discharged liabilities as per balance sheet, the petitioner in Form 5B has indicated an amount of ₹106931.42 lakh as un-discharged liabilities and provisions, which is actually the difference between the RCE-II approved cost of ₹729348.39 lakh and the actual cash expenditure of ₹622416.97 lakh as on COD of the generating station (29.8.2015). The petitioner has claimed discharge of the said liabilities/provisions during the period from 2015-16 to 2017-18. These discharges have not been considered for the purpose of tariff and the same will be considered at the time of truing up of tariff. The funding for the project as per the balance sheet is as under:

(₹ in lakh)			
		As on COD of Unit-I	As on COD of Station
E	Share Capital	182940.00	182940.00
F	Share Application Money	5500.00	1461.60
G	Long Term Borrowing	432482.00	457497.00
H	Total fund raised (E+F+G)	<b>620922.00</b>	<b>641898.60</b>

### Funding Gap

43. It is observed that there is a funding gap as on the Cod of the units, between the cash expenditure and the project funding as above, and the same is as under:

(₹ in lakh)			
		As on COD of Unit-I	As on COD of Station
D	Cash Expenditure	636657.48	644729.47
H	Total fund raised	620922.00	641898.60
	Funding Gap (D-H)	15735.48	2830.87

44. No explanation has been furnished by the petitioner as regards the funding gap of ₹15735.48 lakh for Unit-I and ₹2830.87 lakh for Unit-II of the generating station. Accordingly, the gap in funding for Units-I and II have been considered as un-discharged liabilities and has been deducted from the capital cost allowed for the purpose of tariff as on the respective COD of the units of the generating station, in line



with the Commission's order dated 18.4.2017 in Review Petition No.28/RP/2016in Petition No. 198/GT/2013.As per balance sheet,an amount of ₹4.12 lakh for Unit-I and ₹2293.08 lakh and Unit-II has been shown under Reserve and Surplus as negative entries. However, for the purpose of calculation of debt equity ratio, the above negative entries (accumulated loss) have not been considered, keeping the perpetuity factor in view, while determining the equity capital as on COD of Units-I and II.

#### IDC and Normative IDC

45. As stated above, the schedule COD of the units have been shifted on account of time overrun in the declaration of commercial operation of the units. The petitioner has claimed normative IDC for the period from June, 2006 to February, 2009 by considering the rate of interest @ 11.10% p.a. applicable to the first drawl of loan. But, there was no actual loan for the generating station as well as the Petitioner Company as a whole prior to 31.3.2009. Hence, there is no weighted average rate of interest available in order to work out the Normative IDC prior to the actual drawl of the loan (31.3.2009). Therefore, no normative IDC has been allowed prior to the actual drawl of the loan. Similar view had been taken by the Commission in order dated 8.2.2016 in Petition No. 198/GT/2013 and the relevant portion of the said order is extracted as under:

*"51. The petitioner has claimed the notional IDC for the period from 2003-04 to 2007-08 by considering the rate of interest @ 10.75% p.a. applicable to the first drawl of loan. But, there was no actual loan for the station as well as the petitioner company as a whole before 26.6.2008. Hence, there was no weighted average rate of interest available to work out the notional IDC before the actual drawl of the loan (26.6.2008). Therefore, no IDC has been allowed before the actual drawl of the loan.*

*52. Further, Notional IDC has also been allowed up to the date of scheduled COD only. The apportionment of Notional IDC has been made as per apportionment of IDC. Accordingly, the total notional IDC of ₹1533.54 lakh has been allowed in the capital cost for the purpose of tariff."*

46. In line with the above, IDC and normative IDC allowed up to the date of scheduled COD is as under:

	(₹ in lakh)		
	Unit-I	Unit-II	Total
IDC allowed	25810.19	27147.95	<b>52958.13</b>
Normative IDC allowed	1415.24	1431.56	<b>2846.80</b>

47. Interest on normative loan is treated as income in the Financial Statement i.e. Profit & Loss A/c and Balance sheet by the petitioner as it form part of capital cost for the purpose of allowing tariff.



**Additional Capital Expenditure**

48. Regulations 14 (1) of the 2014 Tariff Regulations, provides as under:

*“14.(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

*(i) Un-discharged liabilities recognized to be payable at a future date;*

*(ii) Works deferred for execution;*

*(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;*

*(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and*

*(v) Change in law or compliance of any existing law:*

*Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff*

49. The petitioner vide ROP of the hearing dated 29.9.2016 was directed to furnish the details of additional capital expenditure from COD of the generating station till 31.3.2019. In response, the petitioner vide affidavit dated 4.11.2016 has submitted the details of additional capital expenditure for the period 2016-18 as under:-

	(₹ in lakh)	
	2016-17	2017-18
Additional compressor 3 nos.	65.00	200.00
Mini JCB/ Robot	20.00	30.00
Construction of additional Silos civil works	50.00	450.00
Mercury analyser 2 nos.	0.00	43.20
Generator rotor	0.00	500.00
Exciter	0.00	1500.00
SF6 gas analyser	0.00	25.00
CEMS (Continuous emission monitoring system)	43.50	72.00
PPM Meter	0.00	5.00
H2 Leak detector	0.00	5.00
Special dust control equipment	100.00	100.00
Additional makeup line and one more set of makeup and outfall pump	0.00	2500.00
<b>Total additional capital expenditure</b>	<b>278.50</b>	<b>5430.00</b>

50. The petitioner was directed to furnish detailed justification of the additional capital expenditure along with relevant clauses of Regulation 14 of the 2014 Tariff Regulations under which the claims have been made. However, the petitioner has not furnished the said information. It is observed that the petitioner has claimed total additional capital expenditure of ₹278.50 lakh in 2016-17 towards Additional compressor (3 nos), Mini JCB/ Robot, Construction of additional Silos civil works, CEMS Continuous





Emission Monitoring System (CEMS) and Special dust control equipment. It has also claimed total expenditure of ₹5430.00 lakh in 2017-18 towards Additional compressor (3 nos), Mini JCB/ Robot, Construction of additional Silos civil works, Mercury analyser(2 nos), Generator rotor, Exciter, SF6 gas analyser, CEMS, PPM Meter, H2 Leak detector, Special dust control equipment and additional makeup line and one more set of makeup and outfall pump without any proper justification. The petitioner has also not submitted as to whether the assets like Generator Rotor, LP/HP rotor etc are in the nature of spares or whether these assets are required to replace the existing rotors due to breakdown. The cut-off date of the generating station is 31.3.2018. Thus, the claim of the petitioner which are in the nature of tools and tackles, minor assets and capital addition is allowed for the period 2016-18 considering the fact that the assets claimed are within the cut-off date of the generating station. The petitioner is however directed to submit detailed justification along with relevant clauses/ documentary evidence in respect of the claim for additional capitalization at the time of truing up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations and the same may get revised in accordance with law.

#### Reasonableness of Capital Cost

51. The comparison of the capital cost with the bench mark capital cost is discussed as under:

(₹ in lakh)		
A	Hard Cost up to COD (i29.8.2015)	463694.98
B	Cost per MW up to COD (29.8.2015)	4.64 Cr/MW
C	Total Capital expenditure allowed up to cut off date	5708.5
D	Excess initial Spares during 2016-18	1622.83
D	Total hard cost up to cut off date (31.3.2018) (A+C-D)	467780.65
E	<b>Cost per MW up to cut-off date (i.e. 31.03.2018)</b>	<b>4.68 Cr/MW</b>

52. The benchmark hard cost as specified by the Commission in Order dated 4.6.2012 for thermal power stations with coal as fuel at December,2011 Price level with 2 units of 500MW each is ₹4.71 cr/MW. The hard cost of the generating station as on COD (29.8.2015) and as on cut-off date (31.3.2018) is ₹463694.98lakh (₹4.64cr/MW) and ₹467780.65 lakh (₹4.68 cr/MW) respectively. The hard cost as on cut-off date of the generating station including the projected additional capitalisation is ₹4.68 cr/MW and the same is lower than the benchmark hard cost. Although, the generating station has special features viz(a) Desalination plant (b) Shore un-loader and (c) Offshore conveyor, the hard cost is lower than benchmark hard cost. It is therefore evident that the hard cost of the generating station



(Unit- I & Unit-II) up to cut-off date (31.3.2018) is reasonable. However, the actual hard cost up to the cut-off date can only be worked out/assessed after the end of the tariff period when capitalization of expenditure would be on actuals.

### Capital Cost

53. Based on the above, the capital cost approved in respect of the generating station for the period 2014-19 is as under:

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015 (Unit-I)	29.8.2015 to 31.3.2016 (Units I & II)			
Opening Capital cost excluding IDC and Normative IDC	234629.88	463694.98	-	-	-
IDC allowed	25810.19	52958.13	-	-	-
Normative IDC allowed	1415.24	2846.80	-	-	-
Less: unexplained funding gap	15735.48	2830.88	-	-	-
Opening Capital Cost	246119.82	516669.04	516669.04	516947.54	522377.54
Additional capital expenditure allowed	0.00	0.00	278.50	5430.00	0.00
<b>Capital Cost as on 31<sup>st</sup> March of the year</b>	<b>246119.82</b>	<b>516669.04</b>	<b>516947.54</b>	<b>522377.54</b>	<b>522377.54</b>

### Debt Equity Ratio

54. Regulation 19 of the 2014 Tariff Regulations provides as under:

*"19. Debt-Equity Ratio: (1) For a project declared under commercial operation on or after 1.4.2014, the debt equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that:*

- where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff;*
- the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment;*
- any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.*

**Explanation.-***The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

*(2) The generating company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.*



(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

55. The debt and equity position as per the balance sheet as on both the CODs is as under:

	(Rs in lakh)	
	18.6.2015	29.8.2015
Share Capital	182940.00	182940.00
Share Application Money	5500.00	1461.60
Long Term Borrowing	432482.00	457497.00
Capital expenditure (after deducting the funding gap)	620922.00	641898.60

56. It is observed that there is share application money amounting to `5500.00 lakh and `1461.60 lakh respectively pending for allotment. Though, the same has been utilized toward expenditure of project, the same was not converted into share capital as on COD. As such, the same cannot be treated as part of equity and has been considered as debt for the calculation of debt equity ratio for the purpose of tariff. Accordingly, the debt-equity ratio is worked out as under:

	(Rs in lakh)	
	18.6.2015	29.8.2015
Equity (Share capital)	182940.00	182940.00
Share application money (i)	5500.00	1461.60
Long Term Borrowing (ii)	432482.00	457497.00
Debt (i+ii)	437982.00	458958.60
Debt%	70.54%	71.50%
Equity%	29.46%	28.50%

### Return on Equity

57. Regulation 24 of the 2014 Tariff Regulations provides as under:

“24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:



Provided that:

- i). in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:
- ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:
- iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:
- iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:
- v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues: vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

58. Regulation 25 of the 2014 Tariff Regulations provides as under:

*Tax on Return on Equity:*

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate".

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess.

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis.



59. It is observed from the annual reports of the Petitioner Company that no tax has been paid for the year 2015-16. As such, the Return on Equity has not been allowed to be grossed up with the MAT rate though claimed by the petitioner. Accordingly, Return on Equity has been computed as under:

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015 (Unit-I)	29.8.2015 to 31.3.2016 (Units I & II)			
Gross Normative Equity	72513.39	147249.79	147249.79	147333.34	148962.34
Addition due to Additional Capitalization	0.00	0.00	83.55	1629.00	0.00
Closing Equity	72513.39	147249.79	147333.34	148962.34	148962.34
Average Equity	72513.39	147249.79	147291.56	148147.84	148962.34
Return on Equity (Base Rate )	15.500%	15.500%	15.500%	15.500%	15.500%
Tax rate for the year	0.000%	0.000%	0.000%	0.000%	0.000%
Rate of Return on Equity (Pre Tax )	15.500%	15.500%	15.500%	15.500%	15.500%
<b>Return on Equity (Pre Tax)</b>	<b>2211.06</b>	<b>13469.73</b>	<b>22830.19</b>	<b>22962.92</b>	<b>23089.16</b>

#### Interest on loan

60. Regulation 26 of the 2014 Tariff Regulations provides as under:

*“26. Interest on loan capital: (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*

*(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*

*(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of Decapitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalization of such asset.*

*(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

*(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

*(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

*(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs*



associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.

61. Interest on loan has been worked out as mentioned below:

(a) The weighted average rate of interest has been worked out on the basis of the actual loan portfolio of respective year applicable to the project;

(b) Depreciation allowed for the period has been considered as repayment;

(c) The interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest calculated.

62. Necessary calculations for interest on loan are as under:

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015 (Unit-I)	29.8.2015 to 31.3.2016 (Units I & II)			
Gross Loan- opening	173606.43	369419.25	369419.25	369614.20	373415.20
Cumulative Repayments up to Previous Year	0.00	2530.76	18465.85	44693.87	71066.74
Net Loan-Opening	173606.43	366888.49	350953.40	324920.33	302348.46
Addition due to drawl	0.00	0.00	194.95	3801.00	0.00
Repayment	2530.76	15935.09	26228.02	26372.87	26510.66
Net Loan-Closing	171075.67	350953.40	324920.33	302348.46	275837.80
Average Loan	172341.05	358920.95	337936.87	313634.39	289093.13
Rate of Interest	9.986%	9.986%	9.986%	9.986%	9.986%
<b>Interest on loan</b>	<b>3385.50</b>	<b>21152.14</b>	<b>33745.70</b>	<b>31318.90</b>	<b>28868.26</b>

## Depreciation

63. Regulation 27 of the 2014 Tariff Regulations provides as under:

"27. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.





*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

*(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*

*(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*

*Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*

*Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*

*(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

*(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:*

*Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*

*(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.*

*(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the life span of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the life span of the project.*

*(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."*

64. The weighted average rate of depreciation claimed as per regulation above is 5.227% for the period from 18.6.2015 to 28.8.2015 and 5.226% for the period from 29.8.2015 to 31.3.2016 and 5.075% for the period from 2016-17 to 2018-19 and the same has been considered. Necessary computations in support of depreciation are as under:



	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015 (Unit-I)	29.8.2015 to 31.3.2016 (Units I & II)			
Gross Block as on COD	246119.82	516669.04	516669.04	516947.54	522377.54
Additional capital expenditure during 2014-19	0.00	0.00	278.50	5430.00	0.00
Closing gross block	246119.82	516669.04	516947.54	522377.54	522377.54
Average gross block	246119.82	516669.04	516808.29	519662.54	522377.54
Rate of Depreciation	5.227%	5.226%	5.075%	5.075%	5.075%
Depreciable value	221507.84	465002.13	465127.46	467696.28	470139.78
Remaining depreciable value	221507.84	462471.38	446661.61	423002.42	399073.04
<b>Depreciation</b>	<b>2530.76</b>	<b>15935.09</b>	<b>26228.02</b>	<b>26372.87</b>	<b>26510.66</b>

**Operation & Maintenance expenses**

65. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides the year-wise O & M expense norms for coal based thermal generating units as under:

	(₹ in lakh/MW)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O & M expenses Norms for 500 MW	16.0	17.01	18.08	19.22	20.43

66. In terms of the above regulations, the petitioner has claimed O&M expenses as under:

2015-16		2016-17	2017-18	2018-19
18.6.2015 to 28.8.2015 (Unit-I)	29.8.2015 to 31.3.2016 (Units I & II)			
8505.00	17010.00	18080.00	19220.00	20430.00

67. The normative O&M claimed by the petitioner in terms of the 2014 Tariff regulations is in order and hence allowed.

**Additional O&M expenses for desalination plant**

68. The petitioner has prayed for review of the normative O&M expenses and has submitted that total additional O&M expenses of ₹22.08 crore per annum would be required for treating sea water to soft water on account of the following additional features:

	(₹ in crore)
Desalination Plant –(chemical, filters, membrane)	8.00
Shore un-loader	5.25
Offshore Conveyor	5.77



Bottom Ash Disposal	3.06
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69. In justification of the same, the petitioner has submitted that various chemicals are required for production of RO water and Filters and Membranes are required to be replaced periodically during RO production. It has submitted that the cost of chemicals for producing the RO water is expected to be ₹4.00 crore per year and the replacement cost of Filters and Membranes is expected to be ₹4.00 crore per year inclusive of Salaries and Wages of the manpower deployed. Accordingly, it has submitted that an additional cost of ₹8.00 crore per year, towards O&M cost on account of desalination plant is expected to be incurred. The petitioner has also submitted that an estimated 4.5 MT of Coal through 100 Shiploads per annum is going to be handled through this infrastructure. The petitioner has added that the annual additional expenses for O&M of Shore unloader is ₹5.25 crore & Offshore Conveyor system up to Plant is ₹5.77 crore. As regards Bottom ash disposal, the petitioner has submitted that it has to be transported to a distance of 27 to 35 KM from the project site and considering the daily requirement of 15360 Tons of coal with 34% Ash content, it is estimated that around 1000 tons of bottom ash has to be disposed with another 4000 tons through dry ash disposal system. The petitioner has stated that the contract for safe disposal of Bottom Ash to the distant location was awarded for 6 months at a value of ₹1.53 crore and the annual value works out to ₹3.06 crore.

70. The petitioner was directed vide ROP of the hearing dated 2.8.2016 to furnish the details of the actual O&M expenses of the generating station from COD to till date. In response, the petitioner vide affidavit dated 2.9.2016 has submitted that the total O&M expenses from COD (29.8.2015) to 31.7.2016 is ₹18989.75 lakh. The petitioner has also claimed expenses for consumables (i.e chemicals, filters, and membranes) to be used for the additional desalination plant. It is observed that the actual O&M expenditure incurred by the petitioner for the period 29.8.2015 to 31.7.2016 (approx 11 months) is ₹18989.75 lakh which is higher than the O&M expense norm of ₹17010 lakh applicable for the period 2015-16. However, the petitioner has commissioned similar desalination plant and has claimed additional O&M expenses of ₹4.70 crore in 2015-16.



71. The respondent, KSEBL has submitted that there is no provision in the 2014 Tariff Regulations to claim O&M expenses over and above the same allowed under Regulation 29. It has further submitted that the Commission had allowed normative O&M expenses considering the past actual performance of various plants and has also duly factored the inflation at the rate of 6.35% over and above the normative O&M expenses. The respondent has stated that any expenses incurred beyond the O&M norms specified in the regulation may be absorbed by the petitioner from the profit earned by them. Accordingly, it has prayed that the Commission may clarify that the O&M cost is not allowed over and above the rate specified under Regulation 29 of the 2014 Tariff Regulations.

72. The respondent, TANGEDCO has submitted that it is evident from the Statement of Reasons (para 29.39) annexed to the 2014 Tariff Regulations that the Commission had already taken into consideration the site specific issues while determining the norms for O&M expenses in respect of thermal generating stations. Accordingly, it has prayed that the prayer of the petitioner may be rejected.

73. The matter has been examined. It is observed that the plant is located near sea coast and thus there will be no water charges, as water will be made available from sea itself. In addition, the O&M expenses for RO desalination plant is allowed separately as normative O&M for meeting the water requirement of the plant. Considering the location of the plant, an amount of ₹22.08 crore per annum (which works out to ₹2.208 lakh/MW/year), claimed by the petitioner is too high in comparison to the amount of ₹468.84 lakh (which works out to ₹0.312 lakh/MW/year) for 2015-16 claimed by Vallur Thermal Power Project of NTECL which has 3 x 500 MW units as compared to 2 x 500 MW units of this generating station. In view of this, the Operation & Maintenance expenses claimed by the petitioner including consumables are restricted to an amount of ₹0.312 lakh/MW/year (₹312.56 lakh) at this stage. The O&M expenses for RO desalination plant allowed as above is subject to true-up of tariff and the petitioner is directed to place on record all relevant information/justification comparing the claim for chemicals filters & membranes etc. with respect to the Vallur Thermal Power Project of NTECL. The normative O & M expenses does not include additional features like desalination plant, chemicals, filters and membranes used for the same. Hence, expenses on desalination plant is allowed separately.



## Water charges

74. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

*“29 (2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization”*

75. As per Regulations 29(2) of the 2014 Tariff Regulations, water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. However, the petitioner has not claimed water charges on projection basis during the year 2015-19. Accordingly, the same has not been considered. The total O&M expenses including additional expenses for desalination plant and water charges allowed is as under:

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016			
<b>O&amp;M Expenses allowed</b>	1673.11	10038.69	18080.00	19220.00	20430.00
Additional O&M expenses for desalination plant allowed	61.49	184.46	312.56	312.56	312.56
Water Charges allowed	0.00	0.00	0.00	0.00	0.00
<b>Total O&amp;M Expenses allowed</b>	<b>1734.60</b>	<b>10223.15</b>	<b>18392.56</b>	<b>19532.56</b>	<b>20742.56</b>

## Additional O&M due to CISF Security Force

76. The petitioner has submitted that the generating station is very near to the sea coast and hence, there is a risk of intrusion. It has also submitted that CISF is a premier multi-skilled security agency of the country, mandated to provide security to Industrial zone including this generating station and the deployment of the force would be completely at the cost of the petitioner. It has further submitted that the expenditure of ₹14.70 crore proposed to be incurred for providing certain infrastructure facilities such as residential accommodation to the force, vehicles etc. is included in the project cost & revenue expenditure and has not been included in the Operation & Maintenance expenses claimed. In our view,



the revenue expenditure due to deployment of security forces has been included in the normative O&M expenses under the 2014 Tariff Regulations and hence there is no reason to consider the claim of the petitioner. The petitioner shall meet such expenses from the normative O&M expenses admissible to the generating station. Accordingly, the claim of petitioner for revenue expenditure towards deployment of CISF security is not justified and is accordingly disallowed.

### Operational Norms

77. The operational norms in respect of the generating station considered by the petitioner are as under:

Maximum Design heat rate applicable	Kcal./Kwhr.	2255.17
Target Availability	%	85.00
Target Availability for recovery for fixed Cost	%	83.00
Auxiliary Energy Consumption	%	5.25
Gross Station Heat Rate	kCal/kWh	2351.25
Specific Fuel Oil Consumption	ml/kWh	0.50

### Normative Annual Plant Availability Factor

78. Regulation 36(A)(a) of the 2014 Tariff Regulations provides the target availability of the generating station as under:

#### (A) Normative Annual Plant Availability Factor (NAPAF)

(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) & (e)- 85%.

*Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.*

79. The petitioner has considered the Target availability of 83% during the period 2014-19. The Commission due to shortage of domestic coal supply has relaxed target availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Hence, in view of the above provision, the target availability of 83% is allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 & 2018-19 in terms of the Regulation 36(A)(a) of the 2014 Tariff Regulations.

### Gross Station Heat Rate (GSHR)

80. Regulation 36 (C)(b) (i) of the 2014 Tariff Regulations provides as under:

(C) Gross Station Heat Rate

(b) New Thermal Generating Station achieving COD on or after 1.4.2014





(i) Coal-based and lignite-fired Thermal Generating Stations

$$= 1.045 \times \text{Design Heat Rate (kCal/kWh)}$$

Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.

Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:

Pressure Rating (Kg/cm <sup>2</sup> )	150	170	170	247
SHT/RHT (°C)	535/535	537/537	537/565	65/593
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935	1850
Min. Boiler Efficiency				
Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86
Bituminous Imported Coal	0.89	0.89	0.89	0.89
<b>Max Design Unit Heat Rate (kCal/kWh)</b>				
Sub-Bituminous Indian Coal	2273	2267	2250	2151
Bituminous Imported Coal	2197	2191	2174	2078

Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken:

Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency:

Provided also that where the boiler efficiency is below 86% for Subbituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% respectively for Sub-bituminous Indian coal and bituminous imported coal for computation of station heat rate:

Provided also that maximum turbine cycle heat rate shall be adjusted for type of dry cooling system:

Provided also that if one or more generating units were declared under commercial operation prior to 1.4.2014, the heat rate norms for those generating units as well as generating units declared under commercial operation on or after 1.4.2014 shall be lower of the heat rate norms arrived at by above methodology and the norms as per the Regulation 36(C)(a)(i):

Provided also that for Generating stations based on coal rejects, the Commission will approve the Design Heat Rate on case to case basis.

81. The petitioner has furnished the design turbine cycle heat rate and boiler efficiency as 1932 kcal/kWh and 85.67% respectively. Accordingly, the unit design heat rate worked out from the data furnished by petitioner is 2255.165 kcal/kWh (1932/0.8567)

82. In terms of Regulation 36(C)(b)(i) of the 2014 Tariff Regulations, for the new Thermal Generating Station achieving COD on or after 01.04.2014, the Gross Station Heat Rate=1.045 x Design Heat Rate (kcal/kWh) (1.045x2255.165 =2356.65 kcal/kWh). Provided that the design heat rate shall not exceed



the maximum design unit heat rates depending upon the pressure and temperature ratings of the units as specified by the CERC, where design heat rate for plants having temperature and pressure rating nearer to NTPL plant using sub bituminous coal is given as maximum 2250 kcal/kwh. The Design heat rate of 2255.165 kCal/kWh for this generating station is higher than the ceiling design heat rate of 2250 kcal/kwh. In view of this, the ceiling design heat rate of 2250 kcal/kwh has been considered as the 'design heat rate'. Thus, by taking the multiplying factor of 1.045 the applicable Station Heat rate is 2351.25 kcal/kwh (1.045x2250). Accordingly GSHR of 2351.25 kcal/kWh is considered for the purpose of tariff.

### Auxiliary Power Consumption

83. Regulation 36(E)(a)(i) of the 2014 Tariff Regulations provides for Auxiliary Power Consumption (APC) as under:

#### **(E) Auxiliary Energy Consumption**

(a) Coal-based generating stations except at (b) below:

	<b><i>With Natural Draft cooling tower or without cooling tower</i></b>
<i>(i) 200 MW series</i>	8.5%
<i>(ii) 300/330/350/500 MW and above</i>	
<i>Steam driven boiler feed pumps</i>	5.25%
<i>Electrically driven boiler feed pumps</i>	7.75%

*Provided further that for thermal generating stations with induced draft cooling tower, the norms shall be further increased by 0.5%*

84. The APC considered by the petitioner is 5.25% for this generating station and the same is as per the above regulations. However, the petitioner in this petition has sought for review of the normative APC of 6.25% to include the consumption for additional systems like Offshore conveyor system for coal transportation from mine to sea and from sea to the nearest Tuticorin port, two (2) nos of electrically operated Shore un-loader installed for unloading of coal from the ship and to transfer coal from ship's hold to materials handling conveyor of the jetty, and for the electrical equipment installed for the desalination plant for RO production. Accordingly, the APC requirement on account of above as submitted by the petitioner is as under:



- |                                  |                            |
|----------------------------------|----------------------------|
| 1. Cross country conveyor system | - 8.567 MW @66% = 5.655 MW |
| 2. Shore Un-loader               | - 1.805 MW @66% = 1.192 MW |
| 3. Desalination plant            | - 4.831 MW @64% = 3.092 MW |

85. The total additional auxiliary consumption works out to 9.939 MW~10 MW. Accordingly, the petitioner has considered an additional load of 9.939 MW for calculating APC for the generating station of 2x500MW capacity which works out to 1% (approx) of Installed Capacity. (i.e. additional 1 % of APC). In our view, the generating station has special features like Coal Transportation from port to project and also additional electrical equipment's installed towards desalination of sea water through RO system, for which there will be additional APC for running these additional systems. Moreover, the Commission had not considered the special features like desalination of sea water, coal conveying system from port to station etc., in the APC norms specified under the 2014 Tariff Regulations. In this background, we are of the considered view that this generating station should be allowed the APC of 6.25% as a special case, in terms of the prayer of the petitioner. Accordingly, the APC of 6.25 % is allowed. However, the petitioner is directed to furnish the details of the actual APC, PLF of the generating station from the COD of Unit-II till 31.3.2019 at the time of truing up of tariff, in terms of Regulation 8 of the 2014 Tariff Regulations.

### Specific Oil Consumption

86. Regulation 36(D)(a) of the 2014 Tariff Regulations, provides for Secondary fuel oil Consumption of 0.50 ml/kWh for coal-based generating stations. Hence, the Secondary fuel oil Consumption considered by the petitioner is as per norms and is allowed.

### Interest on Working Capital

87. Sub-section (a) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*"28 (1) The working capital shall cover:*

*(a) Coal-based/lignite-fired thermal generating stations*

*(i) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(ii) Cost of coal or lignite and limestone for 30 days for generation corresponding to the normative annual plant availability factor;*



(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;

(iv) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29;

(v) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor; and

(vi) Operation and maintenance expenses for one month.”

### Fuel Component and Energy Charges in working capital

88. The petitioner has claimed cost for fuel component and Energy charges in working capital based on 'as received' GCV of coal and secondary fuel procured and burnt for the preceding three months of March, 2015, April 2015 and May, 2015 in respect of Unit-I (for the period 18.6.2015 to 28.8.2015) and for the preceding three months of June, 2015, July, 2015 and August, 2015 in respect of Unit-I and Unit-II (for the period from 29.8.2015 to 31.3.2019) as under:

	2015-16		2016-17	2017-18	2018-19
	Unit-I	Unit-II/ station			
Cost of Coal towards stock	5903.80	11966.27	11966.27	11966.27	11966.27
Cost of Coal towards Generation	5903.80	11966.27	11966.27	11966.27	11966.27
Cost of Secondary fuel oil 2 months	72.19	144.38	143.98	143.98	143.98

(₹ in lakh)

89. It is observed that the “as received” GCV of the coal furnished by the petitioner is same as “as billed” GCV of coal during the preceding three months. The petitioner in Form-15 has furnished “as billed” GCV and “as received” GCV of domestic coal as 3040 kCal/kg with price of 2562.12 ₹/MT for preceding 3 months from COD of Unit-I. Similarly, in case of Unit-II/generating station, “as billed” and “as received” GCV of coal during the preceding three months has been furnished by the petitioner as 3700 kCal/kg for domestic coal with average price of 2597 ₹/MT. It is observed that there is substantial difference in the value of preceding 3 months GCV of coal, prior to the COD of Units-I and II, even though there is negligible difference in the price of coal. We understand that the price of coal is not directly proportional, however, it appears that in case of Unit-I “as billed” GCV of 3040 kCal/kg is incorrect. However, as the petitioner has not clarified as to whether it had installed the equipment's/



infrastructure required for taking sample of coal as per the Commission's order dated 25.1.2016 in Petition No.283/GT/2014, we have considered "as billed" & "as received" GCV of coal as 3700 kCal/kg (preceding 3 months from COD of Unit-II/Station). Further, for measurement of "as received" GCV of coal, the petitioner is directed to furnish detailed information on the infrastructure installed for measuring "as received" GCV of coal.

90. Accordingly, the cost for fuel components in working capital have been computed at 83% NAPAF for the years 2015-16 and 2016-17 and at 85% NAPAF for the year 2017-18 and 2018-19 based on 'as received' GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from June, July, and August, 2015 in respect of COD of Unit-I and Unit-II of the generating Station is as under:

(₹ in lakh)

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016			
Cost of Coal for stock- 30 days	1149.31	6895.89	11684.70	11966.26	11966.26
Cost of Coal for Generation-30 Days	1149.31	6895.89	11684.70	11966.26	11966.26
Cost of Secondary fuel oil 2 months	20.28	113.37	191.57	196.19	196.19

### Energy Charge Rate

91. As stated, the computation of energy charges and fuel component (coal cost) in working capital for the period 2014-19 period is based on "as received" GCV of coal as claimed by the petitioner. The petitioner has considered the actual blending ratio as indicated in Form-15 for domestic and imported coal for arriving at the energy charge rate for the generating station. The petitioner has claimed Energy Charge Rate (ECR) of 205.00 Paise/kWh for Unit-I in 2015-16 for and 207.60 Paise/kWh for the period from 2015-16 to 2018-19 based on the weighted average price, GCV of coal (as received basis) & Oil procured and burnt for the preceding three months. The Energy Charge Rate (ECR) is worked out based on operational norms specified in 2014 Tariff Regulations and on "as received" GCV of coal for preceding 3 months i.e. June, 2015, July, 2015 and August, 2015 in respect of the generating station for the period from COD of Unit-I as under:

	Unit	2015-19
--	------	---------



Capacity	MW	1000
Weighted average Gross Station Heat Rate	Kcal/kWh	2351.250
Auxiliar Energy Consumption	%	6.25
Weighted average GCV of oil (as fired)	Kcal/lit	10000
Weighted average GCV of Coal (as received)	Kcal/kg	4651.66 for Station
Weighted average price of oil	Rs/KL	33930.69 for Unit-I 31617.86 for Unit-II/ station
Weighted average price of Coal	Rs/MT	3876.51 for Unit-II/ station
<b>Rate of Energy Charge ex-bus</b>	<b>Paise/kWh</b>	<b>210.372 for Unit-II/ station</b>

92. The difference between the Energy charges claimed and allowed is on account of the fact that while the petitioner has considered the APC of 5.25 %, the Commission had allowed the APC of 6.25% for reasons stated in this order.

93. Accordingly, the Energy charges for 2 months on the basis of “as received” GCV of coal for the purpose of interest on working capital is worked out as under:

2015-16		2016-17	2017-18	2018-19
18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016			
2357.22	14135.01	23885.54	24461.10	24461.10

(₹ in lakh)

94. Based on the above, the fuel component and energy charges in working capital are allowed as under:

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016			
Cost of Coal for 60 days	2298.63	13791.77	23369.40	23932.51	23932.51
Cost of Secondary fuel oil 2 months	20.28	113.37	191.57	196.19	196.19
Energy Charges for 2 months	2357.22	14135.01	23885.54	24461.10	24461.10

(₹ in lakh)

### Maintenance spares

95. The petitioner has claimed maintenance spares in working capital as under:

2015-16		2016-17	2017-18	2018-19
18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016			
1701.00	3402.00	3616.00	3844.00	4086.00

(₹ in lakh)





96. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provides for Maintenance spares @ 20% of the Operation & Maintenance expenses. Accordingly, maintenance spares @ 20 % of the O&M expenses, including water charges, is allowed as under:

2015-16		(₹ in lakh)		
18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016	2016-17	2017-18	2018-19
346.92	2044.63	3678.512	3906.512	4148.512

#### O & M Expenses (1 month)

97. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital is as under:

2015-16		(₹ in lakh)		
18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016	2016-17	2017-18	2018-19
708.75	1417.50	1506.67	1601.67	1702.50

98. Regulation 28(a)(vi) of the 2014 Tariff Regulations, provides for Operation and Maintenance expenses for one month for coal-based generating stations. Accordingly, the O&M expenses (1 month) allowed for the purpose of working capital is as under:

2015-16		(₹ in lakh)		
18.6.2015 to 28.8.2015	29.8.2015 to 31.3.2016	2016-17	2017-18	2018-19
144.550	851.929	1532.713	1627.713	1728.546

99. Accordingly, Interest on working capital is worked out and allowed as under:

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015 (1 Unit)	29.8.2015 to 31.3.2016 (Both Units)			
O&M expense	144.55	851.93	1532.71	1627.71	1728.55
Receivables (Fixed Charges)	1756.85	10941.95	18466.37	18328.05	18169.42
Receivables (Variable Charges)	463.71	8341.97	23885.54	24461.10	24461.10
Maintenance Spare	346.92	2044.63	3678.51	3906.51	4148.51
Secondary Fuel oil cost	20.28	113.37	191.57	196.19	196.19
Fuel Stock	2298.63	13791.77	23369.40	23932.51	23932.51
<b>Total Working Capital</b>	<b>5030.94</b>	<b>36085.62</b>	<b>71124.11</b>	<b>72452.07</b>	<b>72636.28</b>
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%



Interest on Working Capital	679.18	4871.56	9601.75	9781.03	9805.90
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### Annual Fixed Charges

100. The annual fixed charges for the period 2015-19 approved for the generating station is summarized as under:

(₹ in lakh)

	2015-16		2016-17	2017-18	2018-19
	18.6.2015 to 28.8.2015 (1 Unit)	29.8.2015 to 31.3.2016 (Both Units)			
Return on Equity	2211.06	13469.73	22830.19	22962.92	23089.16
Interest on Loan	3385.50	21152.14	33745.70	31318.90	28868.26
Depreciation	2530.76	15935.09	26228.02	26372.87	26510.66
Interest on Working Capital	679.18	4871.56	9601.75	9781.03	9805.90
O & M Expenses	1734.60	10223.15	18392.56	19532.56	20742.56
<b>Total</b>	<b>10541.10</b>	<b>65651.67</b>	<b>110798.23</b>	<b>109968.28</b>	<b>109016.54</b>

Note: All figures under each head have been rounded. The figure in total column in each year is also rounded. As such, the sum of individual items may not be equal to the arithmetic total of the column

### Month to Month Energy Charges

101. Sub-clause (a) of clause (6) of Regulation 30 of the 2014 Tariff Regulations provides as under:

“6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:

(a) For coal based and lignite fired stations

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.

CVSF = Calorific value of secondary fuel, in kCal per ml.

ECR = Energy charge rate, in Rupees per kWh sent out.

GHR = Gross station heat rate, in kCal per kWh.

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in Rupees per kg.

LPPF = Weighted average landed price of primary fuel, in Rupees per kg”

102. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the above formulae read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014. The GCV of coal needs to be measured from the sample collected at the jetty for considering 'as received' basis in terms of provision of para 5 (sampling from ship during loading or unloading) and para 8 (sampling from loaded ships) of IS 436(Part-1/Section-1) -1964.



103. The Commission in order dated 19.2.2016 in Petition No. 33/MP/2014 (TPDDL v NTPC & anr) had directed as under:

*"The respondents shall introduce help desk to attend to the queries and concerns of the beneficiaries with regard to the energy charges. The contentious issues regarding the energy charges should be sorted out with the beneficiaries at the senior management level, preferably at the level of Executive Directors."*

Accordingly, in line with the above decision, help desk shall be introduced by the petitioner and contentious issues if any, which arise in respect of energy charges for this generating station shall be sorted out with the beneficiaries at the Senior Management level

#### **Application Fee and Publication Expenses**

104. The petitioner has sought the reimbursement of filing fees and the expenses incurred for publication of notices for application of tariff for the period 2015-19. The petitioner has deposited the tariff filing fees of ₹13200000/- each for the period 2015-17 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. The petitioner has also incurred charges towards publication of the said tariff petition in the newspapers. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 6.1.2016 in Petition No.232/GT/2014, the petitioner shall be entitled to recover the filing fees (*pro-rata to the contracted capacity*) and the expenses incurred on publication of notices directly from the respondents. The filing fees for the remaining years of the tariff period 2017-19 shall be recovered pro rata after deposit of the same and production of documentary proof.

105. The annual fixed charges approved for the period 2015-19 shall be adjusted against the interim tariff allowed vide order dated 13.10.2015 and is also subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

106. Petition No. 135/GT/2015 is disposed of in terms of the above.

**-Sd/-**  
**(Dr. M.K.Iyer)**  
**Member**

**-Sd/-**  
**(A.S Bakshi)**  
**Member**

**-Sd/-**  
**(A.K.Singhal)**  
**Member**

**-Sd/-**  
**(Gireesh B Pradhan)**  
**Chairperson**



**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 292/GT/2014**

**Coram:**

**Shri. Gireesh B. Pradhan, Chairman  
Shri A.K.Singhal, Member  
Dr. M. K. Iyer, Member**

**Date of Hearing: 19.04.2016  
Date of Order : 24.01.2017**

**In the matter of**

Approval of tariff of Ramagundam Super Thermal Power Station Stage-I & II (2100 MW) for the period from 1.4.2014 to 31.3.2019

**And in the matter of**

NTPC Ltd  
NTPC Bhawan,  
Core-7, SCOPE Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi-110003)

**.....Petitioner**

**Vs**

1. AP Eastern Power Distribution Company Ltd.  
Corporate Office, P&T Colony, Seethammadhara,  
Visakhapatnam – 530 013 - (AP)
2. AP Southern Power Distribution Company Ltd.  
Back Side Srinivasa Kalyana Mandapam  
Tiruchhanur Road, Kesavayana Gunta,  
Tirupathi – 517 503 (AP)
3. Telangana State Northern Power Distribution Company Ltd.  
formerly Andhra Pradesh Northern Power Distribution Company Ltd.  
H.No. 2-5-31/2 Vidyut Bhavan, Nakkalagutta,  
Hanamkonda Warangal – 506 001
4. Telangana State Southern Power Distribution Company Ltd.  
formerly AP Central Power Distribution Company Ltd.  
Mint Compound, Corporate Office  
Hyderabad – 500 063.
5. Bangalore Electricity Supply Company Ltd.  
Krishna Rajendra Circle  
Bangalore – 560 001.



6. -Mangalore Electricity Supply Company Ltd .  
Paradigm Plaza, A.B. Shetty Circle, Pandeshwar, Mangalore – 575 001.
7. Chamundeshwari Electricity Supply Corp. Ltd.  
Corporate Office, No. 927, L.J.Avenue,  
New Kantharaj Urs Road, Saraswathipuram  
Mysore – 570 009.
8. Gulbarga Electricity Supply Company Ltd.  
Main road, Gulbarga, 585 102,Karnataka.
9. Hubli Electricity Supply Company Ltd.  
Corporate office,  
P.B.Road, Navanagar, Hubli – 580 025.
10. Kerala State Electricity Board Ltd.  
Vaidyuthi Bhavanam,  
Pattom Thiruvananthapuram – 695 004.
11. Tamil Nadu Generation & Distribution Corporation Ltd.  
7th Floor ,NPKRR Maligai,  
144, Anna Salai, Chennai – 600 002.
12. Electricity Department Govt. of Puducherry  
137, NSC Bose Salai, Puducherry – 605 001
13. Electricity Department Government of Goa  
Vidyut Bhavan, 3rd Floor  
Panaji, GOA – 403 001

....Respondents

**Parties present:**

For Petitioner: Shri Ajay Dua, NTPC  
Shri Nishant Gupta, NTPC  
Shri Bhupinder Kumar, NTPC  
Shri Rajeev Choudhary, NTPC  
Shri V.K. Garg, NTPC  
Shri Rohit Chhabra, NTPC

For Respondents: Shri S. Vallinayagam, Advocate, TANGEDCO

**ORDER**

This petition has been filed by the petitioner, NTPC for approval of tariff of Ramagundam Super Thermal Power Station Stage-I & II (3X200 MW + 3X500 MW) (hereinafter referred to as “the generating station”) for the period 2014-19 in accordance with the provisions of the Central



Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (herein after referred to as "the 2014 Tariff Regulations").

2. The generating station with a capacity of 2100 MW comprises of three units of 200 MW and three units of 500 MW. The dates of commercial operation of the different units of the generating station are as under:

Units	Dates of commercial operation
Unit-I	1.3.1984
Unit-II	1.11.1984
Unit-III	1.5.1985
Unit-IV	1.11.1988
Unit-V	1.9.1989
<b>Unit-VI / Generating Station</b>	<b>1.4.1991</b>

3. The Commission vide order dated 27.6.2016 in Petition No. 217/GT/2014 had revised the tariff of the generating station for the period 2009-14 after truing-up of the additional capital expenditure in terms of Regulation 6 (1) of the 2009 Tariff Regulations , considering the capital cost of ₹230569.84 lakh as on 31.3.2014. The annual fixed charges approved by the order dated 27.6.2016 is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	0.00	0.00	48.13	617.59	2396.41
Interest on Loan	129.77	131.45	141.49	217.94	259.47
Return on Equity	26779.77	26377.87	26030.91	26097.13	26837.67
Interest on Working Capital	10345.41	10458.29	10604.34	10710.74	10884.15
O&M Expenses	30420.00	32154.00	33999.00	35946.00	38004.00
Cost of Secondary Fuel Oil	3199.93	3199.93	3208.70	3199.93	3199.93
Compensation Allowance	935.00	955.00	975.00	975.00	975.00
Special Allowance	1000.00	2114.40	3353.02	3544.81	3747.57
<b>Total</b>	<b>72809.88</b>	<b>75390.95</b>	<b>78360.58</b>	<b>81309.13</b>	<b>86304.20</b>

4. The petitioner vide affidavit dated on 11.8.2014 has filed this petition for approval of tariff of the generating station in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner for the period 2014-19 are as under:





**Capital Cost**

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	231355.07	234248.00	234455.00	236770.00	237070.00
Add: Additional capital expenditure	2892.93	207.00	2315.00	300.00	2257.00
<b>Closing Capital Cost</b>	<b>234248.00</b>	<b>234455.00</b>	<b>236770.00</b>	<b>237070.00</b>	<b>239327.00</b>
Average Capital Cost	232801.54	234351.50	235612.50	236920.00	238198.50

**Annual Fixed Charges**

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1206.93	158.21	224.79	293.83	361.33
Interest on Loan	240.76	282.86	355.15	425.25	485.12
Return on Equity	23487.10	23581.86	23658.95	23738.88	23817.05
Interest on Working Capital	15642.68	15777.19	15947.33	16128.16	16319.70
O&M Expenses	39712.23	42214.37	44872.04	47700.59	50706.40
Compensation Allowance	1000.00	500.00	0.00	0.00	0.00
Special Allowance	7735.54	12214.87	17231.89	18326.11	19489.82
<b>Total</b>	<b>89025.24</b>	<b>94729.36</b>	<b>102290.15</b>	<b>106612.83</b>	<b>111179.42</b>

5. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies on the respondents. The respondents, KSEB , TANGEDCO have filed their replies and the petitioner has filed its rejoinder to the same. We now proceed to examine the claim of the petitioner based on the submissions of the parties and the documents available on record as discussed in the subsequent paragraphs.

**Capital Cost as on 1.4.2014**

6. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

*“The Capital cost of an existing project shall include the following:*

*(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*

*(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*

*(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”*



7. The annual fixed charges claimed by the petitioner are based on opening capital cost of ₹231355.07 lakh as on 1.4.2014 as against ₹230569.84 lakh as on 31.3.2014 admitted vide order dated 27.6.2016 in Petition No. 217/GT/2014. Accordingly, the opening capital cost of ₹230569.84 lakh as on 1.4.2014 has been considered.

**Projected Additional Capital Expenditure during 2014-19**

8. Regulation 14 (3) of the 2014 Tariff Regulations, provides as under:

*"14.(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

*(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*

*(ii) Change in law or compliance of any existing law;*

*(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*

*(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;*

*(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*

*(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*

*(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;*

*(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;*



(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite based station shall be met out of compensation allowance:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M), repairs and maintenance under (O&M) expenses and Compensation Allowance, same expenditure cannot be claimed under this regulation."

9. The break-up of the projected additional capital expenditure claimed by the petitioner during 2014-19 is detailed as under:-

(₹ in lakh)								
S. No.	Head of Work / Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
1	Ash Dyke/ash pond related works	14(3)(iv)	447.69	0.00	1400.00	0.00	0.00	1847.69
2	N2 Dyke strengthening	14(3)(iv)	650.00	0.00	0.00	0.00	0.00	650.00
3	DAES	14(3)(ii)	1795.24	0.00	0.00	0.00	0.00	1795.24
4	Online CO <sub>2</sub> , SO <sub>x</sub> ,NO <sub>x</sub> Analyser	14(3)(ii)	0.00	167.00	0.00	0.00	0.00	167.00
5	Online Effluent Analyzers	14(3)(ii)	0.00	40.00	0.00	0.00	0.00	40.00
6	MVW system for CHP	14(3)(ii) & 14(3)(iii)	0.00	0.00	690.00	0.00	0.00	690.00
7	Wagons	14(3)(x)	0.00	0.00	225.00	0.00	0.00	225.00
8	Earth covers for Ash Dyke	14(3)(iv)	0.00	0.00	0.00	300.00	300.00	300.00
9	Halon Replacement	14(3)(ii)	0.00	0.00	0.00	0.00	1357.00	1357.00



S. No.	Head of Work / Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
10	Mulsifier system for transformers & cable galleries	14(3)(ii) & 14(3)(iii)	0.00	0.00	0.00	0.00	600.00	600.00
	<b>Total Additional Capital Expenditure</b>		<b>2892.93</b>	<b>207.00</b>	<b>2315.00</b>	<b>300.00</b>	<b>2257.00</b>	<b>7971.93</b>

10. The projected additional capital expenditure claimed by the petitioner has been discussed in the succeeding paragraphs.

#### **Change in law, Safety and Security-Regulation 14(3)(ii) & 14(3)(iii)**

##### **Regulation 14(3)(ii)**

11. The petitioner has claimed the projected additional capital expenditure of ₹1795.24 lakh in 2014-15 towards Dry Ash Extraction System(DAES), ₹167.00 lakh in 2015-16 towards Online CO<sub>2</sub>,SOX,NOX Analyzer, ₹40.00 lakh in 2015-16 towards Online Effluent Analyzer and ₹1357.00 lakh in 2018-19 towards Halon Replacement. In regard DAES the petitioner has submitted that the same is essential in view of Ministry of Environment and Forest (MoEF) GoI, notification dated 3.11.2009 regarding ash utilisation. It is required to increase dry ash utilisation to 100% as part of maintaining environmental standards. The petitioner has further submitted that the Commission in its order dated 31.8.2012 in Petition No. 278/2009 and order dated 26.2.2014 in Petition No. 189/GT/2013, has allowed the same. It has also submitted that the asset was partly capitalised during 2009-14 and the remaining asset is projected to be capitalised in 2014-15. The petitioner has also submitted that the generating station units are running continuously and the work needs part isolations with careful execution causing extra time to execute the work. Accordingly, the petitioner has submitted that part capitalisation of this work is proposed to be capitalised in 2014-15. The petitioner has further submitted that Central Electricity Authority (CEA) vide the letter dated 18.6.2007 has also approved the expenditure for Dry Ash Extraction system and has accordingly prayed that the same may be allowed.



12. The petitioner has also claimed the projected additional capital expenditure of ₹167.00 lakh towards online CO<sub>2</sub>, SOX, NOX Analyzers and ₹40.00 lakh towards Online Effluent Analyzers in 2015-16. The petitioner, in justification of the same has submitted that these works/assets are required as per the Central Pollution Control Board (CPCB) directions to the State Pollution Control Boards (SPCBs) to ensure the installation of these assets. The petitioner has also submitted the SPCB letter dated 5.2.2014 along with the petition.

13. The petitioner has further projected additional capital expenditure of ₹1357.00 lakh in 2018-19 towards Halon Replacement. In justification for the same the petitioner has submitted that Halon fire protection system is provided for permanent fire fighting system and uses substances which are Ozone depleting in nature. As per the Environment (Protection) Act 1986, the Central Government laid down rules for Ozone Depleting Substances (Regulation and Control) Rules, 2000. It has submitted that as per the rules, no person or enterprise shall engage in any activity that uses ozone depleting substances unless he is registered with the authority and the generating companies are allowed to continue with the existing fire fighting system for a period of 10 years (upto 1.1.2010) after which the production and servicing of the same was stopped (Vide Schedule IV). The petitioner has further submitted that as per the Montreal Protocol on substances that deplete the Ozone layer, plants using Ozone depleting substances must phase out these systems and adopt systems which use substances that do not deplete the Ozone layer. Accordingly, it has proposed to replace Halon gas fire protection system with alternate inert gas in line with Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulation, 2010 & ODS Rules, 2010. The petitioner has prayed to allow capitalization of Inert gas fire extinguishing system under Regulation 14(3)(ii).

**Regulation 14(3)(ii) & 14(3)(iii)**

14. In addition to the above the petitioner has also claimed projected additional capital expenditure of ₹690.00 lakh in 2016-17 towards MVW system for CHP and ₹600.00 lakh in 2018-19



towards Mulsifier system for transformers & cable galleries under Regulation 14(3)(ii) & 14(3)(iii) of the 2014 Tariff Regulations. In justification of the same the petitioner has submitted that assessment of availability, reliability and design adequacy of fire detection and protection system of all coal based thermal stations of NTPC was carried out inline with Regulation 12(5) of Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulations, 2010, published in 20.8.2010. The petitioner has further submitted that major jobs identified to comply the said regulation with respect to fire detection and protection system at the generating station are: i) Installation of MVW ( Medium Velocity Water) spray system for the various coal conveyers of Stage-I and Stage-II CHP, ii) Installation of Mulsifier system for transformers and cable galleries of Stage-I & II. It further submits that augmentation of fire protection system of Coal Handling Plant (CHP) and Stacker Re-claimer area inline with CEA Regulation is essentially required to prevent any catastrophic damage in case fire breaks out in CHP as existence of coal in CHP area makes it vulnerable to fire hazard and mobile fire protection equipments may not be able to control the spread of fire. Accordingly, it has prayed that the capitalization on account of Augmentation of fire protection system under Regulation 14(3)(ii) and 14(3)(iii) of 2014 Tariff Regulation may be allowed.

15. The respondent, TANGEDCO in its reply for expenditure towards Halon Replacement has submitted that the CEA Notification dated 2.8.2010 is with regard to the standards to be followed for construction of electrical plants and electrical lines. The last unit of the generating station was commissioned during the year 1991. The respondent has prayed that the Commission may ascertain whether the existing fire detection systems are functioning properly, as the petitioner has not furnished the details for the same. It has submitted that in the event if fire detection devices installed earlier are working satisfactorily, the necessity for allowing the expenditure as claimed one more time is unreasonable and will give double benefit to the petitioner.

16. In regard with expenditure towards Dry Ash Extraction System(DAES), Online CO<sub>2</sub>,SOX,NOX Analyzer, Online Effluent Analyzer, MVW system for CHP, Halon Replacement and





Mulsifier system for transformers & cable galleries, the respondent, TANGEDCO has pointed that the petitioner has claimed Compensation Allowance during 2014-19. Since the Compensation Allowance is admissible to the petitioner the additional capital expenditure claimed under Regulation 14(3)(ii) & (iii) should be met from Compensation Allowance. Accordingly the claim of the petitioner may be rejected.

17. In response, the petitioner has submitted that the CEA Regulations are applicable for new as well as all existing power plants and since the generating station came into existence prior to these guidelines, are to be complied now. Accordingly the petitioner has stated that expenditure is admissible under Regulation 14(3)(ii) and 14(3)(iii) of the 2014 Tariff Regulation.

18. We have considered the submission of the parties. The petitioner has opted for both Compensation and Special Allowance. The Special Allowance is provided for meeting the requirement of expenses including R&M beyond the useful life of the generating station during the period 2014-19. Since the petitioner is allowed Special Allowance in terms of Regulation 16 of the 2014 Tariff Regulations for the period 2014-19 for meeting the requirement of expenses including R&M beyond the useful life of the generating station, the projected additional capital expenditure claimed by the petitioner under Regulation 14(3)(ii) & 14(3)(iii) is disallowed as the provisions under Regulation 14(3) are for the period of normal useful life of station. Hence, the projected additional capital expenditure claimed for dry ash extraction system, online CO<sub>2</sub>, SOX, NOX analyzer, online effluent analyzers, MVW system for CHP, Halon replacement and Mulsifier system for transformers & cable galleries under Regulation 14(3)(ii) & (iii) of the 2014 Tariff Regulations is not admissible. Accordingly, the petitioner shall meet the expenses from the "Special Allowance" permitted to the generating station during 2014-2019.

**Ash Dyke/ Ash Dyke Strengthening - Regulation 14(3)(iv)**

19. The petitioner has claimed projected additional capital expenditure of ₹1097.69 lakh in 2014-15 (₹447.69 lakh for Ash Dyke/Ash Pond and ₹650.00 lakh for N<sub>2</sub> dyke strengthening works), and



₹1400.00 lakh in 2016-17 towards works related to Ash Dyke/Ash Pond. In justification petitioner has submitted that the projected expenditure is for the planned work related to Ash handling and Ash pond which are continuous in nature during the operational life of the generating station. The petitioner has further submitted that Ash pond management is of dynamic nature with respect to geographic usage, involves modifications such as raising pond height, re-routing of roads, relocating piping, re-aligning spraying requirements etc. Ash pond needs capacity enhancement and strengthening periodically. Accordingly activities like ash dyke raising, pipe re-routing etc are needed periodically. The petitioner has prayed that the Commission may allow the same.

**Earth Cover for Ash Dyke- Regulation 14(3)(iv)**

20. The petitioner has claimed projected additional capital expenditure of ₹300.00 lakh in 2017-18 and ₹300.00 lakh in 2018-19 towards Earth covers for ash dyke and has submitted that after complete filling of ponds with ash, earth cover is required to prevent fugitive emissions and to facilitate growth of vegetation. It has pointed that the Commission in its order dated 31.8.2012 in Petition No. 278/2009 had allowed the same however, the Commission has recognized the deferment of this work in order dated 26.2.2014 in Petition No. 189/GT/2013. The petitioner has prayed that the Commission may allow the same.

21. The respondent, KSEB has submitted that separate funds are allocated for the works related to ash dyke and pond and the same may not be allowed under additional capital expenditure. The earth covers for ash dyke may be considered under the O&M expenses. The respondent, TANGEDCO has submitted that the generating station has completed 25 years in 2015-16 and hence it is only eligible for the special allowances and other claims of the petitioner under additional capital expenditure in respect of the ash dyke or pond is unjustified and the same may be disallowed. In response to KSEB, the petitioner has submitted that additional capital expenditure related to the ash dyke or pond and earth covers has been claimed under Regulation 14(3)(iv) of the 2014 Tariff Regulation. The petitioner has further submitted that the Commission had approved the capitalization of earth cover in its order dated 31.8.2012 in Petition No. 278/2009. In response to the



respondent, TANGEDCO the petitioner has submitted that the special allowance as per the Regulation 16 of the 2014 Tariff Regulation does not envisage capital expenditure necessitated for other reasons falling under Regulation 14 of the 2014 Tariff Regulation such as change in law, ash related schemes therefore the special allowance and additional capital expenditure carried out under regulation 14 can co-exist.

22. We have examined the matter. Regulation 16 of 2014 Tariff Regulations provides as under:

***“16. Special Allowance for Coal-based/Lignite fired Thermal Generating station:***

*(1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing R&M may opt to avail a „special allowance“ in accordance with the norms specified in this regulation, as compensation for meeting the requirement of expenses including renovation and modernisation beyond the useful life of the generating station or a unit thereof, and in such an event, revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost:*

*Provided that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.*

.

*(3) In the event of granting special allowance by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed to furnish details of such expenditure.”*

23. Regulation 27(7) of 2014 Tariff Regulations provides as under:

*“27(7): The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.”*

24. The generating station was declared under commercial operation on 1.4.1991. Accordingly the useful life in term of Regulation is 25 years. It is observed that the petitioner in this petition has claimed projected additional capital expenditure for the above works during the fag end of the completion of useful life of 25 years. The petitioner has also not submitted any comprehensive scheme of R&M for extension of life of the generating station. In terms of Regulation 16 of the 2014 Tariff Regulations, the petitioner has opted for “Special Allowance” from the year 2014-15 onwards



in order to meet the requirement of expenses including R&M beyond the useful life of the generating station. In this background, we are not inclined to allow the projected additional capital expenditure of ₹447.69 lakh and ₹650.00 lakh in 2014-15 and ₹1400.00 in 2016-17 as claimed by the petitioner towards Ash dyke or ash pond related works and N2 Dyke strengthening, we are also not allowing ₹300.00 lakh in 2017-18 and ₹300.00 lakh in 2018-19 towards Earth covers for ash dyke. Accordingly, the petitioner shall meet the expenses from the "Special Allowance" permitted to the generating station for 2014-2015.

**Wagons -Regulation 14(3)(x)**

25. The petitioner has claimed projected additional capital expenditure of ₹225.00 lakh in 2016-17 towards replacement of Wagons under Regulation 14(3)(x) of the 2014 Tariff Regulations. The petitioner has submitted that six no. of wagons are to be procured for replacement of damaged wagons and de-capitalisation of these wagons have been taken into account by the Commission while approving additional capitalisation for 2007-09 in Petition No. 142/2009 with 36/2009. It has further submitted that the Railway wagons were also allowed by the Commission in order dated 31.8.2012 in Pet No 278/2009 and in order dated 26.2.2014 in Petition No 189/GT/2013 under Regulation 9(2)(vii) of 2009 Tariff Regulations however due to high gestation period and limited number of vendors, the same could not be capitalised in 2009-14. Accordingly, the petitioner has submitted that same is projected to be capitalised in 2016-17.

26. The respondent, TANGEDCO has submitted that the Commission in its order dated 31.8.2012 in Petition No. 278/2009 had allowed the additional capital expenditure of ₹228.00 lakh in 2011-12, and thereafter the expenditure was shifted in 2013-14 in order dated 26.2.2014 in Petition No. 189/GT/2013 shifted the projected expenditure of ₹228.00 lakh was allowed in 2013-14,. The petitioner has stated that the expenditure allowed was partly capitalised in 2009-14 and the remaining is projected to be capitalised during 2014-19. The respondent has further submitted that the petitioner has again shifted the expenditure from the previous period 2009-14 to the present



period 2014-19 and has stated that the expenditure claimed for the year 2016-17 is on projected basis. Accordingly, the respondent, TANGEDCO has prayed to direct the petitioner to claim the expenditure on actual basis at the time of truing up after finalization of vendors and procurement of wagons.

27. In response, the petitioner has submitted that the Commission had approved the expenditure for Wagons in order dated 31.8.2012 in Petition No. 278/2009 and order dated 26.2.2014 in Petition No. 189/GT/2013. The petitioner has further clarified that due to high gestation period and limited no. of vendors available the same could not be capitalized in 2009-14 and the expenditure towards the wagons is expected to be capitalized in 2016-17. It has further submitted that the details of the capitalization requested by the respondent shall be submitted at the time of filing of true-up petition.

28. We have considered the submission of the parties. The projected additional capital expenditure claimed towards replacement of wagons, after expiry of useful life of 25 years of the generating station, is in the nature of R&M. As stated, the petitioner has opted for Special Allowance for meeting the requirement of expenses including R&M beyond the useful life of the generating station during the period 2014-19. Since the petitioner is allowed Special Allowance in terms of Regulation 16 of the 2014 Tariff Regulations for the period 2014-19 for meeting the requirement of expenses including R&M beyond the useful life of the generating station, the projected additional capital expenditure of ₹225.00 lakh in 2016-17 is disallowed. The petitioner shall meet the expenses from the Special Allowance allowed to the generating station.

29. Based on the above discussions, the projected additional capital expenditure claimed for the period 2014-19 as in para 9 above has not been allowed.

30. Accordingly, the capital cost for the period 2014-19 is allowed as under

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Opening Capital Cost</b>	230569.84	230569.84	230569.84	230569.84	230569.84



	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Add: Additional capital expenditure</b>	0.00	0.00	0.00	0.00	0.00
<b>Closing Capital Cost</b>	230569.84	230569.84	230569.84	230569.84	230569.84

### Debt-Equity Ratio

31. Regulation 19 of the 2014 Tariff Regulations provides as under:

*(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that:*

*(i) where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*

*(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*

*(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.*

**Explanation** - The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

*(2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.*

*(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.*

*(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt:equity ratio has not been determined by the Commission for determination of tariff for the period ending*





*31.3.2014, the Commission shall approve the debt:equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.*

*(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.*

32. Accordingly, the gross normative loan and equity amounting to ₹115984.97 lakh and ₹114584.88 lakh, respectively as on 31.3.2014 as considered in order dated 27.6.2016 in Petition No. 217/GT/2014, has been considered as gross normative loan and equity as on 1.4.2014. The normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to truing-up in terms of the 2014 Tariff Regulations.

#### **Return on Equity**

33. Regulation 24 of the 2014 Tariff Regulations provides as under:

***“24. Return on Equity:*** (1) *Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.*

*(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:*

*Provided that:*

*i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:*

*ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:*

*iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:*

*iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted*



*Governor Mode Operation (RGM)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:*

*v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:*

*vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.*

34. Regulation 25 of the 2014 Tariff Regulations provides as under:

***“Tax on Return on Equity***

*(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.*

*(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:*

*Rate of pre-tax return on equity = Base rate / (1-t)*

*Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.*

35. The petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate of 23.939%. The respondent, KSEB has submitted the petitioner has not provided any documentary proof for considering the effective tax rate of 23.939%, and hence the petitioner may be directed to true up the grossed up rate of return on equity at the end of every financial year strictly as per Regulation 25(3) of the 2014 Tariff Regulation. In response, the petitioner has submitted that the effective tax rate has been calculated based on the estimated profit and tax to be paid for the financial year 2014-15 as per Regulation 25(2) of the 2014 Tariff Regulation and the



same rate has been considered upto 31.3.2019. However this rate shall be revised as per Regulation 25(3) for the billing of the relevant financial year.

36. We have considered the submissions. This issue being not confined to a single petition and being generic in nature as the issue is applicable to all NTPC petitions uniformly need deliberation. We have examined the documents submitted and observed that the regulation prescribe computation of effective tax rate on the basis of tax paid, still we deem it proper to allow grossing up on MAT rate considering the fact that the matter is getting decided in the year 2016-17. Accordingly, the effective tax rate (MAT) of 20.961% has been considered for the year 2014-15 and 21.342% for the year 2015-16 onwards up to the year 2018-19 for the purpose of grossing up of base rate of 15.5%. Accordingly, the rate of Return on Equity works out to 19.610% for the year 2014-15 and 19.705% for the year 2015-16 onwards. This is however, subject to true-up. Accordingly, return on equity has been worked out as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening	114584.88	114584.88	114584.88	114584.88	114584.88
Addition of Equity due to additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Normative Equity-Closing	114584.88	114584.88	114584.88	114584.88	114584.88
Average Normative Equity	114584.88	114584.88	114584.88	114584.88	114584.88
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
Tax Rate for the year (%)	20.961	21.342	21.342	21.342	21.342
Rate of Return on Equity (Pre Tax) (%)	19.610	19.705	19.705	19.705	19.705
<b>Return on Equity (Pre Tax) annualised</b>	<b>22470.09</b>	<b>22578.95</b>	<b>22578.95</b>	<b>22578.95</b>	<b>22578.95</b>

#### Interest on Loan

37. Regulation 26 of the 2014 Tariff Regulations provides as under:

**“26. Interest on loan capital:** (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.  
 (2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.



(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such refinancing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."

38. Interest on loan has been worked out as under:

- a. The gross normative loan of ₹115984.97 lakh as on 1.4.2014 has been considered.
- b. Cumulative repayment of loan of ₹113695.86 lakh as on 31.3.2014 as considered in order dated 27.6.2016 in Petition No.217/GT/2014 has been considered as on 1.4.2014.



- c. Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.
- d. Depreciation allowed has been considered as repayment of normative loan during the respective years of the tariff period 2014-19. Accordingly, net normative closing loan as on 31.3.2015 works out to ₹919.42 lakh. However, considering the fact that the petitioner has recovered the entire depreciable value corresponding to the admitted capital cost as on 31.3.2015, the remaining balance normative loan of ₹919.42 lakh shall be repaid by the petitioner out of depreciation recovered till 31.3.2015. Accordingly, for the purpose of tariff ₹919.42 lakh has been considered as additional repayment during the year 2014-15.
- e. In line with the provisions of the regulation, the weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the generating station. In case of loans carrying floating rate of interest the rate of interest as provided by the petitioner has been considered for the purpose of tariff. The calculations for weighted average rate of interest on loan have been enclosed as Annexure-I to this order. The necessary calculation for interest on loan is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	115984.97	115984.97	115984.97	115984.97	115984.97
Cumulative repayment of loan upto previous year	113695.85	115984.97	115984.97	115984.97	115984.97
Net Loan Opening	2289.12	0.00	0.00	0.00	0.00
Addition due to additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Repayment of loan during the year	1369.70	0.00	0.00	0.00	0.00
Additional Repayment of loan	919.42	0.00	0.00	0.00	0.00
Less: Repayment adjustment on account of de-capitalization	0.00	0.00	0.00	0.00	0.00
Add: Repayment adjustment on account of discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	0.00	0.00	0.00	0.00	0.00
Net Repayment	2289.12	0.00	0.00	0.00	0.00
Net Loan Closing	0.00	0.00	0.00	0.00	0.00
Average Loan	1144.56	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest of loan (%)	10.186	10.204	10.223	10.242	10.250
Interest on Loan	<b>116.58</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



## Depreciation

39. Regulation 27 of the 2014 Tariff Regulations provides as under:

**“27. Depreciation:** (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

*Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*

*Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-II** to these regulations for the assets of the generating station and transmission system:

*Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.





(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project(five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

40. The cumulative depreciation amounting to ₹203766.01 lakh as on 31.3.2014 as considered in order dated 27.6.2016 has been considered for the purpose of tariff. Further, the value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing depreciation) for the year 2014-15 works out to ₹205135.71 lakh. Since the useful life of the generating station as on 1.4.2014 exceed 12 years from the effective station COD, depreciation for the period 2014-19 has been calculated by spreading over the remaining depreciable value over the balance useful life of the generating station for respective years.

41. Accordingly, depreciation has been computed as follows:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	230569.84	230569.84	230569.84	230569.84	230569.84
Add: Additional Capital Expenditure	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	230569.84	230569.84	230569.84	230569.84	230569.84
Average Capital Cost	230569.84	230569.84	230569.84	230569.84	230569.84
Balance useful life at the beginning of the period	1.00	1.00	1.00	1.00	1.00
Depreciable value (excluding land)@ 90%	205135.71	205135.71	205135.71	205135.71	205135.71
Balance depreciable Value	1369.70	0.00	0.00	0.00	0.00
Depreciation (annualized)	<b>1369.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Cumulative depreciation up to previous year	203766.01	205135.71	205135.71	205135.71	205135.71
Less: Cumulative Depreciation adjustment on account of un-discharged liabilities	0.00	0.00	0.00	0.00	0.00
Less: Cumulative Depreciation reduction due to de-capitalization	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	205135.71	205135.71	205135.71	205135.71	205135.71



### Compensation Allowance

42. Regulation 17(1) of the 2014 Tariff Regulations provides as under:

**“17. Compensation Allowance:** (1) In case of coal-based or lignite-fired thermal generating station or a unit thereof, a separate compensation allowance shall be admissible to meet expenses on new assets of capital nature which are not admissible under Regulation 14 of these regulations, and in such an event, revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

(2) The Compensation Allowance shall be allowed in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life.”

Years of operation	Compensation Allowance (₹ lakh/MW/year)
0-10	Nil
11-15	0.20
16-20	0.50
21-25	1.00

43. The petitioner has claimed compensation allowance (unit-wise) to meet the expenses on new assets of capital nature including in the nature of minor assets as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1000.00	500.00	0.00	0.00	0.00

44. It is observed that Units I to IV of the generating stations have completed 25 years of useful life up to 2013-14 and Unit V & VI would complete 25 years of useful life in years 2014-15 and 2015-16 respectively. Accordingly the compensation allowance claimed by the petitioner is allowed as under:

(₹ in lakh)		
Description	Unit V	Unit VI
Capacity in MW	500	500
2014-15	500.00	500.00
2015-16	0.00	500.00
2016-17	0.00	0.00
2017-18	0.00	0.00
2018-19	0.00	0.00
<b>Total</b>	<b>500.00</b>	<b>1000.00</b>



## Special Allowance

45. Regulation 16 of the 2014 Tariff Regulations provides for Special Allowance for Coal-based

/Lignite fired Thermal Generating stations as under:

*“ (1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing R&M may opt to avail a „special allowance“ in accordance with the norms specified in this regulation, as compensation for meeting the requirement of expenses including renovation and modernization beyond the useful life of the generating station or a unit thereof, and in such an event, revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost:*

*Provided that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.*

*(2) The special Allowance shall be @Rs. 7.5 lakh/MW/year for the year 2014-15 and thereafter escalated @ 6.35 % every year during the tariff period 2014-15 to 2018-19, unit-wise from the next financial year from the respective date of completion of useful life with reference to the date of commercial operation of the respective unit of generating station:*

*Provided that in respect of a unit in commercial operation for more than 25 years as on 1.4.2014, this allowance shall be admissible from the year 2014-15:*

*Provided further that the special allowance for the generating stations, which, in its discretion, has already availed of a „special allowance“ in accordance with the norms specified in clause (4) of regulations 10 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff Determination) Regulations, 2009, shall be allowed Special Allowance by escalating the special allowance allowed for the year 2013-14 @6.35% every year during the tariff period 2014-15 to 2018-19.*

*(3) In the event of granting special allowance by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed to furnish details of such expenditure.*

46. The Special Allowance claimed by the petitioner in is as follows:-

Special Allowance	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
	7735.54	12214.87	17231.89	18326.11	19489.82

47. Accordingly, the Special Allowance as per clause 16(2) of 2014 Tariff Regulations, for Stage-I and Stage-II of the generating station have been worked out and allowed as under:-

(₹ in lakh)								
Units	Capacity in MW	Date of Commercial operation	Year of completion of Useful life	2014-15	2015-16	2016-17	2017-18	2018-19
I	200	1.3.1984	2008-09	1328.51	1412.87	1502.59	1598.00	1699.47
II	200	1.11.1984	2009-10	1328.51	1412.87	1502.59	1598.00	1699.47
III	200	1.5.1985	2010-11	1328.51	1412.87	1502.59	1598.00	1699.47
IV	500	1.11.1988	2013-14	3750.00	3988.13	4241.37	4510.70	4797.13



V	500	1.9.1989	2014-15	0.00	3988.13	4241.37	4510.70	4797.13
VI	500	1.4.1991	2016-17	0.00	0.00	4241.37	4510.70	4797.13
<b>Total Allowed</b>				<b>7735.54</b>	<b>12214.87</b>	<b>17231.89</b>	<b>18326.11</b>	<b>19489.82</b>

48. The petitioner has been allowed ₹74998.23 lakh as special allowance in tariff period 2014-19 and has also allowed ₹13759.78 lakh during 2009-14 period as special allowance. The petitioner is directed to maintain separately the details of expenditure incurred or utilized from special allowance for 2009-14 and 2014-19 period and shall make the details available to the Commission at the time of truing up. The petitioner shall also furnish the plan of action for utilization balance amount of special allowance recovered/ expected to be recovered at the time of true up.

### O&M Expenses

49. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides the year-wise O&M expense norms claimed for the generating station of the petitioner as under:

(₹ in lakh)					
Unit Size (MW)	2014-15	2015-16	2016-17	2017-18	2018-19
200	23.90	25.40	27.00	28.70	30.51
500	16.00	17.01	18.08	19.22	20.43

50. Proviso to the Regulation 29 (1) (a) of the 2014 Tariff Regulations states as under:

*“Provided that the above norms shall be multiplied by the following factors for arriving at norms of O&M expenses for additional units in respective sizes for the units whose COD occurs on or after 1.4.2014 in the same station:*

200/210/250 MW	Additional 5 <sup>th</sup> & 6 <sup>th</sup> units	0.90
	Additional 7 <sup>th</sup> & more units	0.85
300/330/350 MW	Additional 4 <sup>th</sup> & 5 <sup>th</sup> units	0.90
	Additional 6 <sup>th</sup> & more units	0.85
500 MW and above	Additional 3 <sup>rd</sup> & 4 <sup>th</sup> units	0.90
	Additional 5 <sup>th</sup> & above units	0.85

51. Accordingly, the year-wise O&M expenses claimed by the petitioner in terms of the above said norms are allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
38340.00	40755.00	43320.00	46050.00	48951.00



52. As the generating station has 3 units of 200 MW capacity in Stage-I and 3 units of 500 MW capacity in Stage-II and all these units have achieved COD prior to the period 2009-14, the multiplication factors as per proviso to Regulation 19 (a) of the 2009 Tariff regulations and proviso to Regulation 29 (1) (a) of the 2014 tariff regulations are not applicable in this case. Accordingly, the multiplication factor has not been considered while determining the O&M expenses for generating station for the period 2014-19. Consequently, the normative O&M expenses claimed by the petitioner in terms of the 2014 Tariff Regulations are allowed.

### Water Charges

53. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

*"29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization"*

54. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner.

55. The petitioner vide its petition dated 11.8.2014 has claimed water charges applicable for 2013-14 in 2014-15 and escalated the same at 6.35% annually. The water charges claimed by the petitioner are as follows:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1372.23	1459.37	1552.04	1650.59	1755.40



56. The Commission vide ROP dated 19.4.2016 had directed the petitioner to furnish the details in respect of water charges such as contracted quantum of water and allocated quantity, actual annual water consumption for the last 5 years (2009-14) along with the copy of the notification(s) of water charges. In response to the Commission's directions, the petitioner has submitted the details of the plant, type of cooling water system and water consumption and total water charges for the last 5 years i.e. 2009-14 vide affidavit dated 18.5.2016. The petitioner has revised the water charges for 2013-14 in this submission. The submission of the petitioner are as follows:

Description	Remarks
Type of Plant	Coal
Type of cooling water system	Closed Circuit Cooling
Total water charges in 2013-14	₹1521.07 lakh

FY	Quantity (MCFT)	Rate (₹/MCFT)	Total Charges (in ₹ lakh)	Remarks
2009-10	2429.90	28029.75*	681.09	-
2010-11	3349.80		938.94	-
2011-12	2731.79		765.71	-
2012-13	2623.88		1132.83	Water Charges: ₹735.45 lakh Power Charges: ₹397.38 lakh
2013-14	2865.95		1521.07	Water Charges: ₹803.31 lakh Power Charges: ₹717.76 lakh

\*For water drawn from Sriram Sagar Project (SRSP) and Yellampally Project (SYP). Water drawn from Yellampally Project was started from August 2012 for which variable charges for power for lifting the water are also paid in addition to the water charges.

57. The petitioner has also submitted the relevant notification of Irrigation & CAD Department Government of Andhra Pradesh dated 2.4.2002 and notification of Irrigation & CAD Department Government of Telangana State dated 14.8.2014 for applicable rate of water charges for the generating station.

58. As per provisions of Regulation 29(2) of the 2014 Tariff Regulations, Water charges are to be allowed separately. It is observed that there is significant difference in actual water charges of 2013-14 and 2014-15 claimed by the petitioner and water charges has been escalated at the rate of 6.35% on year to year for the period 2014-19. We have considered the submissions of the petitioner in respect of water charges vide its petition dated 11.8.2014 and vide affidavit dated 18.5.2016.





However, the petitioner has not furnished the basis of calculation of quantity of consumptive water during 2014-19 tariff period.

59. In this backdrop, we have considered the water charges claimed by the petitioner in 2014-15 and allowed the same for 2014-19 without any year to year escalation. Based on this, water charges allowed for the period 2014-19 are as under:

(₹ in lakh)	
Year	Water charges allowed
2014-15	1372.23
2015-16	1372.23
2016-17	1372.23
2017-18	1372.23
2018-19	1372.23

60. The petitioner is directed to furnish the details such as the contracted quantity, allocation of water, the actual water consumed during 2014-19, the basis of calculation of quantity of consumptive water and computation of water charges at the time of truing-up of tariff in terms of the 2014 Tariff Regulations. In addition, the petitioner shall also confirm / clarify as to whether the water charges have been paid on the basis of contracted quantity or on the basis of allocation.

61. Accordingly, the total O&M expenses including water charges as claimed by the petitioner and allowed for the purpose of tariff is as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses as claimed	38340.00	40755.00	43320.00	46050.00	48951.00
O&M Expenses as allowed	38340.00	40755.00	43320.00	46050.00	48951.00
Water charges as claimed	1372.23	1459.37	1552.04	1650.59	1755.40
Water charges as allowed	1372.23	1372.23	1372.23	1372.23	1372.23
Total O&M Expenses as claimed (including Water charges)	39712.23	42214.37	44872.04	47700.59	50706.40
<b>Total O&amp;M Expenses as allowed(including Water charges)</b>	<b>39712.23</b>	<b>42127.23</b>	<b>44692.23</b>	<b>47422.23</b>	<b>50323.23</b>



**Capital spares**

62. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up, shall be considered on merits, after prudence check.

**Operational Norms**

63. The operational norms in respect of the generating station claimed by the petitioner are as under:

Target Availability (%)	83.00
Heat Rate (kcal/kWh)	2396.43
Auxiliary Energy Consumption (%)	6.679
Specific Oil Consumption (ml/ kWh)	0.50

64. The operational norms claimed by the petitioner in accordance with Regulation 36 of the 2014 Tariff Regulations and discussed as under:

**Normative Annual Plant Availability Factor (NAPAF)**

65. Regulation 36 (A) (a) of the 2014 Tariff Regulations provides as under:

*“(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) & (e)- 85%.*

*Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.*

*The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014.”*

66. The petitioner has considered the target availability norm of 83% during 2014-19. The petitioner has submitted that the average PLF at NTPC Stations during the period 2009-10, 2010-11 was 90.81% and 88.29% respectively and during 2011-12, 2012-13 was lower at 85% and 83% respectively due to various factors. The petitioner has further submitted that Commission has prescribed lower/tighter operational norms based on the premise that Indian economy would recover and at Para 37.45 of the "Statement of Reasons" to the Tariff Regulations, 2014 has further stated that there will be improvement in the industrial growth in the country which will induce Discoms to



give more schedules thereby enabling generating stations to achieve improved loading and PLF during the tariff period 2014-19 compared to the period 2011-13. The petitioner has further submitted that in the event power demand continues to remain low and the PLF remains at the lower levels, and accordingly has prayed to grant liberty to approach the Commission for seeking relaxation of Operating Norms as per the actual scenario and PLF during the period 1.4.2014 onwards.

67. The respondent, KSEB vide its reply dated 21.10.2014 has submitted that the generating station has not faced any coal shortages during the past and the petitioner may be directed to adopt NAPA of 85% instead of 83% allowed for the generating station facing coal shortages. In response, the petitioner has submitted that the reasons of the lower P.L.F. during last 2 years are due to use of imported coal to overcome the shortage of domestic coal, partial loading due to lower demand, use of must run renewable energy etc., which is likely to persist during 2014. The petitioner has further prayed for liberty to approach for relaxation of operating norms in case the underlying assumption based on which the operating norms were fixed does not materialize i.e. PLF % of stations for 2014-19 do not increase compared to 2011-13 and submitted that the contention of the respondent is misplaced and liable to be rejected.

68. We have considered the submission of the parties. The Commission due to shortage of domestic coal supply has relaxed target availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Hence, the target availability of 83% is allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 & 2018-19 in terms of the Regulation 36(A) (a) of the 2014 Tariff Regulations.

#### **Heat Rate (kCal/kWh)**

69. The petitioner has claimed the Gross Station Heat Rate of 2396.43 kCal/kWh after computing the weighted average heat rate for the combination of 200 MW and 500 MW units in the generating station.



70. In line with the Regulation 36(C)(a)(i) of the 2014 Tariff Regulations, the Gross Station Heat Rate of the generating station has been computed as under:

Unit Size (MW)	No. of Units	Type of boiler feed pump	Unit-wise heat rate (kCal/kWh)	Wt. avg. gross station heat rate (kCal/kWh)
200	3	Electrical	2450	2396.43
500	3	Steam	2375	

71. The Gross Station Heat Rate computed above for the generating station has been considered for computation of the energy charges for the 2014-19 tariff period.

### Auxiliary Energy Consumption

72. The petitioner has claimed Auxiliary Energy Consumption at 6.68% during 2014-19 period as defined by Regulation 36(E)(a) of the Tariff Regulations, 2014 and the same is allowed.

### Specific Oil Consumption

73. Regulation 36(D)(a) of the 2014 Tariff Regulations, provides secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station. Hence, the secondary fuel oil consumption considered by the petitioner is as per norms and is allowed.

### Interest on Working Capital

74. Sub-section (c) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*“28. Interest on Working Capital:*

*(1) The working capital shall cover*

*(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations*

*(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;*

*(ii) Maintenance spares @ 30% of operation and maintenance expense specified in regulation 29; and*

*(iii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel’;*



(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;

(v) Operation and maintenance expenses for one month.”

#### Fuel Components and Energy Charges in working capital

75. The petitioner has claimed cost for fuel components in working capital based on “as fired” GCV of coal procured and secondary fuel oil burnt for the preceding three months i.e. January 2014 to March 2014 as mentioned below:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for Stock for 15 days	12874.32	12874.32	12874.32	12874.32	12874.32
Cost of Coal for Generation for 30 days	25748.63	25748.63	25748.63	25748.63	25748.63
Cost of Main Secondary Fuel Oil for 2 months	559.02	559.02	559.02	559.02	559.02

76. The issue of “as received” GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon'ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon'ble High Court of Delhi had directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

77. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

*“58. In view of the above discussion, the issues referred by the Hon'ble High Court of Delhi are decided as under:*

*(a) There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.*

*(b) The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing*



*shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC."*

78. Further, the petitioner has claimed energy charge rate (ECR) of 219.201 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & oil procured and burnt for the preceding three months. It is observed that the petitioner has not placed on record the GCV of coal on "as received" basis though the petitioner was required to furnish such information with effect from 1.4.2014 in terms of the regulation. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydraulic Augur. The petitioner has not submitted the required data regarding measurement of GCV of coal in compliance with the directions contained in the said order dated 25.1.2016. The present petition cannot be kept pending till the petitioner submits the required information. Hence, the Commission has decided to compute fuel components and the energy charges in the working capital have been computed by provisionally considering the GCV of coal on as "billed basis" and allowing an adjustment for total moisture as per the formula given as under:

$$\frac{\text{GCV} \times (1 - \text{TM})}{(1 - \text{IM})}$$

Where: GCV=Gross Calorific value of coal  
TM=Total moisture  
IM= Inherent moisture

79. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for 2014-15, 2015-16 and 2016-17 and 85% NAPAF for 2017-18 and 2018-19, and based on "as billed" GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January 2014 to March 2014 and allowed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock– 15 days	9947.89	9947.89	9947.89	10187.60	10187.60
Cost of Coal for generation– 30 days	19895.78	19895.78	19895.78	20375.20	20375.20
Cost of secondary fuel oil – two months	559.02	560.55	559.02	572.49	572.49





80. Similarly, the Energy Charge Rate (ECR) based on operational norms specified in 2014 Tariff Regulations and on "as billed" GCV of coal for preceding 3 months i.e. January 2014 to March 2014 is worked out as under:

	Unit	2014-19
Capacity	MW	2100
Gross Station Heat Rate	kCal/kWh	2396.43
Aux. Energy Consumption	%	6.68%
Weighted average GCV of oil (As fired)	kCal/Lt.	9078.00
Weighted average GCV of Coal (As Billed)	kCal/kg	4565.00
Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV Of Coal India		*
Weighted average price of oil	₹/KL	43934.48
Weighted average price of Coal	₹/MT	3025.73
Rate of energy charge ex-bus	₹/kWh	1.722**

\* To be calculated by the petitioner based on the adjustment formula

\*\* To be revised as per the figures at Sr. No. 6

81. The GCV of coal as computed above shall be adjusted in the light of the GCV of coal on "as received basis" computed by the petitioner as per our directions in order dated 25.1.2016 in Petition No. 283/GT/2014.

### Maintenance spares

82. The petitioner has claimed maintenance spares in the working capital as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
7942.45	8442.87	8974.41	9540.12	10141.28

83. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provides for Maintenance spares @ 20% of the Operation & Maintenance expenses as specified in Regulation 29. As specified in Regulation 29 (2) of the 2014 Tariff Regulations, the maintenance spares @ 20% of the operation & maintenance expenses, including water charges, are allowed as under:



(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
7942.45	8425.45	8938.45	9484.45	10064.65

### Receivables

84. Receivables equivalent to two months of capacity charge and energy charges has been worked out and allowed as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges (two months)	40894.49	41006.53	40894.49	41879.90	41879.90
Fixed Charges (two months)	12755.79	12951.07	13402.52	13925.34	14438.89
<b>Total</b>	<b>53650.28</b>	<b>53957.59</b>	<b>54297.01</b>	<b>55805.24</b>	<b>56318.79</b>

### O&M Expenses

85. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital are as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
3309.35	3517.86	3739.34	3975.05	4225.53

86. Based on the O&M expense norms specified by the Commission and in terms of the Commission's order dated 6.10.2015 in Petition No. 186/GT/2014, the O&M expenses for 1 month is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
3309.35	3510.60	3724.35	3951.85	4193.60

### Rate of interest on working capital

87. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*"Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later."*



88. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350bps) has been considered for the purpose of calculating interest on working capital. Interest on working capital has been computed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of coal towards stock- 15 days	9947.89	9947.89	9947.89	10187.60	10187.60
Cost of coal towards generation- 30 days	19895.78	19895.78	19895.78	20375.20	20375.20
Cost of secondary fuel oil- 2 months	559.02	560.55	559.02	572.49	572.49
Maintenance Spares	7942.45	8425.45	8938.45	9484.45	10064.65
Receivables- 2 months	53650.28	53957.59	54297.01	55805.24	56318.79
O & M expenses- 1 Month	3309.35	3510.6	3724.35	3951.85	4193.60
<b>Total Working Capital</b>	<b>95304.77</b>	<b>96297.87</b>	<b>97362.50</b>	<b>100376.82</b>	<b>101712.32</b>
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
<b>Interest on Working Capital</b>	<b>12866.14</b>	<b>13000.21</b>	<b>13143.94</b>	<b>13550.87</b>	<b>13731.16</b>

89. Accordingly, annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1369.70	0.00	0.00	0.00	0.00
Interest on Loan	116.58	0.00	0.00	0.00	0.00
Return on Equity	22470.09	22578.95	22578.95	22578.95	22578.95
Interest on Working Capital	12866.14	13000.21	13143.94	13550.87	13731.16
O&M Expenses	39712.23	42127.23	44692.23	47422.23	50323.23
Compensation Allowance	1000.00	500.00	0.00	0.00	0.00
Special allowance	7735.54	12214.87	17231.89	18326.11	19489.82
<b>Total</b>	<b>85270.30</b>	<b>90421.26</b>	<b>97647.01</b>	<b>101878.16</b>	<b>106123.17</b>

### Month to Month Energy Charges

90. Clause 6 sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

*"6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:*



(a) For coal based and lignite fired stations

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.

CVSF = Calorific value of secondary fuel, in kCal per ml.

ECR = Energy charge rate, in Rupees per kWh sent out.

GHR = Gross station heat rate, in kCal per kWh.

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in Rupees per kg.

LPPF = Weighted average landed price of primary fuel, in Rupees per kg

91. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations, 2014 read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014.

92. The petitioner has been directed by the Commission in its order dated 19.2.2016 in Petition No. 33/MP/2014, to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out with the beneficiaries at the Senior Management level.

### **Application Fee and Publication Expenses**

93. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited the filing fees of ₹92.40 lakhs for the period 2014-15 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover *pro rata*, the filing fees and the expenses incurred on publication of notices for the period 2014-15 directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2015-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.



94. The annual fixed charges approved for the period 2014-19 as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

95. Petition No. 292/GT/2014 is disposed of in terms of the above.

**Sd/-**  
**(Dr. M.K.Iyer)**  
**Member**

**Sd/-**  
**(A. K. Singhal)**  
**Member**

**Sd/-**  
**(Gireesh B Pradhan)**  
**Chairperson**



Annexure – 1

**WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2014-19 TARIFF PERIOD**

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Net loan – Opening	4310.00	4250.00	3677.50	3105.00	2562.50
Additions	0.00	0.00	0.00	0.00	0.00
Repayments of Loans during the year	60.00	572.50	572.50	542.50	512.50
Net loan – Closing	4250.00	3677.50	3105.00	2562.50	2050.00
Average Net Loan	4280.00	3963.75	3391.25	2833.75	2306.25
Rate of Interest on Loan with monthly rests	10.1860%	10.2039%	10.2231%	10.2419%	10.2500%
Interest on loan	435.96	404.46	346.69	290.23	236.39





**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No: 444/GT/2020**

**Coram:**

**Shri P.K. Pujari, Chairperson  
Shri I.S Jha, Member  
Shri Arun Goyal, Member**

**Date of Order: 17<sup>th</sup> November, 2021**

**In the matter of**

Petition for approval of tariff of Ramagundam Super Thermal Power Station Stage-III (500 MW) for the period from 1.4.2019 to 31.3.2024

**And**

**In the matter of**

NTPC Limited,  
NTPC Bhawan, Core-7, Scope Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi-110 003.

**.....Petitioner**

**Vs**

1. AP Eastern Power Distribution Company Limited,  
Corporate Office P&T Colony, Seethammadhara,  
Visakhapatnam – 530 013 - (AP).
2. AP Southern Power Distribution Company Limited,  
Corporate Office, Back Side Srinivasa Kalyana Mandapam,  
Tiruchhanur Road, Kesavayana Gunta,  
Tirupathi – 517 503 (AP)
3. Telangana State Northern Power Distribution Company Limited,  
H.No. 2-5-31/2, Vidyut Bhavan, Nakkalagutta, Hanamkonda,  
Warangal – 506 001 (AP)
4. Telangana State Southern Power Distribution Company Limited,  
Mint Compound, Corporate Office,  
Hyderabad (AP) – 500 063.
5. Tamil Nadu Generation & Distribution Corporation Limited,  
144, Anna Salai,  
Chennai – 600 002
6. Bangalore Electricity Supply Company Limited,  
Krishna Rajendra Circle,  
Bangalore - 560 009.



7. Mangalore Electricity Supply Company Limited,  
MESCOM Bhavan, Corporate Office,  
Bejai, Kavour cross road,  
Mangaluru-575004, Karnataka

8. Chamundeshwari Electricity Supply Corporation Limited,  
Corporate Office, No. 29, Vijayanagar, 2nd stage, Hinkal,  
Mysore – 570 017.

9. Gulbarga Electricity Supply Company Limited,  
Main road, Gulbarga,  
Gulbarga – 585 102, Karnataka.

10. Hubli Electricity Supply Company Limited,  
Corporate office, P.B.Road, Navanagar,  
Hubli – 580 025.

11. Kerala State Electricity Board Limited,  
Vaidyuthi Bhavanam, Pattom,  
Thiruvananthapuram – 695 004.

12. Electricity Department,  
Government of Puducherry,  
137, Netaji Subhash Chandra Bose Salai,  
Puducherry- 605001

...Respondents

**Parties present:**

Shri Venkatesh, Advocate, NTPC  
Shri Vikas Maini, Advocate, NTPC  
Shri Sachin Jain, NTPC  
Shri S. Vallinayagam, Advocate, TANGEDCO  
Dr. R. Kathiravan, TANGEDCO  
Ms. R. Ramalakshmi, TANGEDCO

**ORDER**

This petition has been filed by the Petitioner, NTPC Limited (in short 'NTPC') for approval of tariff of Ramagundam Super Thermal Power Station Stage-III (500 MW) (in short 'the generating station') for the 2019-24 tariff period, in accordance with the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2019 (hereinafter referred to as "the 2019 Tariff Regulations").



2. The generating station comprises of one unit with a capacity of 500 MW and the date of commercial operation of the said unit is 25.3.2005. The Commission vide its order dated 8.11.2016 in Petition No.268/GT/2014 had determined the tariff of the generating station for the 2014-19 tariff period. Thereafter, the Petitioner filed Petition No. 220/GT/2020 for revision of tariff of the generating station for 2014-19 tariff period, based on truing-up exercise and the Commission vide its order dated 25.9.2021 had determined the capital cost and annual fixed charges of the generating station as stated below:

**Capital Cost allowed***(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	156863.30	157508.45	157163.70	157918.33	157774.53
Add: Additional capital expenditure	645.15	(-) 344.75	754.63	(-) 143.80	(-) 187.50
<b>Closing Capital Cost</b>	<b>157508.45</b>	<b>157163.70</b>	<b>157918.33</b>	<b>157774.53</b>	<b>157587.03</b>
Average Capital Cost	157185.87	157336.07	157541.01	157846.43	157680.78

**Annual Fixed Charges allowed***(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	8335.24	8347.29	8357.31	2903.97	2899.34
Interest on Loan	2208.95	1509.28	833.57	399.31	165.01
Return on Equity	9247.24	9300.92	9313.04	9331.09	9346.37
Interest on Working Capital	3882.34	3904.53	3928.45	3889.22	3929.03
O&M Expenses	8343.00	8860.44	9561.76	9976.87	10700.16
Compensation Allowance	0.00	100.00	100.00	100.00	100.00
<b>Total</b>	<b>32016.78</b>	<b>32022.46</b>	<b>32094.13</b>	<b>26600.47</b>	<b>27139.90</b>

**Present Petition**

3. The Petitioner has filed the present petition for determination of tariff of the generating station for the 2019-24 tariff period based on the provisions of the 2019 Tariff Regulations. The capital cost and the annual fixed charges claimed by the Petitioner in the present petition are as under:



**Capital Cost eligible for ROE at normal rate**

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	157971.40	159267.40	160226.40	161438.40	164290.40
Add: Additional capital expenditure	1296.00	959.00	1212.00	2852.00	9632.00
Less: De-capitalization during the year/period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/period	0.00	0.00	0.00	0.00	0.00
<b>Closing Capital Cost</b>	<b>159267.40</b>	<b>160226.40</b>	<b>161438.40</b>	<b>164290.40</b>	<b>173922.40</b>
Average Capital Cost	158619.40	159746.90	160832.40	162864.40	169106.40

**Annual Fixed Charges claimed**

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	2971.61	3073.29	3182.08	3411.25	4216.09
Interest on Loan	30.37	0.00	0.00	0.00	121.27
Return on Equity	8937.57	9001.10	9062.26	9176.76	9528.47
Interest on Working Capital	3667.92	3699.18	3721.72	3753.80	3796.91
O&M Expenses (including water charges & security expenses)	12405.84	12970.98	13372.71	13913.44	14418.63
<b>Total</b>	<b>28013.30</b>	<b>28744.54</b>	<b>29338.77</b>	<b>30255.25</b>	<b>32081.38</b>

4. This petition, along with Petition No. 220/GT/2020 (truing up of tariff of the generating station for the 2014-19 tariff period) was heard through video conferencing on 13.8.2020 and the Commission, after directing the Petitioner to file certain additional information, reserved its orders in these petitions. In compliance to the directions, the Petitioner vide affidavit dated 4.11.2020 and 22.2.2021 has filed the additional information, after serving copy to the Respondents. The Respondent, KSEBL vide affidavit dated 13.8.2020 and the Respondent, TANGEDCO vide affidavits dated 17.9.2020 and 5.3.2021 have filed their replies. The Petitioner vide separate affidavits dated 4.12.2020 has filed its rejoinder to the said replies. Based on the submissions of the parties and documents available on record, we proceed to determine the tariff of the generating station, in the present petition, for the 2019-24 tariff period, on prudence check, as stated in the subsequent paragraphs.



### **Capital Cost**

5. Clause (1) of Regulation 19 of the 2019 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. Clause 3 of Regulation 19 of the 2019 Tariff Regulations provides that the capital cost of an existing project shall include the following:

*(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;*

*(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;*

*(c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;*

*(c) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*

*(d) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and*

*(f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.*

6. The annual fixed charges claimed in the petition are based on opening capital cost of Rs.157971.40 lakh as on 1.4.2019. However, the Commission vide its order dated 25.9.2021 in Petition No. 220/GT/2020 had approved the capital cost of Rs.157587.03 as on 31.3.2019. Accordingly, in terms of Regulation 19(3) of the 2019 Tariff Regulations, the capital cost of Rs.157587.03 (after removal of un-discharged liabilities) as on 31.3.2019, has been considered as the capital cost as on 1.4.2019, on cash basis.

### **Additional Capital Expenditure**

7. Clauses (1) and (2) of Regulation 25 and Regulation 26 of the 2019 Tariff Regulations provide as under:

*“25. Additional Capitalisation within the original scope and after the cut-off date:*



(1) The additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission, subject to prudence check:

- (a) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;
- (b) Change in law or compliance of any existing law;
- (c) Deferred works relating to ash pond or ash handling system in the original scope of work;
- (d) Liability for works executed prior to the cut-off date;
- (e) Force Majeure events;
- (f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and
- (g) Raising of ash dyke as a part of ash disposal system.

(2) In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:

- (a) The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;
- (b) The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;
- (c) The replacement of such asset or equipment is necessary on account of obsolescence of technology; and
- (d) The replacement of such asset or equipment has otherwise been allowed by the Commission.

#### 26. Additional Capitalisation beyond the original scope

(1) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts beyond the original scope, may be admitted by the Commission, subject to prudence check:

- (a) Liabilities to meet award of arbitration or for compliance of order or directions of any statutory authority, or order or decree of any court of law;
- (b) Change in law or compliance of any existing law;
- (c) Force Majeure events;
- (d) Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security;
- (e) Deferred works relating to ash pond or ash handling system in addition to the original scope of work, on case to case basis:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M) or repairs and maintenance under O&M expenses, the same shall not be claimed under this Regulation;

- (f) Usage of water from sewage treatment plant in thermal generating station.





*(2) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalised.*

8. The year-wise, projected additional capital expenditure, claimed by the Petitioner, for the 2019-24 tariff period, is as under:

Head of Work/ Equipment	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Ash Water Recycling System	1296.00	144.00	0.00	0.00	0.00
Hydrobins	0.00	0.00	0.00	2717.00	302.00
Ash dyke buttressing/ raising and other related works	0.00	0.00	0.00	0.00	9330.00
Up-gradation of DCS Controller and HMI	0.00	815.00	0.00	0.00	0.00
CLO2 system	0.00	0.00	1212.00	135.00	0.00
Less: De-capitalization	0.00	0.00	0.00	0.00	0.00
Add: Discharges of liabilities	0.00	0.00	0.00	0.00	0.00
<b>Net additional capital expenditure claimed</b>	<b>1296.00</b>	<b>959.00</b>	<b>1212.00</b>	<b>2852.00</b>	<b>9632.00</b>

#### **Ash Water Recycling System**

9. The Petitioner has claimed projected additional capital expenditure of Rs.1296.00 lakh in 2019-20 and Rs.144.00 lakh in 2020-21 for works relating to Ash Water Recirculation System (AWRS) under Regulation 26(1)(b) of the 2019 Tariff Regulations. The Petitioner has submitted that the Environment Clearance (in short 'EC') for Ramagundam Stage-IV (1600 MW, Telangana Phase-I) was accorded by the Ministry of Environment and Forest and Climate Change (MOEF&CC) vide its letter dated 20.1.2016 and in the said EC, it was directed for immediate installation of AWRS for reuse of drain water. Accordingly, the Petitioner has submitted that AWRS is being installed/ augmented as per the directions contained in EC of Ramagundam Stage-IV (also called as Telangana Ph-1, 2 x 800 MW project). The Respondent KSEBL has submitted that the Petitioner has not considered the de-capitalization of



existing assets which are used for ash water handling. It has also stated that while approving the same, the gross fixed asset and depreciation may also be considered.

10. The matter has been examined. The Petitioner has claimed projected additional capitalization of Rs.1296.00 lakh in 2019-20 and Rs.144.00 lakh in 2020-21 under Regulation 26(1)(b) of the 2019 Tariff Regulations in respect of the said asset/ work, which are beyond the original scope of work of the project, under change in law or for compliance with the existing law. The Commission vide ROP of the hearing dated 13.8.2020, had directed the Petitioner to clarify the following:

*“(xix) Justification for the projected additional capitalization of Rs.1440 lakh for the period 2019-21 towards Ash Water Recirculation System, being proposed in fulfillment of MOEF&CC Environmental Clearance condition for Telangana Phase -1 (2 x 800 MW). It shall be clarified whether the MOEF&CC Environmental Clearance for Telangana Phase -1 (2 x 800 MW) mandates AWRS system for this generating station. If not mandated, the reason as to how the claim is made under change in law may be submitted.”*

11. In compliance of the above, the Petitioner has submitted that condition A(viii) of EC dated 20.1.2016 granted by MOEF&CC for Telangana Ph-1 (2x800 MW) Project (earlier called as Ramagundam Stage-IV) mandates that AWRS is to be installed for existing TPPs, for use of drain water. It is observed from EC dated 20.1.2016 that MOEF&CC, in respect of Telangana Ph-1 (2x800 MW), has inserted a condition that AWRS shall be immediately installed for the existing projects and till such time, the ash pond effluents should not be discharged into agricultural fields etc. According to this, EC has made it mandatory for the Petitioner to install AWRS not only for the yet to be constructed Telangana Ph-1 (2x800 MW project), but also for Stages I, II and III of Ramagundam generating station, as these are the existing units/ stations, at the same premises. In view of the fact that the Petitioner is required to comply with the condition in EC dated 20.1.2016 of MOEF&CC, the projected additional capital expenditure of Rs.1296.00 lakh claimed in 2019-20 and Rs.144.00 lakh in 2020-21 claimed towards AWRS is allowed under Regulation 26(1)(b) of the



2019 Tariff Regulations. The Petitioner is, however, directed to submit the details of the de-capitalized assets, if any, against AWRS at the time of truing up of tariff failing which the expenditure may not be considered.

### **Hydrobins**

12. The Petitioner has claimed projected additional capital expenditure of Rs.2717.00 lakh in 2022-23 and Rs.302.00 lakh in 2023-24 towards 'Construction of Hydrobins' under Regulation 26(1)(b) of the 2019 Tariff Regulations. The Petitioner has submitted that as per MOEF&CC notification of 25.1.2016, hydrobins have been envisaged for ash handling system, to achieve 100% ash utilization. The Respondent KSEBL has submitted that since the Petitioner has not submitted the detailed break-up of the extent of ash utilization achieved and its reasonableness, the claim may be disallowed. The Petitioner has clarified that achieving 100% ash utilization is a statutory requirement in terms of MOEF&CC notification of 25.1.2016 and that the mine void filling has contributed to a considerable portion in the ash utilization.

13. The submissions have been considered. In our view, the installation of Hydrobins is for meeting the statutory requirement of 100% ash utilization as per the 2016 MOEF&CC notification, by providing the prescribed quality of ash for mine filling. Accordingly, the projected additional capital expenditure of Rs.2717.00 lakh in 2022-23 and Rs.302.00 lakh in 2023-24 claimed for 'Construction of Hydrobins' is allowed under Regulation 26(1)(b) of the 2019 Tariff Regulations. The Petitioner shall, at the time of truing-up of tariff, furnish the (i) details of the extent of ash utilization achieved prior to and after the installation of hydrobins and (ii) awarded price discovered through competitive bidding and the amount actually capitalized against Hydrobins, failing which, the expenditure may not be considered.



**Ash dyke buttressing/ raising and other related works**

14. The Petitioner has claimed projected additional capital expenditure of Rs.9330.00 lakh in 2023-24 for Ash dyke buttressing/ raising and other related works. The Petitioner has submitted that it had engaged experts to enhance the capacity of existing lagoons and disposal of ash in a safe manner and based on the advice of experts, the Petitioner is constructing a 'Peripheral Buttressing Dyke' from the downstream of the starter dyke. The Petitioner has claimed the additional capital expenditure under Regulation 25(1)(c) and Regulation 25(1)(g) of the 2019 Tariff Regulations.

15. The Commission vide ROP of the hearing dated 13.8.2020 directed the Petitioner to furnish the estimated expenditure envisaged for Ash Handling system/ Ash Pond/ Ash Dyke Raising within the original scope of work along with the actual expenditure incurred under these heads as on COD of the generating station and from COD to 31.3.2019. In response, the Petitioner vide affidavit dated 4.11.2020, has submitted that on the basis of price of 3<sup>rd</sup> quarter of 1998 price level, the Board of the Petitioner Company had approved an amount of Rs.2903.00 lakh for Ash Dyke related works and the expenditure on ash handling system forms part of the main plant turnkey project. The Petitioner has also furnished detailed break-up of the activities, along with the actual additional capital expenditure incurred for each works related to Ash pond/ Ash Handling System/ Ash Dyke raising, which are within the original scope of work from COD of the generating station till 2018-19. The Petitioner has also submitted that the total actual additional capital expenditure towards Ash Pond/ Ash Dyke works from COD till 31.3.2019 is Rs.2122.50 lakh, which is lesser than the amount of Rs.2903.00 lakh, as approved at the time of Investment Approval. The Petitioner has further submitted that the Commission has recognised such deferred works relating to Ash Pond/ Ash Dyke/ Ash handling system in all the Tariff



Regulations and there are provisions for additional capitalisation of such expenditure, even after the cut-off date of the generating station. It has submitted that the original estimate of Rs.2903.00 lakh for Ash Dyke work, at the time of approval in 2001, may not be appropriate for allowing further additional capital expenditure for Ash Handling System under Regulation 25(1)(c) of the 2019 Tariff Regulations. The Petitioner has submitted that due to lapse of time and since the investment approval is about 20 years old, which has effect on rupee depreciation and the escalation in prices. Further, the design for construction of ash dyke had also undergone changes. It has further been submitted that the approved cost of the project is Rs.178099.00 lakh, as per the 3<sup>rd</sup> quarter price level of 1998 and the closing capital cost as on 31.3.2019 as allowed by order dated 8.11.2016 in Petition No. 268/GT/2014 is Rs.158000.00 lakh, which is much lower than the original approved cost of Rs.178099.00 lakh. The Petitioner has stated that even after allowing the additional capital expenditure of Rs.9330.00 lakh in 2019-24 on Ash dyke system, the allowed capital cost for tariff purpose would be within the approved capital cost.

16. The details of the additional expenditure capitalized towards Ash handling system and Ash dyke works, as furnished by the Petitioner, vide affidavit dated 4.11.2020 are as under:

(Rs.in lakh)		
Description of work	Amount capitalized	Year of capitalization
Ash Handling System		
U-7 Ash Handling system	344.21	2005-06
Main Plant Supply-AHP	34.94	2005-06
Total amount claimed towards Ash handling works	379.15	
Ash Dyke works		
Additional pedestals around Ash dyke (Garland area)	0.35	2007-08
Ash Pond: Construction of pump house, sump, discharge channel RCC culverts and service roads along downstream of N2 main dyke in ash	3.63	2007-08



Adjustment of Balance works in hydrogen building, foam pump house ash	(-)1.03	2007-08
Ash Silo area development works - Stage-III	31.51	2007-08
N2 starter dyke and first raising flood escape and downstream of N2 Flood Escape works	12.38	2007-08
N2 Pond starter dyke downstream seepage works	20.99	2007-08
Ash brick pavement and associated works	20.66	2007-08
<b>Sub-total</b>	<b>88.49</b>	
Raising of N-1 Dyke	678.05	2008-09
Ash brick pavement and associated works	3.43	2008-09
<b>Sub-total</b>	<b>681.48</b>	
Ash Pond raisings	10.94	2009-10
Ash Silo-2 Fabrication and Erection works	16.89	2009-10
<b>Sub-total</b>	<b>27.83</b>	
Ash Pond raisings	13.33	2010-11
Ash Pond raisings	547.08	2011-12
Raising of Ash Dyke in N1 pond (Total Service	685.63	2014-15
Material Cost in Raising of N1 pond	78.66	2014-15
<b>Total amount claimed towards Ash Dyke</b>	<b>2122.49</b>	

17. The matter has been examined. The claim of the Petitioner is for deferred work related to Ash pond or Ash handling system, as per approved scheme and is also within the original scope of work. Against an amount of Rs.2903.00 lakh, originally approved by the Board of the Petitioner Company, the Petitioner has already incurred additional capital expenditure Rs.2122.50 lakh up to 31.3.2019, for works related to Ash pond/ Ash handling System/ Ash Dyke raising. The Commission in its order dated 25.9.2021 in Petition No. 220/GT/2020, had allowed the actual additional capital expenditure of Rs.728.58 lakh (on cash basis) during the 2014-19 tariff period. Accordingly, from the details furnished by the Petitioner, the total additional capital expenditure allowed till 31.3.2019 is Rs.2122.49 lakh. Now, the Petitioner has claimed additional capital expenditure of Rs.9330.00 lakh in 2023-24 for Ash dyke buttressing/ raising and other related works on projection basis. Amount approved by the Board of Directors of the Petitioner company during investment approval for Ash Dyke related works and the expenditure up to 31.3.2019 on Ash handling system, is as follows:





(Rs. in lakh)		
		Amount
Original Estimated Cost (as approved by Petitioner's Board)	(A)	2903.00
Expenditure incurred as on 31.3.2019 (submitted vide affidavit dated 4.11.2020)	(B)	2122.50
Remaining capital expenditure from approved Investment Approval cost	(C=A-B)	780.50

18. The Petitioner, in Petition No. 220/GT/2020, had not claimed any additional capital expenditure towards fly ash transportation expenses, based on the MOEF&CC notification dated 25.1.2016. However, it is observed from CEA Report on "Fly Ash Generation at Coal/Lignite based Thermal Power Stations and It's Utilization in the Country" for 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21, that the generating station has been meeting target of utilizing 100% of its fly ash, as shown under:

(Rs.in lakh)			
Year	Fly ash generation (MT)	Fly ash Utilization (MT)	Utilization (%)
2016-17	4.71	4.38	93.10
2017-18	4.54	4.59	101.00
2018-19	4.27	4.71	100.10
2019-20	3.81	4.51	118.00
2020-21	3.85	4.28	111.00

19. Keeping in view the ash utilisation trend, as above, we find no merit in allowing further additional capital expenditure towards Ash dyke work. It is also observed that the Petitioner has projected additional capital expenditure of Rs.9330.00 lakh during the 2019-24 tariff period, which exceeds the approved Investment Approval cost of Rs.2903.00 lakh. In this background, we restrict the projected additional capital expenditure of Rs.9330.00 lakh claimed by the Petitioner and allow only Rs.780.50 lakh (see table under paragraph 17 above).



**Up-gradation of DCS Controller and HMI**

20. The Petitioner has claimed projected additional capital expenditure of Rs.815.00 lakh for Up-gradation of Max DNA DCS Controllers & HMI in 2020-21 under Regulation 25(2)(c) of the 2019 Tariff Regulations i.e. for replacement of the asset or equipment which is necessary on account of obsolescence of technology. In justification of the same, the Petitioner has submitted that the existing controller/instrumentation are being maintained through repairing and spares are not available. It has submitted that M/s BHEL has advised to upgrade the existing controller/instrumentation for continued support of spares/ services. The Respondent, KSEBL has submitted that the additional capital expenditure may be met from the O&M expenses allowed to the generating station. Similar submissions have been made by the Respondent, TANGEDCO. The Petitioner vide affidavit dated 4.11.2020 has submitted that the existing DCS and HMI system was awarded in 2003-04 with the original value of the asset as USD 4309970 and HMI up-gradation was done in 2012-13. It has stated that considering the dollar exchange rate at the time of investment approval of the generating station as US \$1 = Rs.42.60, the value of the asset works out as Rs.1836.05 lakh. The Petitioner has also submitted that out of complete Max DNA DCS/HMI system, only DPUs, racks, ribbon cable and bus terminators have to be replaced under this up-gradation. It has further submitted that the workstations along with necessary software, network switches, mini-UPS and printers will be further replaced in this up-gradation scheme. The Petitioner has submitted that separate values/ breakup of these items under this contract is not available.

21. The matter has been examined. The Petitioner has, under this up-gradation scheme, proposed to replace only few components of the existing system due to unavailability of spares. In view of the fact that M/s BHEL (OEM) has stopped the support of spares/ services to the existing system in place and has advised the



Petitioner to upgrade the existing system, we allow the projected additional capital expenditure of Rs.815.00 lakh. However, in the absence of the gross value of replaced assets i.e. DPUs, racks, ribbon cable and bus terminators which were put in service in the year of COD (2004-05), the “assumed deletion” of Rs.373.36 lakh has been worked out, by applying the discounting rate of 5% on the current value of these assets i.e. Rs.815.00 lakh in the year 2020-21. Accordingly, on net basis, the projected additional capital expenditure of Rs.441.64 lakh is allowed towards the up-gradation of DCS Controller and HMI.

#### **CLO<sub>2</sub> (Chlorine dioxide) system**

22. The Petitioner has claimed projected additional capital expenditure of Rs.1212.00 lakh in 2021-22 and Rs.135.00 lakh in 2022-23 for works relating to CLO<sub>2</sub> system under Regulations 26(1)(b) and 26(1)(d) of 2019 Tariff Regulations. The Petitioner has submitted that in the interest of public safety, the Chlorine dosing system is being replaced by Chlorine dioxide (CLO<sub>2</sub>) system, which is much safer and less hazardous than chlorine. The Petitioner has submitted that at present in the generating station, chlorine gas is being dozed directly at various stages of water treatment to maintain water quality and to inhibit organic growth in the water retaining structures/ equipment such as clarifiers, storage tanks, cooling towers, condenser tubes & piping etc. It has submitted that chlorine dosing is done from chlorine stored in cylinders/ tonners and chlorine gas is very hazardous and may prove fatal in case of leakage since handling and storage of the same involves risk to the life of public at large. The Petitioner has submitted that in the interest of public safety, the chlorine dosing system is now being replaced by chlorine dioxide (CLO<sub>2</sub>) system, which is much safer and less hazardous than chlorine. The Petitioner has submitted that at its Kudgi project, the Department of Factories, Boiler, Industrial Safety and Health, State Government of Karnataka has asked the Petitioner to replace the highly hazardous



gas chlorination system with ClO<sub>2</sub> system. It has further submitted that the Odisha State Pollution Control Board while issuing consent to establish, in case of the Darlipalli generating station of the Petitioner, had requested the Petitioner to explore the possibility of installing ClO<sub>2</sub> system instead of Chlorine gas system. Further, the Petitioner vide its affidavit dated 4.11.2020 has submitted that the existing chlorine dosing system was executed as a part of EPC package and, hence, the costing details are included in the Main Plant Turnkey package. It has submitted that some parts of existing chlorine dosing system, which can be re-used in the proposed chlorine dioxide system, are not part of the cost projected for additional capitalization. The Petitioner has further submitted that the equipment/ asset that will be de-capitalized, consists of chlorinators with booster pumps and that the present ClO<sub>2</sub> system will be used for whole Ramagundam generating station which consists of Stage-I, Stage-II & Stage-III with a total capacity of 2600 MW. The Petitioner has added that a total amount of Rs.118.50 lakh is to be de-capitalized for assets (i.e. chlorinator for PTP, chlorinator for CW System & CW-2 system for Stage-I and Stage-II).

23. The Respondent, KSEBL has submitted that Regulation 26(1)(b) of the 2019 Tariff Regulations provides for capitalization of additional expenditure under change in law or for compliance with the existing law and Regulation 26(1)(d) of the 2019 Tariff Regulations provides for additional capitalization of expenditure required for higher security and safety of the plant. It has submitted that the proposed additional capital expenditure does not qualify under these regulations and the Petitioner may meet such expenses from the normative O&M expenses allowed to the generating station. Similar submission has been made by the Respondent TANGEDCO.



24. We have examined the matter. The Petitioner has claimed additional capital expenditure of Rs.1212.00 lakh in 2021-22 and Rs.135.00 lakh in 2022-23 for works relating to ClO<sub>2</sub> system under Regulation 26(1)(b) of the 2019 Tariff Regulations. The Petitioner has submitted that for Kudgi project of the Petitioner, the Government of Karnataka had directed the Petitioner to replace the highly hazardous gas chlorination system with ClO<sub>2</sub> system. It is observed that the letter dated 23.9.2019 addressed by the Directorate of Factories, Industrial Safety & Health, State Government of Karnataka to GM, NTPC, pertains to site clearance of Kudgi Super Thermal Power station of the Petitioner. This letter, in no manner, can be termed as a change in law event or for compliance with any existing law in respect of this generating station (Ramgundam TPS) warranting the additional capitalization of the expenditure. As regards the claim of the Petitioner under Regulation 26(1)(d) of the 2019 Tariff Regulations, we find no specific direction or advice from any Governmental or statutory authorities as regards the requirement of this item i.e. chlorine dosing system to be replaced by Chlorine Dioxide (ClO<sub>2</sub>) system, for safety and security of the generating station. In view of this, the projected additional capital expenditure of Rs.1212.00 lakh in 2021-22 and Rs.135.00 lakh in 2022-23 for works relating to ClO<sub>2</sub> system is not allowed.

25. Based on the above discussion, the projected additional capital expenditure allowed for the 2019- 24 tariff period is as under:

<i>(Rs. in lakh)</i>					
Head of Work/ Equipment	2019-20	2020-21	2021-22	2022-23	2023-24
Ash Water Recycling System (AWRS)	1296.00	144.00	0.00	0.00	0.00
Hydrobins	0.00	0.00	0.00	2717.00	302.00
Ash dyke buttressing/ raising and other related works	0.00	0.00	0.00	0.00	780.50
Up-gradation of DCS Controller and HMI	0.00	815.00	0.00	0.00	0.00
De-capitalization for DCS Controller and HMI (assumed deletion)	0.00	(-) 373.36	0.00	0.00	0.00



CLO2 system	0.00	0.00	0.00	0.00	0.00
<b>Net additional capital expenditure allowed</b>	<b>1296.00</b>	<b>585.64</b>	<b>0.00</b>	<b>2717.00</b>	<b>1082.50</b>

26. Further, the entire additional capital expenditure as admitted above is eligible for return on equity at normal rate of ROE.

#### **Capital cost allowed for the 2019-24 tariff period**

27. Accordingly, the capital cost allowed for the purpose of tariff for the 2019-24 tariff period is as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	157587.03	158883.03	159468.67	159468.67	162185.67
Add: Admitted additional capital expenditure	1296.00	585.64	0.00	2717.00	1082.50
<b>Closing Capital Cost</b>	<b>158883.03</b>	<b>159468.67</b>	<b>159468.67</b>	<b>162185.67</b>	<b>163268.17</b>
Average Capital Cost	158235.03	159175.85	159468.67	160827.17	162726.92

#### **Debt-Equity ratio**

28. Regulation 18 of the 2019 Tariff Regulations 2019 provides as under:

*(1) For new projects the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost equity in excess of 30% shall be treated as normative loan:*

*Provided that:*

*(i) where equity actually deployed is less than 30% of the capital cost actual equity shall be considered for determination of tariff:*

*(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*

*(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.*

**Explanation** - The premium if any raised by the generating company or the transmission licensee as the case may be while issuing share capital and investment of internal resources created out of its free reserve for the funding of the project shall be reckoned as paid up capital for the purpose of computing return on equity only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

*(2) The generating company or the transmission licensee as the case may be shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system as the case may be.*

*(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019 debt:*





*equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:*

*Provided that in case of a generating station or a transmission system including communication system which has completed its useful life as on or after 1.4.2019 if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost equity in excess of 30% shall not be taken into account for tariff computation;*

*Provided further that in case of projects owned by Damodar Valley Corporation the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.*

*(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019 but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019 the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.*

*(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.*

29. The gross loan and equity amounting to Rs.110310.92 lakh and Rs.47276.11 lakh respectively, as on 31.3.2019, was considered in order dated 25.9.2021 in Petition No. 220/GT/2020. The proportionate equity as a percentage of the admitted capital cost as on 31.3.2019 is 30%. Accordingly, the gross loan and equity amounting to Rs.110310.92 lakh and Rs.47276.11 lakh respectively has been considered as the gross loan and equity as on 1.4.2019. The admitted additional capital expenditure has been considered in the ratio of 70:30. This is, however, subject to revision at the time of truing up of tariff.

### **Return on Equity**

30. Regulation 30 of the 2019 Tariff Regulations provides as under:

*(1) Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 18 of these regulations.*

*(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations transmission system including communication system and run of river hydro generating station and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:*

*Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;*



*Provided further that:*

(i) In case of a new project the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO) data telemetry communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;

(ii) in case of existing generating station as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

(iii) in case of a thermal generating station with effect from 1.4.2020:

a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;

b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute subject to ceiling of additional rate of return on equity of 1.00%:

*Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.*

31. Regulation 31 of the 2019 Tariff Regulations provides as under:

*"31. Tax on Return on Equity:*

(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission as the case may be) shall be excluded for the calculation of effective tax rate.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

*Rate of pre-tax return on equity = Base rate / (1-t)*

Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business as the case may be and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT) "t" shall be considered as MAT rate including surcharge and cess.

**Illustration-**

(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:

*Rate of return on equity =  $15.50/(1-0.2155) = 19.758\%$*

(ii) In case of a generating company or the transmission licensee paying normal corporate tax including surcharge and cess:



(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1000 crore;

(b) Estimated Advance Tax for the year on above is Rs 240 crore;

(c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;

(d) Rate of return on equity =  $15.50 / (1 - 0.24) = 20.395\%$ .

(3) The generating company or the transmission licensee as the case may be shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However penalty if any arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up shall be recovered or refunded to beneficiaries or the long term transmission customers as the case may be on year to year basis.

32. The Petitioner has claimed Return on Equity (ROE) at 18.782% considering the base rate of 15.50% and MAT rate as effective tax rate of 17.472% for the period from 1.4.2019 to 31.3.2024. The same has been considered for the purpose of tariff, subject to truing up. Accordingly, ROE has been worked out as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Notional Equity - Opening	47276.11	47664.91	47840.60	47840.60	48655.70
Addition of Equity due to additional capital expenditure	388.80	175.69	0.00	815.10	324.75
Normative Equity - Closing	47664.91	47840.60	47840.60	48655.70	48980.45
Average Normative Equity	47470.51	47752.76	47840.60	48248.15	48818.08
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for respective years	17.472%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre Tax)	18.782%	18.782%	18.782%	18.782%	18.782%
<b>Return on Equity (Pre Tax)- (annualized)</b>	<b>8915.91</b>	<b>8968.92</b>	<b>8985.42</b>	<b>9061.97</b>	<b>9169.01</b>

### Interest on loan

33. Regulation 32 of the 2019 Tariff Regulations provides as under:

#### *32. Interest on loan capital:*

(1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.



(3) *The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.*

(4) *Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

(5) *The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered;*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

(6) *The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

(7) *The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.*

34. The interest on loan has been worked out as mentioned below:

- i) The gross normative loan amounting to Rs.110310.92 lakh has been considered as on 1.4.2019;
- ii) Cumulative repayment amounting to Rs.109785.47 lakh as on 31.3.2019 as considered in order dated 25.9.2021 in Petition No. 220/GT/2020 has been considered as on 1.4.2019;
- iii) Accordingly, the net normative opening loan as on 1.4.2019 works out to Rs.525.45 lakh;
- iv) Addition to normative loan on account of additional capital expenditure approved above has been considered;
- v) Depreciation allowed has been considered as repayment of normative loan during the respective year of the 2019-24 tariff period;
- vi) The Petitioner has claimed interest on loan by applying the weighted average rate of interest of 8.8571% for 2019-20, 8.9829% for 2020-21, 9.0640% for 2021-22, 9.2762% for 2022-23 and 9.6004% for 2023-24. The weighted average rate of interest for the period 2019-23, as claimed by the Petitioner has been considered. However, for the year 2023-24, the weighted average rate of interest of 9.5982% has been considered for the purpose of tariff.

35. Necessary calculations for interest on loan is as shown below:



	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross opening loan	110310.92	111218.12	111628.07	111628.07	113529.97
Cumulative repayment of loan up to previous year / period	109785.47	111218.12	111628.07	111628.07	113529.97
Net Loan Opening	525.45	0.00	0.00	0.00	0.00
Addition due to additional capital expenditure	907.20	409.95	0.00	1901.90	757.75
Repayment of loan during the year	1432.65	671.30	0.00	1901.90	757.75
Less: Repayment adjustment on account of de-capitalization	0.00	261.35	0.00	0.00	0.00
Net Repayment of loan during the year	1432.65	409.95	0.00	1901.90	757.75
Net Loan Closing	0.00	0.00	0.00	0.00	0.00
Average Loan	262.73	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan	8.8571%	8.9829%	9.0640%	9.2762%	9.5982%
<b>Interest on Loan</b>	<b>23.27</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

### Depreciation

36. Regulation 33 of the 2019 Tariff Regulations provides as under:

“33. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in case of hydro generating stations the salvage value shall be as provided in the agreement if any signed by the developers with the State Government for development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:





*Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be shall not be allowed to be recovered at a later stage during the useful life or the extended life.*

*(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

*(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-I to these regulations for the assets of the generating station and transmission system:*

*Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*

*(6) In case of the existing projects the balance depreciable value as on 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 from the gross depreciable value of the assets.*

*(7) The generating company or the transmission licensee as the case may be shall submit the details of proposed capital expenditure five years before the completion of useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.*

*(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.*

37. Accordingly, the cumulative depreciation amounting to Rs.109931.65 lakh as on 31.03.2019 as considered in order dated 25.9.2021 in Petition No. 220/GT/2020 has been retained for the purpose of tariff. Further, the value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing depreciation) for the year 2019-20 works out to Rs.32479.88 lakh. Since as on 1.4.2019 the used life of the generating station (i.e. 14.02 years) is more than 12 years from the COD (25.03.2005), the depreciation shall be calculated by spreading of the remaining depreciable value over remaining useful life. The weighted average rate of depreciation (WAROD) of 1.869% for 2019-20, 1.911% for 2020-21, 1.944% for 2021-22, 2.023% for 2022-23 and 2.150% for 2023-24 has been considered for the purpose of tariff. The calculations for WAROD has been enclosed as Annexure-I to this order Accordingly, depreciation has been calculated and allowed as under:





(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost (A)	157587.03	158883.03	159468.67	159468.67	162185.67
Add: Net additional capital expenditure (Projected) (B)	1296.00	585.64	0.00	2717.00	1082.50
Closing Capital Cost (C) [C = (A+B)]	158883.03	159468.67	159468.67	162185.67	163268.17
Average Capital Cost (D) [D = (A+C)/2]	158235.03	159175.85	159468.67	160827.17	162726.92
Value of freehold land included above (E)	0.00	0.00	0.00	0.00	0.00
Aggregated depreciable value @ 90% (F) [F = (D-E) x 90%]	142411.53	143258.27	143521.81	144744.46	146454.23
Remaining aggregated depreciable value at the beginning of the year (G) [G = F- Cumulative Depreciation (Shown at N) at the end of previous year]	32479.88	30369.42	27855.55	25977.39	24433.22
Number of completed years at the beginning of the year (H)	14.02	15.02	16.02	17.02	18.02
Balance useful life at the beginning of the year (I)	10.98	9.98	8.98	7.98	6.98
Weighted Average Rate of Depreciation (WAROD) (J)	1.869%	1.911%	1.944%	2.023%	2.150%
Combined depreciation during the year (K)	2957.20	3042.01	3100.80	3253.95	3498.79
Cumulative depreciation at the end of the year (before adjustment for de-capitalization) (L) [L = K + Cumulative Depreciation (shown at N) at the end of previous year]	112888.85	115930.86	118767.06	122021.02	125519.81
Less: Depreciation adjustment on account of de-capitalization (M)	0.00	264.60	0.00	0.00	0.00
<b>Cumulative depreciation at the end of the year (N) [N = (L-M)]*</b>	<b>112888.85</b>	<b>115666.26</b>	<b>118767.06</b>	<b>122021.02</b>	<b>125519.81</b>

\*Note: The Cumulative Depreciation at the end of the year 2018-19 is Rs.109931.65 lakh.

### **Operation & Maintenance Expenses**

38. Regulation 35(1)(1) of the 2019 Tariff Regulations provides the following O&M expense norms for coal based generating stations of 500 MW capacity.

(Rs. in lakh/MW)

2019-20	2020-21	2021-22	2022-23	2023-24
22.51	23.30	24.12	24.97	25.84



39. The Petitioner has claimed following O&M expenses in Form 3A as under:

	(Rs. in lakh)					
	2019-20	2020-21	2021-22	2022-23	2023-24	Total
O&M Expenses claimed under Regulation 35(1)(1)	11255.00	11650.00	12060.00	12485.00	12920.00	60370
O&M Expenses claimed under Regulation 35(6)						
Water Charges	443.72	488.09	488.09	536.90	536.90	2493.70
Security Expenses	707.12	832.88	824.62	891.54	961.73	4217.89
<b>Total O&amp;M Expenses</b>	<b>12405.84</b>	<b>12970.98</b>	<b>13372.71</b>	<b>13913.44</b>	<b>14418.63</b>	<b>67081.59</b>

40. The Petitioner's claim for normative O&M expenses is in accordance with Regulation 35(1)(1) of the 2019 Tariff Regulations and the same is, therefore, allowed. The Petitioner has also claimed Water Charges and Security Expenses, which are discussed below.

### Water Charges

41. The first proviso to Regulation 35(6) of the 2019 Tariff Regulations provides for the claim for Water charges as under:

*"35(6) The Water Charges, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant and type of cooling water system, subject to prudence check. The details regarding the same shall be furnished along with the petition;*

xxxxxxx."

42. The actual water charges claimed by the Petitioner in Petition No. 220/GT/2020 for the 2014-19 tariff period and allowed by order dated 25.9.2021 is as under:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Water Charges claimed in Petition No.220/GT/2020 for the 2014-19 tariff period	351.01	371.33	538.75	378.13	443.72
Water Charges allowed in order dated 25.9.2021 for the 2014-19 tariff period	343.00	355.44	521.76	359.96	428.60

43. The Petitioner has claimed water charges for the 2019-24 tariff period as under:



(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
443.72	488.09	488.09	536.90	536.90

44. The Respondent KSEBL has submitted that the details of the actual water requirement of the generating station along with the past water bills have not been furnished by the Petitioner.

45. In terms of Regulations 35(1)(6) of the 2019 Tariff Regulations, water charges shall be allowed separately, based on the water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details in respect of water charges for the 2019-24 tariff period as furnished by the Petitioner are as under:

Description	Remarks
Type of Plant	Coal
Type of cooling water system	Closed circuit cooling with induced draft cooling tower
Consumption of water	0.477 TMC/year
Rate of water charges	Rs.7.16 Cr/TMC = Rs.716.00 lakh/TMC
Total water charges in 2019-20	Rs.443.72 lakh

46. We have examined the matter. It is observed that the Petitioner has claimed water charges of Rs.443.72 lakh for the year 2019-20, considering the actual water charges for the year 2018-19 as claimed in Petition No. 220/GT/2020. Further, for the years 2020-21 and 2021-22, the Petitioner has claimed Rs.488.09 lakh as water charges and for the years 2022-23 and 2023-24, it has claimed Rs.536.90 lakh as water charges. As regards the rate of water charges, the Petitioner has submitted that it has made payments towards power charges for lifting water as per the State Government notification. The Petitioner vide affidavit dated 4.11.2020 has submitted that the Irrigation Department, Government of Telangana is supplying raw water to the Petitioner from Sripada Yellampalli Project (SYP). It has stated that the water pumping system for the Petitioner was started in August 2012 and since then, water is being supplied to NTPC Reservoir as and when water is available in SYP project as per requirement and accordingly power charges are being paid. The Petitioner



has submitted that prior to August 2012 water supply was from SRSP (Sri Ramsagar Project) which is under natural drift irrigation scheme, for which no power charges were paid.

47. In consideration of the submissions of the Petitioner, we consider the actual water charges of Rs.428.60 lakh allowed for the year 2018-19 in order dated 25.9.2021 in Petition No. 220/GT/2020 and allow the same for the 2019-24 tariff period, with 10% escalation for every two financial years, in line with the State Government of Telangana notification GO. MS. 115 dated 27.8.2015, as furnished by the Petitioner. Accordingly, the water charges allowed for the 2019-24 tariff period are as under:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
428.60	428.60	471.46	471.46	518.61

48. The Petitioner is directed to furnish the details of the actual water consumption (in cubic meters), the rate (Rs./cubic meter) and the power charges separately at the time of truing up. The Petitioner shall also furnish the reasons for the variation in the claim, if any, duly supported by documents (i.e. agreement/ direction/ order etc. of the State Government/ statutory authority) with regard to the rate of water charges and power charges separately. The water charges allowed are subject to the truing up, as per actual water charges paid, after prudence check.

### **Security Expenses**

49. The second proviso to Regulation 35(6) of the 2019 Tariff Regulations provides for the claim for Security expenses as under:

*“35(6) The Water Charges, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:*

*xxxx;*

*Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses;*

*Xxxx”*



50. The Petitioner has claimed the following Security expenses:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
707.12	832.88	824.62	891.54	961.73

51. The Respondent KSEBL has submitted that the details of security expenses have not been furnished by the Petitioner. The Petitioner has submitted that the total Security expenses, as per audited financial statements of 2018-19 was Rs.3657.00 lakh, for the total generating station of 2600 MW capacity. On apportionment of the same to this generating station, the security expenses work out to Rs.703.27 lakh.

52. The Petitioner has not furnished any justification and assessment with regard to the variation in the claim for security expenses during the 2019-24 tariff period. Considering the fact that the security expenses for thermal generating stations is required to be allowed separately, after prudence check, and that the Petitioner is required to submit the assessment of the security requirement and estimated expenses as per regulations, we, based on the actual security expenses incurred for 2018-19, allow the security expenses claimed for the 2019-24 tariff period, with 5% escalation per year. However, the Petitioner shall, at the time of truing up, furnish the assessment and actual details under each head towards security expenses. Accordingly, the Security expenses allowed are as under:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
703.27	738.43	775.35	814.12	854.83

### **Capital Spares**

53. The Petitioner has not claimed any capital spares consumed during the 2019-24 tariff period, but has submitted that the same shall be claimed at the time of truing-up of tariff in terms of the last proviso to Regulation 35(6) of the 2019 Tariff Regulations, based on the actual consumption of spares. Accordingly, the same has not been considered in this order. The claim of the Petitioner, if any, at the time of



truings-up of tariff, shall be considered on merits, after prudence check, in accordance with law.

54. Accordingly, the total O&M expenses, including water charges and Security expenses, as claimed by the Petitioner and allowed for the purpose of tariff are as under:

*(Rs. in lakh)*

	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses claimed (a)	11255.00	11650.00	12060.00	12485.00	12920.00
<b>O&amp;M Expenses allowed (b)</b>	<b>11255.00</b>	<b>11650.00</b>	<b>12060.00</b>	<b>12485.00</b>	<b>12920.00</b>
Water charges claimed (c)	443.72	488.09	488.09	536.90	536.90
<b>Water charges allowed (d)</b>	<b>428.60</b>	<b>428.60</b>	<b>471.46</b>	<b>471.46</b>	<b>518.60</b>
Security Expenses claimed (e)	707.12	832.88	824.62	891.54	961.73
<b>Security Expenses allowed (f)</b>	<b>703.27</b>	<b>738.43</b>	<b>775.35</b>	<b>814.12</b>	<b>854.83</b>
Total O&M expenses claimed (a + c + e)	12405.84	12970.98	13372.71	13913.44	14418.63
<b>Total O&amp;M expenses allowed (b + d + f)</b>	<b>12386.87</b>	<b>12817.03</b>	<b>13306.81</b>	<b>13770.58</b>	<b>14293.43</b>

#### **Additional Expenditure for Emission Control System**

55. The Petitioner has submitted that it is in the process of installing Emission Control Systems (ECS) in compliance to the revised Emission Standards as notified by MOEF&CC vide notification dated 7.12.2015, as amended. It has submitted that the completion of these schemes in compliance to the revised emission norms will affect the Auxiliary Power Consumption, Heat Rate, and O&M expenses etc. In addition, the Petitioner has submitted that the availability of the unit/ station would also be affected due to shutdown of the units for installation of ECS. The Petitioner has also submitted that it would be filing the details of the same in a separate petition in terms of Regulation 29 of the 2019 Tariff Regulations. It is however noticed that the Petitioner had filed Petition No. 612/MP/2020, for approval of additional expenditure on installation of various Emission Control Systems at this generating station, in compliance of MOEF&CC notification dated 7.12.2015 and the Commission by a common order dated 30.9.2021 had disposed of the said petition, with certain observations. The claim of the Petitioner for additional expenditure on





emission control system shall therefore be guided by the order dated 30.9.2021 in Petition No. 612/MP/2020.

**Additional Expenditure towards Fly Ash Transportation**

56. The Petitioner has submitted that MOEF&CC vide notification dated 25.1.2016 in terms of the provisions of Environment (Protection) Act, 1986, has prescribed the transportation cost of fly ash generated at power stations. In this regard, the Petitioner had filed Petition No.172/MP/2016 before this Commission, seeking reimbursement of the additional expenditure incurred for Fly Ash Transportation directly from the beneficiaries as the same was in the nature of statutory expenses. The Petitioner has submitted that it has claimed additional expenditure towards 'fly ash transportation charges' for the years 2017-18 and 2018-19, in various petitions for truing up of tariff of generating stations for the 2014-19 tariff period. It has further submitted vide affidavit dated 15.5.2021, that the expenditure incurred towards fly ash transportation are recurring in nature and that the Petitioner has been incurring the same in some of its generating stations during the 2019-24 tariff period also. The Petitioner has submitted that in case these charges are permitted to be recovered at the end of the 2019-24 tariff period, there will be additional liability on the beneficiaries on account of interest payment for the period till the time the petitions for truing-up of tariff for the 2019-24 tariff period is decided. Accordingly, the Petitioner has submitted that to avoid the interest payment liability of the beneficiaries, it may be allowed to recover/ pass on the fly ash transportation charges, after adjusting the revenue earned from the sale of fly ash at the end of each quarter of the financial year, subject to truing-up at the end of the 2019-24 tariff period. It has submitted that billing & recovery of Ash transportation charges provisionally, on a monthly basis, may be allowed, based on self-certification and the recovery shall be subject to truing up at the end of financial year, based on auditor's



certificate. The Petitioner has added that the issue of monthly recovery and the procedure for recovery of costs is no more res-integra, as this Commission in its order dated 22.3.2021, in Petition No. 405/MP/2019 (*GKEL & Anr. v. DHBVNL & Ors*) had devised a mechanism for the generator therein, to recover future expenditure incurred on transportation of fly ash, wherein the Commission has directed recovery of expenditure on transportation of fly ash on a monthly basis, with reconciliation on an annual basis. The Petitioner has prayed that a similar procedure may also be made applicable in the case of the Petitioner.

57. The Respondent KSEBL has submitted that the Commission vide its order dated 5.11.2018 in Petition No.172/MP/2016 had granted liberty to the Petitioner to approach the Commission at the time of revision of tariff, based on all details/information, duly certified by the auditor. It has submitted that since the matter is already decided, the request of the Petitioner to recover the additional expenditure for fly ash transportation at the end of each quarter of the financial year may be rejected. The Respondent, TANGEDCO has submitted that for considering the fly ash transportation expenses, the Petitioner has to submit the details of bidding process, actual additional expenditure incurred on fly ash transportation after 25.1.2016, revenue generated etc. Accordingly, the Respondent has submitted that the claim of the Petitioner for fly ash transportation charges may be rejected.

58. We have examined the matter. The Commission vide its order dated 5.11.2018 in Petition No.172/MP/2016 had decided that the MOEF&CC notification dated 25.1.2016 amending the earlier notification dated 14.9.1999 issued under Environment ( Protection ) Rules, 1986 as 'change in law' and had disposed of the said petition vide order dated 5.11.2018 as under:

*"31. Accordingly, we in exercise of the regulatory power hold that the actual additional expenditure incurred by the Petitioner towards transportation of ash in terms of the MOEF&CCCC Notification is admissible under "Change in Law" as*



*additional O&M expenses. However, the admissibility of the claims is subject to prudence check of the following conditions on case to case basis for each station:*

*a) Award of fly ash transportation contract through a transparent competitive bidding procedure. Alternatively, the schedule rates of the respective State Governments, as applicable for transportation of fly ash.*

*b) Details of the actual additional expenditure incurred on Ash transportation after 25.1.2016, duly certified by auditors.*

*c) Details of the Revenue generated from sale of fly ash/ fly ash products and the expenditure incurred towards Ash utilisation up to 25.1.2016 and from 25.1.2016 to till date, separately.*

*d) Revenue generated from fly Ash sales maintained in a separate account as per the MOEF&CC notification.*

*32. The Petitioner is granted liberty to approach the Commission at the time of revision of tariff of the generating stations based on true-up exercise for the period 2014-19 in terms of Regulation 8 of the 2014 Tariff Regulations along with all details / information, duly certified by auditor.”*

59. We however note that the Petitioner has filed Petition No. 205/MP/2021 seeking reimbursement of fly ash transportation charges in respect of its generating stations. The Petitioner has raised similar issues with regard to fly ash transportation in that petition arguing higher liability of the Respondents therein on account of interest burden and cash flow issues that may be faced by the Petitioner. Some of the Respondents therein (including TANGEDCO) have raised issues on ‘maintainability’ of Petition No. 205/MP/2021, and the Commission, after hearing the parties on 12.10.2021, has issued notices for hearing on ‘admissibility’ of that petition. Therefore, we are not deciding this issue in this Petition. The reimbursement of charges towards transportation of fly ash shall, therefore, be governed by the decision of the Commission in Petition No. 205/MP/2021.

### **Operational Norms**

60. The Petitioner in Form-3, has considered the following norms of operation for the purpose of tariff:

Normative Annual Plant Availability Factor (NAPAF) (%)	85
Gross Station Heat Rate (kcal/kwh)	2390
Auxiliary Power Consumption (%)	6.25
Specific Oil Consumption (ml/kwh)	0.50



**Normative Annual Plant Availability Factor**

61. Regulation 49 of the 2019 Tariff Regulations provides as under:

*“(A) Normative Annual Plant Availability Factor (NAPAF)*

*(a) For all thermal generating stations, except those covered under clauses (b), (c), (d), & (e) - 85%”*

62. The Petitioner has considered the Normative Annual Plant Availability Factor (NAPAF) of 85% during the 2019-24 tariff period in terms of Regulation 49(A)(a) of the 2019 Tariff Regulations. Hence, the same is allowed.

**Gross Station Heat Rate**

63. Regulation 49(C)(a)(1) of 2019 Tariff Regulations provides as under:

*“(C) Gross Station Heat Rate:*

*(a) Existing Thermal Generating Stations*

*(i) For existing Coal-based Thermal Generating Stations, other than those covered under clauses (ii) and (iii) below:*

<b>200/210/250 MW Sets</b>	<b>500 MW Sets (Sub-critical)</b>
2430kCal/kWh	2390kCal/kWh

64. The Gross Station Heat Rate of 2390 kCal/kWh, as claimed by the Petitioner, for existing coal based thermal generating stations of 500 MW, is as per provisions of Regulation 49(C)(a)(1) of 2019 Tariff Regulations and, hence, the same is allowed.

**Auxiliary Power Consumption**

65. Regulation 49(E)(a)(ii) of the 2019 Tariff Regulations provides for auxiliary power consumption as under:

*“(E) Auxiliary Energy Consumption*

*(a) Coal-based generating stations except at (b) below:*

	<i>With Natural Draft cooling tower or without cooling tower</i>
<i>(i) 200 MW series</i>	8.5%
<i>(ii) 300 MW and above</i>	
<i>Steam driven boiler feed pumps</i>	5.75%
<i>Electrically driven boiler feed pumps</i>	8.0%

*Provided that for thermal generating stations with induced draft cooling towers and where tube type coal mill is used, the norms shall be further increased by 0.5% and 0.8% respectively”*



66. As the generating station with a capacity of 500 MW, falls under the category of 300 MW & above, having Steam-driven Boiler Feed Pumps & Induced Draft Cooling Tower, the generating station qualifies for a normative Auxiliary Power Consumption of 6.25% (5.75% for Units having Steam-driven BFP & additional 0.50% for having Induced Draft Cooling Tower). Accordingly, the normative Auxiliary Power Consumption of 6.25% as considered by the Petitioner is allowed.

#### **Specific Oil Consumption**

67. Regulation 49(D)(a) of 2019 Tariff Regulations, provides for a Secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating stations. Hence, the Secondary fuel oil Consumption as considered by the Petitioner is allowed.

68. Based on the above, the operational norms for the generating station as considered by the Petitioner as in paragraph 60 above is considered for the purpose of tariff.

#### **Interest on Working capital**

69. Sub-section (a) of clause (1) of Regulation 34 of the 2019 Tariff Regulations provides as under:

*“34 Interest on Working Capital:*

*(1) the working capital shall cover:*

*(a) For Coal-based/lignite-fired thermal generating stations*

*(i) Cost of coal or lignite and limestone towards stock, if applicable, for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(ii) Advance payment for 30 days towards cost of coal or lignite and limestone for generation corresponding to the normative annual plant availability factor;*

*(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;*

*(iv) Maintenance spares @ 20% of operation and maintenance expenses including water charges and security expenses;*



(v) *Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on the normative annual plant availability factor; and*

(vi) *Operation and maintenance expenses, including water charges and security expenses, for one month.*

Xxxxxx

*(2) The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this Regulation shall be based on the landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) by the generating station and gross calorific value of the fuel as per actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined:*

*Provided that in case of new generating station the cost of fuel for the first financial year shall be considered based on landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) and gross calorific value of the fuel as per actual weighted average for three months as used for infirm power preceding date of commercial operation for which tariff is to be determined.*

*(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof as the case may be is declared under commercial operation whichever is later.*

*Provided that in case of truing-up the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.*

*(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency.*

### **Fuel Components and Energy Charges in working capital**

70. The Petitioner has claimed the cost for fuel component in working capital and Energy Charge Rate (ECR) based on:

- a) Operational norms as per the 2019 Tariff Regulations;
- b) Price and 'as received' GCV of coal {after reducing the same by 85 kcal/kWh in terms of Regulation 43(2)(b) of the 2019 Tariff Regulations} procured for the three months of October 2018, November 2018, and December 2018; and
- c) Price and GCV of secondary fuel oil for the three months of October 2018, November 2018 and December 2018.

71. Accordingly, the Petitioner has claimed ECR of 258.231 paise/kWh and fuel component in working capital as under:





	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Working capital as coal cost for 50 days	12249.86	12249.86	12249.86	12249.86	12249.86
Cost of Secondary fuel oil 2 months	118.08	117.76	117.76	117.76	118.08

72. It is observed that the Petitioner, in Form-15, had not initially furnished the opening stock of coal and coal received during the months of October 2018, November 2018, and December 2018 separately. Therefore, the Commission vide ROP of the hearing dated 13.8.2020 had directed the Petitioner to submit the details of the coal quantity received at the generating station (excluding the coal stock as on 30.9.2018) during the months of October 2018, November 2018 and December 2018 in Form-15. However, the Petitioner vide affidavit dated 5.11.2020, has furnished only the details of coal quantity received for the months of October 2018, November 2018 and December 2018.

73. On perusal of the data furnished by the Petitioner, it is observed that the Petitioner has not included the previous stock of coal for the month October 2018. However, the Petitioner has considered the opening stock of coal for the months of November 2018 and December 2018 (closing stock of the coal for the previous months). In terms of the regulations, the computation of ECR and associated fuel components in working capital, is based on the landed price and GCV of fuel, which means that the 'fuel received' during these three months, is only to be considered, without the opening stock. Accordingly, after excluding the opening stock and its value, we have computed the weighted average landed cost and weighted average GCV of coal, for calculating the fuel component in working capital, for the months of October 2018, November 2018 and December 2018. It is further observed that the Petitioner has claimed the cost of coal towards stock of 20 days (one of the components of working capital) which is applicable to non-pit head stations, whereas,



this generating station is a pit head station, for which cost of coal for 10 days stock only is allowable as per Regulation 34(1)(a)(i) of the 2019 Tariff Regulations. Accordingly, based on the revised GCV of coal (further reduced by a margin of 85 kCal/kg for storage losses) and the revised price of landed coal and the cost and GCV of oil as furnished, the fuel components in working capital are allowed as under:

	(Rs. in lakh)	
	2019-20 and 2023-24	2020-21 to 2022-23
Cost of 50 days coal (claimed) (a)	12249.86	12249.86
Cost of Coal for 10 days towards stock (allowed) (b)	2451.74	2451.74
Advance payment for 30 days towards cost of coal (allowed) (c)	7355.21	7355.21
Cost of coal for 40 days (allowed) (b)+(c)	9806.94	9806.94
Cost of Secondary fuel oil 2 months (claimed)	118.08	117.76
Cost of Secondary fuel oil 2 months (allowed)	118.08	117.76

#### Energy Charge Rate (ECR)

74. The Petitioner has claimed ECR (ex-bus) for Rs.2.582/kWh based on the weighted average price, GCV of coal & oil procured and burnt for the preceding three months of October 2018, November 2018 and December 2018. ECR as worked out based on operational norms specified under the 2019 Tariff Regulations and on “as received” GCV of coal for the preceding three months i.e. October 2018 to December 2018, as given below has been considered for allowing 45 days energy charge in working capital:

Description	Unit	2019-20 and 2023-24	2020-21 to 2022-23
Capacity	MW	500	500
Gross Station Heat Rate	Kcal/kWh	2390	2390
Aux. Energy Consumption	%	6.25	6.25
Weighted average GCV of oil	Kcal/lit	9870	9870
Weighted average GCV of coal	Kcal/kg	3624.33 (3709.33-85)	3624.33 (3709.33-85)
Weighted average price of oil	Rs./KL	37955.05	37955.05
Weighted average price of Coal	Rs./MT	3652.59	3652.59
<b>Rate of energy charge ex-bus</b>	<b>Rs./kWh</b>	<b>2.584</b>	<b>2.584</b>

75. The Energy Charges for 45 days is computed as under:



(Rs. in lakh)	
2019-20 and 2023-24	2020-21 to 2022-23
11119.274	11119.275

76. Therefore, the fuel component and energy charges allowed in working capital are as under:

(Rs. in lakh)		
	2019-20 and 2023-24	2020-21 to 2022-23
Cost of Coal for 40 days	9806.94	9806.94
Cost of Secondary fuel oil for 2 months	118.08	117.76
Energy charges for 45 days	11119.28	11119.28

77. As per Regulation 34(2) of the 2019 Tariff Regulations, the cost of coal shall be based on landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of the 2019 Tariff Regulations) by the generating station and GCV of fuel as per the actual weighted average for the third quarter of preceding financial year. Hence, the Petitioner shall, at the time of truing up, furnish the details of quantity of coal as per Regulation 34(2) of 2019 Tariff Regulations. The Petitioner shall not alter or modify any of the column and lines provided in the forms/ annexures and shall submit the details strictly in accordance with the said forms/ annexures of the 2019 Tariff Regulations.

78. The Petitioner, on a month to month basis, shall compute and claim the energy charges from the beneficiaries based on the formulae as per Regulation 43 of the 2019 Tariff Regulations.

#### **Working Capital for O&M expenses**

79. The O&M expenses for 1 month claimed by the Petitioner for the purpose of working capital, including water charges and security expenses are as follows:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
1033.82	1080.91	1114.39	1159.45	1201.55



80. Regulation 34(a)(vi) of 2019 Tariff Regulations provides for O&M expenses for one month for coal-based generating stations, including water charges and security expenses. Hence, the Petitioner is allowed the following O&M expenses for 1 month based on the O&M expenses, including the water charges and security expenses allowed as above:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
1032.24	1068.09	1108.90	1147.55	1191.12

#### **Working Capital for Maintenance spares**

81. Regulation 34(a)(iv) of the 2019 Tariff Regulations provides for maintenance spares @ 20% of the operation & maintenance expenses, including water charges and security expenses. Accordingly, maintenance spares is allowed as under:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
2477.37	2563.41	2661.36	2754.12	2858.69

82. The difference in the claim for 'maintenance spares' and 'O&M expenses for one month' against those allowed is on account of the fact that the 'water charges' and 'security expenses' allowed in this order varies with those claimed by the Petitioner for the reasons mentioned therein.

#### **Working Capital for Receivables**

83. Receivables equivalent to 45 days of capacity charge and energy charges has been worked out as under:

(Rs. in lakh)					
	2019-20	2020-21	2021-22	2022-23	2023-24
Variable Charges - for 45 days	11119.28	11119.28	11119.28	11119.28	11119.28
Fixed Charges - for 45 days	3399.80	3451.09	3497.14	3585.49	3686.46
<b>Total</b>	<b>14519.07</b>	<b>14570.37</b>	<b>14616.42</b>	<b>14704.76</b>	<b>14805.73</b>

84. In line with Regulation 34(4) of the 2019 Tariff Regulations, the rate of interest on working capital has been considered as 12.05% (i.e. 1 year SBI MCLR of 8.55% (as on 01.04.2019) + 350 bps) for the year 2019-20 11.25% (i.e. 1 year SBI MCLR of



7.75% (as on 01.04.2020) + 350 bps) for the year 2020-21 and 10.50% (i.e. 1 year SBI MCLR of 7.00% (as on 01.04.2021) + 350 bps) for the period 2021-24. Accordingly, the interest on working capital has been considered as 12.05% for 2019-20 11.25% for 2020-21 and 10.50% for the period 2021-22 to 2023-24. Accordingly, interest on working capital is worked out and allowed as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for Cost of Coal towards stock – 10 days of generation	2451.74	2451.74	2451.74	2451.74	2451.74
Working Capital for advance payment towards Cost of Coal – 30 days of generation	7355.21	7355.21	7355.21	7355.21	7355.21
Working Capital for Cost of Secondary Fuel Oil – 2 months of generation	118.08	117.76	117.76	117.76	118.08
Working Capital for Maintenance Spares -- 20% of O&M expenses	2477.37	2563.41	2661.36	2754.12	2858.69
Working Capital for Receivables – 45 days of capacity charge and energy charges	14519.07	14570.37	14616.42	14704.76	14805.73
Working Capital for O&M expenses – 1 month of O&M expenses	1032.24	1068.09	1108.90	1147.55	1191.12
<b>Total Working Capital</b>	<b>27953.70</b>	<b>28126.56</b>	<b>28311.38</b>	<b>28531.12</b>	<b>28780.56</b>
Rate of Interest	12.05%	11.25%	10.50%	10.50%	10.50%
<b>Interest on Working Capital</b>	<b>3368.42</b>	<b>3164.24</b>	<b>2972.69</b>	<b>2995.77</b>	<b>3021.96</b>

### Annual Fixed Charges

85. Accordingly, the annual fixed charges approved for the generating station for the 2019-24 tariff period is summarised as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	2957.20	3042.01	3100.80	3253.95	3498.79
Interest on Loan	23.27	0.00	0.00	0.00	0.00
Return on Equity	8915.91	8968.92	8985.42	9061.97	9169.01
Interest on Working Capital	3368.42	3164.24	2972.69	2995.77	3021.96
O&M Expenses	12386.87	12817.03	13306.81	13770.58	14293.43
<b>Total</b>	<b>27651.67</b>	<b>27992.20</b>	<b>28365.73</b>	<b>29082.27</b>	<b>29983.20</b>

**Note:** All figures are on annualised basis. All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column.



86. The annual fixed charges approved as above, is subject to truing up in terms of Regulation 13 of the 2019 Tariff Regulations.

**Application Fee and Publication expenses**

87. The Petitioner has sought reimbursement of fee paid by it for filing the petition for the 2019-24 tariff period and for publication expenses. The Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries, on pro-rata basis, in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

88. Annexure-I enclosed shall form part of this order.

89. Petition No. 444/GT/2020 is disposed of in terms of the above.

**Sd/-**  
**(Arun Goyal)**  
**Member**

**Sd/-**  
**(I.S Jha)**  
**Member**

**Sd/-**  
**(P.K. Pujari)**  
**Chairperson**





## Annexure-I

**Weighted Average Rate of Depreciation for the 2019-24 tarff period**

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost (A)	157587.03	158883.03	159468.67	159468.67	162185.67
Net Addition during the year/ period (B)	1296.00	585.64	0.00	2717.00	1082.50
Closing Capital Cost (C) [C = (A+B)]	158883.03	159468.67	159468.67	162185.67	163268.17
Average Capital Cost (D) [D = (A+C)/2]	158235.03	159175.85	159468.67	160827.17	162726.92
Remaining Depreciable Value (E)	32479.88	30369.42	27855.55	25977.39	24433.22
Balance Useful life of the plant (in years) (F)	10.98	9.98	8.98	7.98	6.98
Depreciation for the period (G) [G = (E/F)]	2957.20	3042.01	3100.80	3253.95	3498.79
<b>Effective Weightage Average Rate of Depreciation (H)</b> [H = (G/D)]	1.869%	1.911%	1.944%	2.023%	2.150%



**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 270/GT/2014**

**Coram:**

**Shri Gireesh. B. Pradhan, Chairperson**

**Shri A.K.Singhal, Member**

**Shri A.S. Bakshi, Member**

**Dr. M.K. Iyer, Member**

**Date of Order: 27.06.2016**

**IN THE MATTER OF**

Approval of tariff of Simhadri Super Thermal Power Station Stage-I (1000MW) for the period from 1.4.2014 to 31.3.2019

**AND**

**IN THE MATTER OF**

NTPC Ltd  
NTPC Bhawan,  
Core-7, SCOPE Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi-110003

**...Petitioner**

**Vs**

1. Andhra Pradesh Eastern Power Distribution Company Ltd  
Corporate Office P&T Colony, Seethammadhara,  
Visakhapatnam-530013-(AP)

2. Andhra Pradesh Southern Power Distribution Company Ltd,  
Corporate Office, Back side Srinivasa Kalyana Mandapam  
Tiruchhanur Road, Kesavayana Gunta,  
Tirupati-517503-(AP)

3. Telangana State Southern Power Distribution Company Ltd  
Mint Compound, Corporate Office,  
Hyderabad-500 063

4. Telangana State Northern Power Distribution Company Ltd  
H.No 2-5-31/2, Vidyut Bhawan  
Nakkalagutta, Hanamkonda, Warangal-506001

**...Respondents**

**Parties present:**

Shri M.G. Ramachandran, Advocate, NTPC  
Ms. Poorva Saigal, Advocate, NTPC  
Shri Shubham Arya, Advocate, NTPC  
Shri Ajay Dua, NTPC  
Shri Abhay Anand, NTPC  
Shri Shankar Saran, NTPC  
Shri A.K. Bishoi, NTPC  
Shri A. Basu Roy, NTPC



Shri S.R. Sarangi, NTPC  
 Shri A. K. Haldar, NTPC  
 Shri Bhupinder Kumar, NTPC  
 Shri K.K. Shah, NTPC  
 Shri Vivek Kumar, NTPC  
 Shri T. Vinod, NTPC  
 Shri B.S. Rajput, NTPC  
 Shri Rohit Chhabra, NTPC  
 Shri Navneet Goel, NTPC  
 Shri Nishant Goel, NTPC  
 Shri Somes Bandopadhyay, NTPC

### ORDER

The present petition has been filed by the petitioner, NTPC for approval of tariff of Simhadri Super Thermal Power Station, Stage-I (2 x 500 MW) (hereinafter referred to as “the generating station”) for the period 20014-19 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. The generating station with a capacity of 1000 MW comprises of two units of 500 MW each. Unit-I of the generating station was declared under commercial operation on 1.9.2002 and Unit-II on 1.3.2003.

3. The Commission vide order dated 2.11.2015 in Petition No. 304/GT/2014 had revised the tariff of the generating station for the period 2009-14 after final true-up of the additional capital expenditure in terms of Regulation 6 (1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 considering the capital cost of ₹353306.58 lakh as on 31.3.2014 on cash basis and after deduction of un-discharged liabilities of ₹5628.35 lakh as on 1.4.2009. The annual fixed charges approved by the said order dated 2.11.2015 was as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	24382.28	24081.89	23899.96	24054.85	24781.13
Interest on Loan	6402.89	5851.67	5331.73	4828.28	4323.84
Depreciation	17390.14	17348.31	17435.25	17600.24	17691.74
Interest on Working Capital	6587.82	6610.84	6655.77	6685.36	6744.54
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Cost of secondary fuel oil	1841.11	1841.11	1846.16	1841.11	1841.11
Compensation Allowance	0.00	0.00	0.00	0.00	150.00
<b>Total</b>	<b>69604.23</b>	<b>69473.82</b>	<b>69698.87</b>	<b>70369.83</b>	<b>71772.36</b>



4. The petitioner in this petition filed vide affidavit dated on 13.8.2014 has sought the approval of tariff in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner for the period 2014-19 in this petition are as under:

**Capital Cost**

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	353851.62	359488.62	363108.62	364514.62	365638.62
Add: Additional Capital Expenditure	5637.00	3620.00	1406.00	1124.00	2783.00
<b>Closing Capital Cost</b>	<b>359488.62</b>	<b>363108.62</b>	<b>364514.62</b>	<b>365638.62</b>	<b>368421.62</b>
Average Capital Cost	356670.12	361298.62	363811.62	365076.62	367030.12

**Annual Fixed Charges**

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	17945.14	11025.80	11219.77	11326.57	11508.57
Interest on Loan	3847.94	3493.12	3197.47	2869.76	2552.79
Return on Equity	21805.19	22088.16	22241.79	22319.13	22438.56
Interest on Working Capital	10671.29	10598.89	10645.12	10715.01	10792.35
O&M Expenses	16526.32	17569.74	18675.28	19853.09	21103.29
Compensation Allowance	200.00	200.00	200.00	200.00	500.00
<b>Total</b>	<b>70995.89</b>	<b>64975.70</b>	<b>66179.43</b>	<b>67283.56</b>	<b>68895.56</b>

5. The petitioner has filed additional information in compliance with the directions of the Commission. None of the respondents have filed reply in the matter. We now proceed to examine the claim of the petitioner, on prudence check, based on the submissions and the documents available on records as stated in the subsequent paragraphs.

**Capital Cost as on 1.4.2009**

6. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

*"The Capital cost of an existing project shall include the following:*

- the capital cost admitted by the Commission prior to 1.4.2014 duly tured up by excluding liability, if any, as on 1.4.2014;*
- additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
- expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15."*

7. The annual fixed charges claimed in the petition is based on opening capital cost of ₹353851.62 lakh as on 1.4.2014, as against ₹353306.58 lakh as on 31.3.2014 as admitted by the



Commission vide order dated 2.11.2015 in Petition No. 304/GT/2014. Further, the petitioner vide affidavit dated 13.8.2014 has furnished the value of capital cost and liabilities as on 1.4.2014 as per books of accounts in Form-9E. The details of liabilities and capital cost have been reconciled with the information available with the records of the Commission as under:

	(₹ in lakh)	
	As per Form-9E	As per records of Commission
Capital cost as on 1.4.2014 as per books	396269.56	396269.56
Liabilities included in the above	5857.08	5857.08

8. It is evident from the above that there is no variation in the capital cost and liabilities position as on 1.4.2014 as per the books and details available with the Commission. Further, out of the total liabilities amounting to ₹5857.08 lakh corresponds to approved capital cost of ₹353306.58 lakh (on cash basis) as on 31.3.2014. Accordingly, the opening capital cost to be considered as on 1.4.2014, after removal of un-discharged liabilities works out to ₹353306.58 lakh (on cash basis).

#### **Actual/ Projected Additional Capital Expenditure during 2014-19**

9. Regulation 14 (3) of the 2014 Tariff Regulations, provides as under:

*“14.(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

- (i) *Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
- (ii) *Change in law or compliance of any existing law;*
- (iii) *Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*
- (iv) *Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (v) *Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*
- (vi) *Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*
- (vii) *Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;*



(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite based station shall be met out of compensation allowance:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M), repairs and maintenance under (O&M) expenses and Compensation Allowance, same expenditure cannot be claimed under this regulation."

10. The break-up of the projected additional capital expenditure claimed during 2014-19 is detailed as under:

Sl. No.		Regulations under which claimed	(₹ in lakh)				
			2014-15	2015-16	2016-17	2017-18	2018-19
1	Raising Ash dyke	14(3)(iv)	2383.00	2300.00	1406.00	1124.00	2783.00
2	Permanent Dust suppression system for Lagoons 1 & 2	14(3)(ii)	400.00	536.00	0.00	0.00	0.00
3	Dry Ash evacuation system	14(3)(ii)	2854.00	504.00	0.00	0.00	0.00
4	Augmentation of Fire Fighting system	14(3)(ii) & 14(3)(iii)	0.00	280.00	0.00	0.00	0.00
			<b>5637.00</b>	<b>3620.00</b>	<b>1406.00</b>	<b>1124.00</b>	<b>2783.00</b>

11. The projected additional capital expenditure claimed by the petitioner has been discussed in the succeeding paragraphs.

### Raising of Ash Dyke

12. The petitioner has claimed ₹2383.00 lakh in 2014-15, ₹2300.00 lakhs in 2015-16, ₹1406.00 lakhs in 2016-17, ₹1124.00 lakh in 2017-18 and ₹2783.00 lakh in 2018-19 towards works of ash dyke





raising consisting of two Lagoons i.e.lagoon-1and lagoon-2. We have examined the matter. It is observed from the submissions of the petitioner that expenditure projected is for planned works related to ash pond/ ash handling system which is of continuous nature during the operational life of generating station and the works claimed are as per the approved scheme under original scope of work. As the expenditure is covered under original scope of works and based on environmental considerations the said expenditure is allowed under Regulation 14(3)(iv) of the 2014 Tariff Regulations for the period 2014-19. However, the petitioner is directed to submit at the time of truing up of tariff, the detail break-up of the activities along with the cost incurred for each work under the Raising of Ash Dyke works, the estimated expenditure envisaged for Ash Handling system/ Ash Dyke Raising in the original scope of work, the actual expenditure incurred as on COD of the generating station and from COD to 2018-19.

**Permanent Dust suppression system for Lagoons 1 &2**

13. The petitioner has claimed ₹400.00 lakh in 2014-15 and ₹536.00 lakh in 2015-16 towards Permanent Dust suppression system for Lagoons 1&2 as per the Regulation 14(3)(ii) of the 2014 Tariff Regulations (i.e. change in law or compliance of any existing law). We have considered the submissions. It is observed that this system is being installed as per the norms & guidelines specified by Andhra Pradesh Pollution Control Board vide letter dated 3.10.2013. Hence, the expenditure on permanent dust suppression system for Lagoon 1 & 2 is allowed under Regulations 14(3)(ii) of the 2014 Tariff Regulations. However, the petitioner is directed to submit at the time of truing up of tariff the details of works undertaken along with cost break-up for permanent dust suppression system and the actual data of dust emission compared to norms after installation of dust suppression system.

**Dry Ash evacuation system:**

14. The petitioner has claimed ₹2854.00 lakh in 2014-15 and ₹504.00 lakh in 2015-16, for providing pedestals Dry Ash Evacuation System under Regulation 14(3)(ii) of the 2014 Tariff Regulations (i.e. change in law or compliance of any existing law). The petitioner in its justification has submitted that the Commission has allowed ₹3530 lakh vide order dated 27.8.2012 in Petition No. 257/2009 towards this work and Augmentation of the dry Ash evacuation system is as per the



MOEF directions dated 3.11.2009. The petitioner has further submitted that the Work package was awarded on M/S Tecpro in 2010 for erection & commissioning of the DAES work. Due to severe financial crisis position of the agency, resources deployment depleted & work progress turned out to be less than the anticipated. However, continual effort and follow up actions are on to complete the balance works.

15. It is further noticed that the petitioner in Petition No. 304/GT/2014 had submitted that the expenditure of ₹3100 lakh towards DAES was under capital work in progress and the same shall be capitalized during the year 2014-15. Accordingly, the Commission in its order dated 2.11.2015 in Petition No 304/GT/2014 observed that the submission of the petitioner shall be examined in terms of the provisions of the 2014 Tariff Regulations. In view of the above fact, the expenditure on Dry Ash Evacuation System amounting to ₹2854.00 lakh in 2014-15 and ₹504.00 lakh in 2015-16 is allowed under Regulation 14(3)(ii) of 2014 Tariff Regulations.

#### **Augmentation of Fire Fighting system**

16. The petitioner has claimed ₹280.00 lakh in 2015-16 towards augmentation of Fire Fighting system under Regulation 14(3)(ii) and 14(3)(iii) of the 2014 Tariff Regulations. The petitioner in its justification has submitted that the expenditure is to comply with existing regulations of CEA (Technical Standard for construction of Electric Plant & Electric lines) Regulations, 2010 notification issued on 20.8.2010 and CEA (safety requirement of construction, O&M of Electric plants & Electric lines) Regulations, 2011 notification dated 24.11.2011. The petitioner further submitted that this is also recommended by Dy. Commandant of CISF (Ministry of Home Affairs) vide letter dated 15.7.2014.

17. We have examined the submission of the petitioner. It is observed that the petitioner has not established that the augmentation of a firefighting system is due to any change in law. A proper well equipped fire fighting system was the requirement in any thermal power station even prior to the CEA safety standards which came in the year 2010. Therefore CEA Regulations, 2010 cannot be said to be a Change-in-law. Further, the plant was operating with the existing fire fighting system since its COD. In addition, the petitioner has not furnished any supportive document or



notification which suggests that the letter from Deputy Commandant CISF is due to advice or direction from the Appropriate Government/ agency. Hence, the claim under Regulation 14(3)(iii) towards security and safety of plant cannot be entertained under this regulation. Accordingly, expenditure of ₹280.00 lakh in the year 2015-16 for augmentation of a firefighting system is not allowed. However, the petitioner has been allowed compensation allowance for meeting such type of capital expenditure and the same should be met from the said allowance.

18. Based on the above discussions, the projected additional capital expenditure allowed during the period 2014-19 is summarised as under:

(₹ in lakh)						
Package Name	Regulations under which claimed	2014-15	2015-16	2016-17	2017-18	2018-19
Raising Ash dyke	14(3)(iv)	2383.00	2300.00	1406.00	1124.00	2783.00
Permanent Dust suppression system for Lagoons 1 & 2	14(3)(ii)	400.00	536.00	0.00	0.00	0.00
Dry Ash evacuation system	14(3)(ii)	2854.00	504.00	0.00	0.00	0.00
Augmentation of Fire Fighting system	14(3)(ii) & 14(3)(iii)	0.00	0.00	0.00	0.00	0.00
		<b>5637.00</b>	<b>3340.00</b>	<b>1406.00</b>	<b>1124.00</b>	<b>2783.00</b>

19. Accordingly, the capital cost for the period 2014-19 in respect of the generating station is worked out and allowed as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	353306.58	358943.58	362283.58	363689.58	364813.58
Projected additional capital expenditure admitted	5637.00	3340.00	1406.00	1124.00	2783.00
<b>Closing capital cost</b>	<b>358943.58</b>	<b>362283.58</b>	<b>363689.58</b>	<b>364813.58</b>	<b>367596.58</b>

### Debt–Equity Ratio

20. Regulation 19 of the 2014 Tariff Regulations provides as under:

- (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

- (i) where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- (ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:



(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.

**Explanation** - The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

- (2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.
- (3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.
- (4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt:equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt:equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.
- (5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

21. Accordingly, the gross normative loan and equity amounting to ₹247314.61 lakh and ₹105991.98 lakh, respectively as on 31.3.2014 as considered in order dated 2.11.2015, has been considered as gross normative loan and equity as on 1.4.2014. Hence, the normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to true-up in terms of the 2014 Tariff Regulations.

### Return on Equity

22. Regulation 24 of the 2014 Tariff Regulations provides as under:

**“24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:



ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

23. Regulation 25 of the 2014 Tariff Regulations provides as under:

**“Tax on Return on Equity**

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.

24. The petitioner has claimed return on equity considering base rate of 15.5% and effective tax rate of 23.939%. However, the petitioner in its submissions dated 23.9.2015 in Petition No. 290/GT/2014 (Singrauli STPS) has submitted that the effective tax rate of 22.584% based on the actual profit and tax paid for the year 2014-15. During the hearing of NTPC petitions, beneficiaries had raised an issue on the computation of effective tax rate. This issue being not confined to a single petition and being generic in nature as the issue is applicable to all NTPC petitions uniformly need deliberation. On this issue against specific query through ROP, the petitioner vide its affidavit



dated 8.1.2016 in Petition no. 280/GT/2014 (Farakka STPS, Stage-III) has filed Auditor's Certificate regarding deposit of advance tax on generation business for the year 2014-15 as well as Income Tax return for the financial year 2014-15 (Assessment Year 2015-16). We have examined the documents submitted and observed that the regulation prescribe computation of effective tax rate on the basis of tax paid, still we deem it proper to allow grossing up on MAT rate considering the fact that the matter is getting decided in the year 2016-17. Accordingly, the effective tax rate (MAT) of 20.961% has been considered for the year 2014-15 and 21.342% for the year 2015-16 onwards up to the year 2018-19 for the purpose of grossing up of base rate of 15.5%. Accordingly, the rate of Return on Equity works out to 19.610% for the year 2014-15 and 19.705% for the year 2015-16 onwards. This is however, subject to true-up. Accordingly, return on equity has been worked out as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Normative Equity	105991.98	107683.08	108685.08	109106.88	109444.08
Addition due to Additional capital expenditure	1691.10	1002.00	421.80	337.20	834.90
Closing Equity	107683.08	108685.08	109106.88	109444.08	110278.98
Average Equity	106837.53	108184.08	108895.98	109275.48	109861.53
Rate of Return on Equity	15.500%	15.500%	15.500%	15.500%	15.500%
Effective tax rate	20.961%	21.342%	21.342%	21.342%	21.342%
Return on Equity (Pre-tax)	19.610%	19.705%	19.705%	19.705%	19.705%
<b>Return on Equity (Pre-tax) - Annualised</b>	<b>20950.84</b>	<b>21317.67</b>	<b>21457.95</b>	<b>21532.73</b>	<b>21648.21</b>

### Interest on Loan

25. Regulation 26 of the 2014 Tariff Regulations provides as under:

**“26. Interest on loan capital:** (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:





*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

*(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

*(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.*

*(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.*

*(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:*

*Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."*

26. Interest on loan has been worked out as under:

- (a) The gross normative loan of ₹247314.61 lakh as on 1.4.2014 has been considered.
- (b) Cumulative repayment of loan of ₹117343.44 lakh as on 31.3.2014 as considered in order dated 2.11.2015 in Petition No.304/GT/2014 has been considered as on 1.4.2014.
- (c) Accordingly, the net normative opening loan as on 1.4.2014 works out to ₹ 129971.17 lakh.
- (d) Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.
- (e) Depreciation allowed for the period has been considered as repayment of normative loan during the respective year for the period 2009-14.
- (f) In line with the provisions of the regulation, the weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the generating station. In case of loans carrying floating rate of interest the rate of interest as provided by the petitioner has been considered for the purpose of tariff. The calculations for weighted average rate of interest on loan have been enclosed as Annexure-I to this order.

27. The necessary calculation for interest on loan is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Notional Loan	247314.61	251260.51	253598.51	254582.71	255369.51
Cumulative Repayment of Loan up to previous year	117343.44	135261.10	146264.58	157451.12	168744.40
Net Opening Loan	129971.17	115999.41	107333.92	97131.58	86625.11
Addition due to Additional Capitalisation	3945.90	2338.00	984.20	786.80	1948.10



Repayment of Loan during the period	17917.66	11003.48	11186.54	11293.27	11475.15
Net Closing Loan	115999.41	107333.92	97131.58	86625.11	77098.06
Average Loan	122985.29	111666.67	102232.75	91878.35	81861.58
Weighted Average Rate of Interest on Loan	3.1374%	3.1356%	3.1336%	3.1312%	3.1284%
<b>Interest on Loan</b>	<b>3858.50</b>	<b>3501.45</b>	<b>3203.57</b>	<b>2876.94</b>	<b>2561.00</b>

### Depreciation

28. Regulation 27 of the 2014 Tariff Regulations provides as under:

**“27. Depreciation:** (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-II** to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.



(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project(five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

29. The cumulative depreciation amounting to ₹160349.22 lakh as on 31.3.2014 as considered in order dated 2.11.2015 has been considered for the purpose of tariff. Further, the value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing depreciation) for the year 2014-15 works out to ₹153255.43 lakh. Since as on 1.4.2014, the used life of the generating station is 11.33 years which is less than 12 years from the effective station COD of 30.11.2002, the depreciation shall be calculated by applying weighted average rate of depreciation for the year 2014-15. Further, since the used life of the generating station as on 1.4.2015 exceed 12 years from the effective station COD, the depreciation for the period 2015-19 shall be calculated using spreading of the remaining depreciable value over the balance useful life for respective years.

30. The petitioner has claimed the depreciation considering the weighted average rate of depreciation of 5.03% for the year 2014-15 after spreading of the remaining depreciable value over the balance useful life for period 2015-19. However, considering the rates of depreciation as specified in Appendix-II to the 2014 Tariff Regulations, the weighted average rate of depreciation for the year 2014-15 works out to 5.0313%, and the same has been considered for calculating depreciation for the year 2014-15. For the year 2015-16 and onwards, depreciation has been calculated by spreading over the remaining depreciable value over the balance useful life of the generating station for respective years.

31. Accordingly, depreciation has been computed as follows:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Average Capital Cost	356125.08	360613.58	362986.58	364251.58	366205.08
Freehold land included above	7675.47	7675.47	7675.47	7675.47	7675.47
Depreciable value @ 90%	313604.66	317644.31	319780.01	320918.51	322676.66



Remaining useful life at the beginning of the year	13.67	12.67	11.67	10.67	9.67
Balance depreciable value	153255.43	139377.42	130509.64	120461.60	110926.47
<b>Depreciation (annualized)</b>	<b>17917.66</b>	<b>11003.48</b>	<b>11186.54</b>	<b>11293.27</b>	<b>11475.15</b>
Cumulative depreciation at the end	178266.89	189270.37	200456.91	211750.18	223225.33

### Compensation Allowance

32. The petitioner has claimed compensation allowance (unit-wise) to meet expenses on new assets of capital nature including in the nature of minor assets as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
200.00	200.00	200.00	200.00	500.00

33. Regulation 17(1) of the 2014 Tariff Regulations provides as under:

**“17. Compensation Allowance:** (1) In case of coal-based or lignite-fired thermal generating station or a unit thereof, a separate compensation allowance shall be admissible to meet expenses on new assets of capital nature which are not admissible under Regulation 14 of these regulations, and in such an event, revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

(2) The Compensation Allowance shall be allowed in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:”

Years of operation	Compensation Allowance (₹ lakh/MW/year)
0-10	Nil
11-15	0.20
16-20	0.50
21-25	1.00

34. In terms of above regulation, both the units of the generating station are in commercial operation for more than 10 years from their respective date of CODs and accordingly, the compensation allowance worked out is as under:

(₹ in lakh)		
Description	Unit-I	Unit -II
Capacity in MW	500	500
COD	1.9.2002	1.3.2003
Useful life as on 1.4.2014	11.58	11.085
Actual useful life		
a) 10 years	1.9.2012	1.3.2013
b) 15 years	1.9.2017	1.3.2018
c) 20 years	1.9.2022	1.3.2023
d) 25 years	1.9.2027	1.3.2028
2014-15	100.00	100.00
2015-16	100.00	100.00
2016-17	100.00	100.00
2017-18	100.00	100.00



2018-19	250.00	250.00
<b>Total</b>	<b>650.00</b>	<b>650.00</b>

35. Therefore, the compensation allowance of ₹650.00 lakh each for Unit-I and Unit-II during the period 2014-19 is allowed.

#### O&M Expenses

36. Regulation 29 (1) (c) of the 2014 Tariff Regulations provides the year-wise O&M expense norms claimed for the generating station of the petitioner as under:

(₹ in lakh/MW)				
2014-15	2015-16	2016-17	2017-18	2018-19
16.00	17.01	18.08	19.22	20.43

37. Accordingly, the year-wise O&M expenses claimed by the petitioner in terms of the above said norms are allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
16000.00	17010.00	18080.00	19220.00	20430.00

#### Water Charges

38. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

*"29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization*

39. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner.

40. The petitioner has claimed water charges based on the expected water consumption of the generating station and the type of cooling water system has also been furnished. The water charges claimed by the petitioner are as follows:



(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
526.32	559.74	595.28	633.09	673.29

41. In order to examine the trend of the actual water consumption and rate of water charges, the petitioner was directed vide ROP of the hearing dated 27.2.2015 to furnish the details of the actual water consumption along with the rate of water charges for the last five years (i.e 2009-10 to 2013-14) along with relevant notification in support of the same. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2013-14 have been furnished by the petitioner as under:

Description	Remarks
Type of Plant	Coal
Type of cooling water system	Closed circuit cooling
Consumption of water	4247969 kl/Annum
Rate of water charges	₹12.39/kl
<b>Total water charges in 2013-14</b>	<b>₹526.32 lakh</b>

42. In compliance with the above, the petitioner vide affidavit dated 4.6.2015 has furnished the details of the year-wise actual water consumption and water charges for last 5 years as detailed below:

Year	Quantity of sweet water (KL)	Rate (₹/KL)	Total Water Charges (₹ in lakh)
2009-10	8619520	8.26	712
2010-11	5882776	8.54	495*
2011-12	6325694	8.82	558
2012-13	5351397	11.8	631
2013-14	4247969	12.39	526

\* ₹ 7.00 lakh in 2010-11 were on account of construction activities and hence not included in revenue expenditure

43. The petitioner vide ROP of the hearing dated 10.9.2015 was further directed to submit the reason for variation in quantity of water consumed from 2009-10 to 2013-14. In response, the petitioner vide affidavit dated 22.9.2015 has submitted that the reason for variation is due to rainwater received in the reservoir during the year, raising of reservoir bund height from 3.00 meter to 3.10 meter, need of building up reservoir level due to frequent canal closure and lower generation in 2013-14 as compared to 2009-10. It has further submitted that the permissible quantity of water to be consumed on yearly basis shall be governed by the Bulk Water Supply Agreement between GoAP, VIWSCO and NTPC. It has also stated that the user shall pay to the operator the special charges of ₹7 per KL till 31.3.2005 and it shall be escalated @ 2% for the





financial year 2005-06 and thereafter @ 4% annually to a maximum of ₹8.93 per KL. The petitioner has added that the charges of ₹8.93 per KL or charge fixed by Charges Review Committee whichever is lower, shall be applicable to contract volume or up to 32 MLD whichever is lower and beyond 32 MLD or beyond the contract volume whichever is lower at that point, the charges shall be as fixed by Charges Review Committee. The notification of the Govt. of Andhra Pradesh, Irrigation and CAD, Department, dated 25.2.2015, fixing the revised rate of ₹11.80 per KL for 2012-13 w.e.f. 1.4.2012, with annual escalation of 5% has been enclosed by the petitioner.

44. The petitioner has claimed the water charges during 2014-19 as under:

(₹ in lakh)	
Year	Projected Water charges
2014-15	526.32
2015-16	559.74
2016-17	595.28
2017-18	633.09
2018-19	673.29

45. From table above, it is noted that the petitioner has claimed the same water charges during 2014-15 as in the year 2013-14. It is observed that the water consumption was minimum during the period 2009-14. The petitioner has claimed the water charges during 2014-15 based on the water consumption and water charges paid during the year 2013-14 and have escalated the same @ 6.35% as per the escalation rate in O&M norms specified by the Commission for the period 2014-19. This escalation rate of 6.35% considered by the petitioner is not in line with the escalation rate of 5% specified in the Notification dated 25.2.2015 of the GoAP. Hence, the yearly escalation of water charges rate as per notification dated 25.2.2015 has been considered. Accordingly, water charges have been allowed with the annual escalation of 5% to the water charges claimed during 2014-15. Based on this, water charges for the period 2014-19 are allowed as under:

(₹ in lakh)	
Year	Water charges allowed
2014-15	526.32
2015-16	552.64
2016-17	580.27
2017-18	609.28
2018-19	639.75



46. The water charges allowed as above is subject to truing -up at the end of the tariff period for which the petitioner is directed to place on record all relevant information.

47. Accordingly, the total O&M expenses including water charges as claimed by the petitioner and allowed for the purpose of tariff is as under:

	(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19	Total
O&M Expenses as claimed	16000.0	17010.0	18080.0	19220.0	20430.0	90740.0
O&M Expenses as allowed	16000.0	17010.0	18080.0	19220.0	20430.0	90740.0
Water Charges as claimed	526.32	559.74	595.28	633.09	673.29	2987.71
Water Charges as allowed	526.32	552.64	580.27	609.28	639.75	2908.25
Total O&M Expenses as claimed (including Water charges)	16526.32	17569.74	18675.28	19853.28	21103.29	93727.72
<b>O&amp;M Expenses allowed (including water charges)</b>	<b>16526.32</b>	<b>17562.64</b>	<b>18660.27</b>	<b>19829.28</b>	<b>21069.74</b>	<b>23648.25</b>

### Capital spares

48. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up, shall be considered on merits, after prudence check.

### Operational Norms

49. The operational norms in respect of the generating station claimed by the petitioner are as under:

Target Availability (%)	83.00
Heat Rate (kcal/kwh)	2375.00
Auxiliary Energy Consumption (%)	5.25
Specific Oil Consumption (ml/ kwh)	0.50

50. The operational norms claimed by the petitioner are in accordance with Regulation 36 of the 2014 Tariff Regulations and discussed as under:

### Normative Annual Plant Availability Factor (NAPAF)

51. Regulation 36 (A) (a) of the 2014 Tariff Regulations provides as under:

*(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) &(e)- 85%.*

*Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.*

*The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014.*



52. The petitioner has considered the target availability norm of 83% during 2014-19. The Commission due to shortage of domestic coal supply has relaxed target availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Hence, in view of the above provision the target availability of 83% is allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 & 2018-19 in terms of the Regulation 36(A) (a) of the 2014 Tariff Regulations.

#### **Heat Rate (kcal/kwh)**

53. Regulation 36(C)(a) of the 2014 Tariff Regulations, provides Gross Station Heat Rate of 2375 kCal/kWh for existing coal based thermal generating stations of 500 MW sets whose COD's were before 1.4.2009. The COD of the generating station was 1.3.2003. Hence, the heat rate considered by the petitioner is as per norms and is allowed.

#### **Auxiliary Power Consumption**

54. Regulation 36(E)(a) of Tariff Regulations, 2014 provides Auxiliary Energy Consumption of 5.25% for coal based generating stations of 500 MW sets with Natural Draft cooling tower or without cooling tower with steam driven BFP. Hence, the Auxiliary Energy Consumption considered by the petitioner is as per norms and is allowed.

#### **Specific Oil Consumption**

55. Regulation 36(D)(a) of the 2014 Tariff Regulations, provides secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station. Hence, the secondary fuel oil consumption considered by the petitioner is as per norms and is allowed.

#### **Interest on Working Capital**

56. Sub-section (c) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*“28. Interest on Working Capital:*

*(1) The working capital shall cover*

*(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations*

*(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;*



(ii) Maintenance spares @ 30% of operation and maintenance expense specified in regulation 29; and

(iii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;

(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;

(v) Operation and maintenance expenses for one month."

### Fuel Components and Energy Charges in working capital

57. The petitioner has claimed cost for fuel components in working capital based on 'as fired' GCV of coal procured and burnt for the preceding three months of January, 2014, February, 2014 and March, 2014 and secondary fuel oil for the preceding three months of January, 2014, February, 2014 and March, 2014, as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for 2 months	30954	31038	30954	30954	30954
Cost of Secondary fuel oil 2 months	328.75	329.65	328.75	328.75	328.75

58. The Commission vide ROP of the hearing dated 27.2.2015 directed the petitioner to submit the GCV of coal on 'as received' basis. In response, the petitioner vide affidavit dated 4.6.2015 has submitted that they did not have suitable infrastructure for measurement of representative GCV on 'as received' basis.

59. The issue of 'as received' GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon'ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon'ble High Court of Delhi had directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

60. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

*"58. In view of the above discussion, the issues referred by the Hon'ble High Court of Delhi are decided as under:*



(a) *There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.*

(b) *The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC."*

61. Further, the petitioner has claimed energy charge rate (ECR) of 272.452 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & oil procured and burnt for the preceding three months. It is observed that the petitioner has not placed on record the GCV of coal on 'as received' basis though the petitioner was statutorily required to furnish such information with effect from 1.4.2014. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydraulic Augur. The petitioner has not submitted the required data regarding measurement of GCV of coal in compliance with the directions contained in the said order dated 25.1.2016. The present petition cannot be kept pending till the petitioner submits the required information. Hence, the Commission has decided to compute fuel components and the energy charges in the working capital by provisionally taking the GCV of coal on as 'billed basis' and allowing an adjustment for total moisture as per the formula given as under:

$$\frac{\text{GCV} \times (1 - \text{TM})}{(1 - \text{IM})}$$

Where: GCV=Gross Calorific value of coal  
TM=Total moisture  
IM= Inherent moisture

62. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for the years 2014-15, 2015-16 and 2016-17 and at 85% NAPAF for the year 2017-18 & 2018-19 and based on 'as billed' GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January 2014 to March 2014 and allowed as under:



(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock-30 days	11799.15	11799.15	11799.15	12083.47	12083.47
Cost of Coal for Generation-30 days	11799.15	11799.15	11799.15	12083.47	12083.47
Cost of Secondary fuel oil 2 months	328.75	329.65	328.75	336.67	336.67

63. Similarly, the energy charge rate (ECR) based on operational norms specified in 2014 Regulations and on 'as billed' GCV of coal for preceding 3 months i.e. March to January 2014 is worked out as under:

Sr. No.		Unit	2014-19
1	Capacity	MW	2x500
2	Gross Station Heat Rate	Kcal/kWh	2375
3	Aux. Energy Consumption	%	5.25
4	Weighted average GCV of oil (As fired)	Kcal/lit	9793
5	Weighted average GCV of Coal (As Billed)	Kcal/kg	4809.20
6	Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV Of Coal India		*
7	Weighted average price of oil	Rs/KL	54258.31
8	Weighted average price of Coal	Rs/MT	4006.32
9	<b>Rate of energy charge ex-bus</b>	<b>Paise/kWh</b>	<b>211.246**</b>

\* To be calculated by the petitioner based on the adjustment formula

\*\* To be revised as per the figures at Sr. No. 6

64. The GCV of coal as computed above shall be adjusted in the light of the GCV of coal on 'as received basis' computed by the petitioner as per our directions in order dated 25.1.2016 in Petition No. 283/GT/2014.

65. Energy charges for 2 months on the basis of 'as billed' GCV for the purpose of interest on working capital has been worked out as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
24254.80	24321.26	24254.80	24839.26	24839.26

### Maintenance Spares

66. The petitioner has claimed maintenance spares in the working capital as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3305.26	3513.95	3735.06	3970.62	4220.66

67. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses as specified in Regulation 29. As specified in





Regulation 29 (2) of the 2014 Tariff Regulations and as allowed by the Commission in order dated 6.10.2015 in Petition No. 186/GT/2014 (Sugen Power Plant), the maintenance spares @ 20 %of the operation & maintenance expenses including water charges, allowed are as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
3305.26	3512.53	3732.05	3965.86	4213.25

### Receivables

68. Receivables equivalent to two months of capacity charge and energy charges (based on primary fuel only) has been worked out and allowed as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges -2 months	24249.57	24316.01	24249.57	24833.90	24833.90
Fixed Charges - 2 months	11319.57	10327.35	10524.45	10733.37	10949.80
	<b>35569.14</b>	<b>34643.36</b>	<b>34774.02</b>	<b>35567.27</b>	<b>35783.70</b>

### O & M Expenses (1 month)

69. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital are as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1377.19	1464.15	1556.27	1654.42	1758.61

70. Based on the O&M expense norms specified by the Commission and in terms of the Commission's order dated 6.10.2015 in Petition No. 186/GT/2014, the O&M expenses for 1 month is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1377.19	1463.55	1555.02	1652.44	1755.81

### Rate of interest on working capital

71. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*"Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later."*



72. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350bps) has been considered for the purpose of calculating interest on working capital. Interest on working capital has been computed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of coal toward stock – 30 days	11799.15	11799.15	11799.15	12083.47	12083.47
Cost of coal towards generation - 30 days	11799.15	11799.15	11799.15	12083.47	12083.47
Cost of secondary fuel oil - 2 months	328.75	329.65	328.75	336.67	336.67
Maintenance Spares - 20% of O&M	3305.26	3512.52	3732.05	3965.85	4213.94
Receivables	35569.14	34643.36	34774.02	35567.27	35783.70
O&M expenses - 1 month	1377.19	1463.55	1555.02	1652.44	1755.81
<b>Total Working Capital</b>	<b>64178.65</b>	<b>63547.39</b>	<b>63988.15</b>	<b>65689.16</b>	<b>66257.06</b>
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest on Working Capital</b>	<b>8664.12</b>	<b>8578.90</b>	<b>8638.40</b>	<b>8868.04</b>	<b>8944.70</b>

73. Accordingly, annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	17917.66	11003.48	11186.54	11293.27	11475.15
Interest on Loan	3858.50	3501.45	3203.57	2876.94	2561.00
Return on Equity	20950.84	21317.67	21457.95	21532.73	21648.21
Interest on Working Capital	8664.12	8578.90	8638.40	8868.04	8944.70
O&M Expenses	16526.32	17562.64	18660.27	19829.28	21069.74
Compensation Allowance	200.00	200.00	200.00	200.00	500.00
<b>Total</b>	<b>68117.43</b>	<b>62164.12</b>	<b>63346.72</b>	<b>64600.23</b>	<b>66198.78</b>

### Month to Month Energy Charges

74. Clause 6 sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

*“6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:*

*(a) For coal based and lignite fired stations*

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

*Where,*

*AUX = Normative auxiliary energy consumption in percentage.*

*CVPF = Gross calorific value of primary fuel as fired, in kCal per kg, per litre or per standard cubic metre, as applicable.*

*CVSF = Calorific value of secondary fuel, in kCal per ml.*

*ECR = Energy charge rate, in Rupees per kWh sent out.*

*GHR = Gross station heat rate, in kCal per kWh.*

*LC = Normative limestone consumption in kg per kWh.*

*LPL = Weighted average landed price of limestone in Rupees per kg.*

*LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per*



75. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations, 2014 read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014.

76. The petitioner has been directed by the Commission in its order dated 19.2.2016 in Petition No. 33/MP/2014, to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out with the beneficiaries at the Senior Management level.

**Application Fee and Publication Expenses**

77. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited the filing fees of ₹4400000/- for the period 2014-15 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover *pro rata*, the filing fees and the expenses incurred on publication of notices for the period 2014-15 directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2015-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.

78. The annual fixed charges approved for the period 2014-19 as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

79. Petition No. 270/GT/2014 is disposed of in terms of the above.

**-Sd/-**  
**(Dr. M.K.Iyer)**  
**Member**

**-Sd/-**  
**(A. S. Bakshi)**  
**Member**

**-Sd/-**  
**(A. K. Singhal)**  
**Member**

**-Sd/-**  
**(Gireesh B. Pradhan)**  
**Chairperson**



**Annexure-I****Calculation Of Weighted Average Rate Of Interest On Loan**

(₹ in lakh)

Sl. no.	Name of loan	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	JBIC I	Net opening loan	52060.64	48055.97	44051.30	40046.63	36041.96
		Add: Addition during the period	0.00	0.00	0.00	0.00	0.00
		Less: Repayment during the period	4004.67	4004.67	4004.67	4004.67	4004.67
		Net Closing Loan	48055.97	44051.30	40046.63	36041.96	32037.29
		Average Loan	50058.31	46053.64	42048.97	38044.30	34039.63
		Rate of Interest	3.5000%	3.5000%	3.5000%	3.5000%	3.5000%
		Interest	1752.04	1611.88	1471.71	1331.55	1191.39
2	JBIC II	Net opening loan	42847.48	40327.04	37806.60	35286.16	32765.72
		Add: Addition during the period	0.00	0.00	0.00	0.00	0.00
		Less: Repayment during the period	2520.44	2520.44	2520.44	2520.44	2520.44
		Net Closing Loan	40327.04	37806.60	35286.16	32765.72	30245.28
		Average Loan	41587.26	39066.82	36546.38	34025.94	31505.50
		Rate of Interest	3.0000%	3.0000%	3.0000%	3.0000%	3.0000%
		Interest	1247.62	1172.00	1096.39	1020.78	945.17
3	JBIC III	Net opening loan	90282.55	84639.89	78997.23	73354.57	67711.91
		Add: Addition during the period	0.00	0.00	0.00	0.00	0.00
		Less: Repayment during the period	5642.66	5642.66	5642.66	5642.66	5642.66
		Net Closing Loan	84639.89	78997.23	73354.57	67711.91	62069.25
		Average Loan	87461.22	81818.56	76175.90	70533.24	64890.58
		Rate of Interest	3.0000%	3.0000%	3.0000%	3.0000%	3.0000%
		Interest	2623.84	2454.56	2285.28	2116.00	1946.72
4	JBIC IV	Net opening loan	3233.81	2975.11	2716.41	2457.71	2199.01
		Add: Addition during the period	0.00	0.00	0.00	0.00	0.00
		Less: Repayment during the period	258.70	258.70	258.70	258.70	258.70
		Net Closing Loan	2975.11	2716.41	2457.71	2199.01	1940.31
		Average Loan	3104.46	2845.76	2587.06	2328.36	2069.66
		Rate of Interest	3.0000%	3.0000%	3.0000%	3.0000%	3.0000%
		Interest	93.13	85.37	77.61	69.85	62.09
5	<b>Gross Total</b>	Net opening loan	188424.48	175998.01	163571.54	151145.07	138718.60
		Add: Addition during the period	0.00	0.00	0.00	0.00	0.00
		Less: Repayment during the period	12426.47	12426.47	12426.47	12426.47	12426.47
		Net Closing Loan	175998.01	163571.54	151145.07	138718.60	126292.13
		Average Loan	182211.25	169784.78	157358.31	144931.84	132505.37
		Rate of Interest	3.1374%	3.1356%	3.1336%	3.1312%	3.1284%
		<b>Interest</b>	<b>5716.63</b>	<b>5323.81</b>	<b>4930.99</b>	<b>4538.18</b>	<b>4145.36</b>



**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 418/GT/2020**

**Coram:**

**Shri P. K. Pujari, Chairperson  
Shri I. S. Jha, Member  
Shri Pravas Kumar Singh, Member**

**Date of Order: 8<sup>th</sup> February, 2022**

**In the matter of:**

**Corrigendum to the order dated 24.1.2022 in Petition No. 418/GT/2020.**

**In the matter of**

Petition for approval of tariff of Simhadri Super Thermal Power Station Stage-II (1000 MW) for the period from 1.4.2019 to 31.3.2024

**And**

**In the matter of:**

NTPC Limited,  
NTPC Bhawan, Core-7, Scope Complex,  
7, Institutional Area, Lodhi Road  
New Delhi-110003

**.....Petitioner**

**Vs**

1. AP Eastern Power Distribution Company Limited,  
Corporate Office, P&T Colony, Seethammadhara,  
Visakhapatnam – 530 013 (AP)
2. AP Southern Power Distribution Company Limited,  
Corporate Office, Back side, Srinivasa Kalyana Mandapam,  
Tiruchhanur Road, Kesavayana Gunta,  
Tirupathi – 517 503 (AP)
3. Telangana State Northern Power Distribution Company Limited,  
H.No. 2-5-31/2, Vidyut Bhavan, Nakkalagutta, Hanamkonda,  
Warangal – 506 001 (AP)
4. Telangana State Southern Power Distribution Company Limited,  
Mint Compound, Corporate Office,  
Hyderabad – 500 063 (AP)
5. Tamil Nadu Generation & Distribution Corporation Limited,  
144, Anna Salai, Chennai – 600 002



6. Bangalore Electricity Supply Company Limited,  
Krishna Rajendra Circle,  
Bangalore - 560 009
7. Mangalore Electricity Supply Company Limited,  
MESCOM Bhavan, Corporate Office,  
Bejai, Kavour cross road,  
Mangaluru-575004, Karnataka
8. Chamundeshwari Electricity Supply Corporation Limited,  
Corporate Office, No. 29, Vijayanagar, 2<sup>nd</sup> stage, Hinkal,  
Mysore – 570 017
9. Gulbarga Electricity Supply Company Limited,  
Main road,  
Gulbarga – 585 102, Karnataka
10. Hubli Electricity Supply Company Limited,  
Corporate office, P.B.Road, Navanagar  
Hubli – 580 025
11. Kerala State Electricity Board Limited,  
Vaidyuthi Bhavanam, Pattom,  
Thiruvananthapuram – 695 004
12. Electricity department,  
Government of Puducherry,  
137, NSC Bose Salai  
Puducherry- 605001

.....Respondents

**CORRIGENDUM ORDER**

The Commission by its order dated 24.1.2022 in Petition No. 418/GT/2020 had determined the tariff of Simhadri Super Thermal Power Station Stage-II (1000 MW) for the 2019-24 tariff period as under:

	<i>(Rs. in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	27708.29	27747.18	27768.11	27768.11	27768.11
Interest on Loan	15005.32	12732.21	10449.37	8302.47	6108.40
Return on Equity	30753.55	30793.55	30816.77	30816.85	30816.96
Interest on Working Capital	5667.92	5300.73	4953.51	4967.05	4977.70
O&M Expenses	24596.68	25489.88	26418.24	27382.01	28371.48
<b>Total annual fixed charges</b>	<b>103731.76</b>	<b>102063.55</b>	<b>100406.00</b>	<b>99236.49</b>	<b>98042.65</b>





2. It is observed that certain inadvertent clerical/ arithmetical errors have crept in the tables under paragraph 50 and paragraph 83 of the order dated 24.1.2022, pertaining to water charges and working capital for Receivables (fixed charges and energy charge for 45 days), respectively, while determining the tariff of the generating station.

3. Therefore, in terms of the Regulation 111 read with Regulation 103A of the CERC (Conduct of Business) Regulations 1999, the inadvertent clerical/ arithmetical errors in the tables under paragraph 50 and paragraph 83 of the order dated 24.1.2022 are being corrected.

4. Accordingly, the following changes are being made to the order dated 24.1.2022 in Petition No. 418/GT/2020:

**(a) In the table under paragraph 50 (Page 34):**

(i) In Column 1, Rows 2 and 4, the word 'Sea Water' is corrected and to be read as 'Sweet Water'.

(ii) In Column 1, Rows 5 and 7, the word 'Sweet Water' is corrected and to be read as 'Sea Water'.

**(b) In the table under paragraph 83 pertaining to Working capital for Receivables, the figures are rectified as under:**

	<i>(Rs. in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Fixed charge for 45 days	13116.00	12920.91	12693.74	12549.56	12369.33
Energy charge for 45 days	24321.19	24254.74	24254.74	24254.74	24321.19
	<b>37437.19</b>	<b>37175.65</b>	<b>36948.48</b>	<b>36804.30</b>	<b>36690.53</b>

**Rate of Interest on Working Capital**

5. Consequent upon the above mentioned rectification, the table under paragraph 86 of the order dated 24.1.2022 pertaining to the Rate of Interest on working capital is modified as under:



(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Working capital for cost of Coal/Lignite for stock (A)	10723.19	10723.19	10723.19	10723.19	10723.19
Working capital for cost of Coal/Lignite for generation (B)	16084.79	16084.79	16084.79	16084.79	16084.79
Working capital for cost of oil for 2 months (C)	262.50	261.79	261.79	261.79	262.50
Working capital for fuel cost (D)	0.00	0.00	0.00	0.00	0.00
Working capital for liquid fuel Stock (E)	0.00	0.00	0.00	0.00	0.00
Working capital for O & M expenses - 1 month (F)	2049.72	2124.16	2201.52	2281.83	2364.29
Working capital for Maintenance spares - 20% of O&M (G)	4919.34	5097.98	5283.65	5476.40	5674.30
Working capital for Receivables – 45 days (H)	37437.19	37175.65	36948.48	36804.30	36690.53
<b>Total Working Capital (I) = (A+B+C+D+E+F+G+H)</b>	<b>71476.74</b>	<b>71467.55</b>	<b>71503.42</b>	<b>71632.30</b>	<b>71799.60</b>
Rate of Interest (J)	12.05%	11.25%	10.50%	10.50%	10.50%
<b>Total Interest on Working capital (K) = (I)*(J)</b>	<b>8612.95</b>	<b>8040.10</b>	<b>7507.86</b>	<b>7521.39</b>	<b>7538.96</b>

**Annual Fixed Charges**

6. In view of the above, the annual fixed charges determined by order dated 24.1.2022 in Petition No.418/GT/2020 for the 2019-24 tariff period in paragraph 87 stands modified as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	27708.29	27747.18	27768.11	27768.11	27768.11
Interest on Loan	15005.32	12732.21	10449.37	8302.47	6108.40
Return on Equity	30753.55	30793.55	30816.77	30816.85	30816.96
Interest on Working Capital	8612.95	8040.10	7507.86	7521.39	7538.96
O&M Expenses	24596.68	25489.88	26418.24	27382.01	28371.48
<b>Total annual fixed charges</b>	<b>106676.79</b>	<b>104802.92</b>	<b>102960.34</b>	<b>101790.84</b>	<b>100603.91</b>

7. Except for the above, all other terms contained in order dated 24.1.2022 in Petition No.418/GT/2020 shall remain unchanged.

**Sd/-**  
**(Pravas Kumar Singh)**  
**Member**

**Sd/-**  
**(I.S.Jha)**  
**Member**

**Sd/-**  
**(P.K. Pujari)**  
**Chairperson**



eviation was carried out at KSTDC (Block 4) to ST, corresponding levy has not been taken into account by ERPC. ERPC has not issued any revision for these blocks. It has been stated that energy account of ERPC needs to be corrected.

#### 50.4 TCC deliberations

- Regarding KSEBL issue (MTOA issued in August 2016), SRPC had informed that the same has been taken up with KSTDC.
- KSTDC had informed that they had requested for 11 SBMs urgently from ST, ST-01, ERPC. Informal Ch. they had purchased spare SBMs for their use but 11 more would be provided to KSTDC.
- TCC had noted the above issues and suggested concerned entities to take necessary steps to close the issues.

#### 50.5 SRPC noted the above

### 51 ISSUES IN BILLING OF GENERATING STATIONS OWNED BY NTPC FINANCE PERIOD 2014-19

- 51.1 KSEBL vide letter dated 31.01.2017 & 17.02.2017 (refer Annexure -XVIII & XIX) had stated that NTPC have adjusted the total measure cost of coal including an increase in working capital and hence increase in AFC. Once the adjustment has been made by ERPC and working capital for the entire tariff period is fixed, further adjustment in working capital cannot be allowed. NTPC cannot make further adjustments and claim of benefit amount from the beneficiaries. It is stated that claim of NTPC is not in line with the Regulations and Orders of ERPC.

#### 51.2 TCC deliberations

- KSEBL had stated that there was discrepancy in AFC computation as there was duplication of the measure cost adjustment in the Tariff Orders.
- NTPC had stated that adjustment of GCV for measure cost and billing is as per ERPC Order and ERPC Regulations. It was mentioned in the Order of Tariff that 'In adjustment in amount of coal cost in the generating station for equilibrated costs (for study) as the billed GCV of Coal India is 'To be calculated by the purchaser based on the adjustment formula' and 'Rate of energy charge as bus' is 'to be revised as per the figures at Sr. No. 3'.
- TCC had observed that NTPC computation appeared to be in line with ERPC Order/Regulations.

#### 51.3 SRPC noted the above

### 52 TCCIL REQUEST TO EXEMPT DEVIATION CHARGES

- 52.1 TPII vide letter dated 07.07.2016 had requested for to consider the period of 30.12.2015 as "Reference week" during CTO system voltage (132kV) and revise the deviation account for the week 28.12.15 to 03.01.16.

Minutes of the 31<sup>st</sup> SRPC Meeting held on 28.02.2017

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 293/GT/2014**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson**

**Shri A.K. Singhal, Member**

**Shri A.S. Bakshi, Member**

**Dr. M.K. Iyer, Member**

**Date of Order: 16<sup>th</sup> February, 2017**

**In the matter of**

Approval of tariff of Talcher Super Thermal Power Station, Stage-II (2000 MW) for the period from 1.4.2014 to 31.3.2019

**And**

**In the matter of**

NTPC Ltd  
NTPC Bhawan,  
Core-7, SCOPE Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi-110003

**.....Petitioner**

**Vs**

1. AP Eastern Power Distribution Company Ltd.  
Corporate office,P& T Colony, Seethammadhara  
Visakhapatnam-530013
2. AP Southern Power Distribution Company Ltd.  
Back side Srinivasa Kalyana Mandapam,  
Tiruchhanur Road, KesavayanaGunta,  
Tirupathi- 517503
3. Telangana State Northern Power Distribution Company Ltd  
H.No.2-5-31/2, Vidyut Bhavan,  
Nakkalagutta, Hanamkonda  
Warangal- 506001
4. Telanagana State Southern Power Distribution Company Ltd  
Mint Compound, Corporate office,  
Hyderabad (AP)- 500063
5. Tamil Nadu Generation & Distribution Corporation Ltd.  
144, Anna Salai,  
Chennai- 600002



6. Bangalore Electricity Supply Company Ltd.  
Krishna Rajendra Circle,  
Bangalore- 560009
7. Mangalore Electricity Supply Company Ltd.  
Paradigm plaza, A.B.Shetty Circle  
Mangalore- 575001
8. Chamundeshwari Electricity SupplyCorp. Ltd.  
927, L.J.Avenue, New Kantharajaur Road  
Saraswathipuram,  
Mysore- 570009
9. Gulbarga electricity Supply Company Ltd.  
Main road Gulbarga- 585102, Karnataka
10. Hubli Electricity Supply Company Ltd.,  
Corporate office, P.B.Road,  
Navanagar, Hubli- 580025
11. Kerala state Electricity Board  
Vaidyuthi Bhavanam, Pattom,  
Thiruvananthapuram- 695004
12. Electricity Department,  
Government of Puducherry  
137, NSC Bose Salai,  
Puducherry- 605001
13. Grid Corporation of Orissa Limited  
Vidyut Bhavan,  
Janpath, Bhubaneswar- 751022

....Respondents

**Parties present:**

Shri Ajay Dua, NTPC  
 Shri Bhupinder Kumar, NTPC  
 Shri Rajeev Choudhary, NTPC  
 Shri B.S.Rajput, NTPC  
 Shri Rohit Chhabra, NTPC  
 Shri Sameer Aggarwal, NTPC  
 Shri Nishant Gupta, NTPC  
 Shri T. Vinod Kumar, NTPC  
 Shri R.B.Sharma, Advocate, GRIDCO  
 Shri S.Vallinayagam, Advocate, TANGEDCO  
 Shri Jaya Prakash, TANGEDCO

**ORDER**

This petition has been filed by the petitioner, NTPC for approval of tariff of Talcher Thermal Power Station (2000 MW), Stage- II (hereinafter referred to as “the generating station) for the period from 1.4.2014 to 31.3.2019 in accordance with the



provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. The generating station with a capacity of 2000 MW comprises of 4 units of 500 MW each. The dates of commercial operation (COD) of the units are as under:

Unit	COD
I	1.8.2003
II	1.3.2004
III	1.11.2004
IV	1.8.2005

3. The Commission vide order dated 28.5.2013 in Petition No. 269/2009 had determined the tariff of the generating station for the period 1.4.2009 to 31.3.2014. Against the said order, the petitioner had filed Appeal No. 173/2013 and the same was disposed of by the Tribunal vide judgment dated 8.5.2014. Thereafter, the petitioner filed Petition No. 320/GT/2013 and Petition No. 208/GT/2014 for revision of tariff of generating station in terms of Regulation 6(1) of 2009 Tariff Regulations for the period from 1.4.2009 to 31.3.2014 after truing-up exercise based on actual additional capital expenditure incurred for the period 2009-14. Accordingly, the closing capital cost and the annual fixed charges for the petitioner for the period 2009-14 as determined by Commission vide order dated 26.8.2015 in Petition Nos. 320/GT/2013 and 208/GT/2014 are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital Cost	496946.86	498187.69	500571.30	503990.61	512678.89
Add: Additional Capital Expenditure	1240.83	2383.61	3419.31	8688.28	16265.06
<b>Closing Capital Cost</b>	<b>498187.69</b>	<b>500571.30</b>	<b>503990.61</b>	<b>512678.89</b>	<b>528943.95</b>
Average Capital Cost	497567.28	499379.49	502280.95	508334.75	520811.42

4. The petitioner has sought approval of tariff for 2014-19 in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner are as under:





### Capital Cost

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	530350.33	537912.33	551052.33	572944.33	580644.33
Add: Addition during the year/ period	7562.00	13140.00	21892.00	7700.00	23719.00
Less: De-capitalization during the year/ period	0.00	0.00	0.00	0.00	0.00
Less: Reversal during the year/ period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/period	0.00	0.00	0.00	0.00	0.00
<b>Closing capital cost</b>	<b>537912.33</b>	<b>551052.33</b>	<b>572944.33</b>	<b>580644.33</b>	<b>604363.33</b>
<b>Average capital cost</b>	<b>534131.33</b>	<b>544482.33</b>	<b>561998.33</b>	<b>576794.33</b>	<b>592503.83</b>

### Annual Fixed Charges

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	27669.07	28205.27	29112.64	10971.06	12223.47
Interest on Loan	2381.26	731.68	0.00	0.00	183.98
Return on Equity	32654.37	33287.18	34358.03	35262.59	36223.00
Interest on Working capital	12562.07	12716.67	12870.81	12633.61	12858.17
O&M expenses	36000.68	38274.72	40684.90	43252.23	45977.81
Compensation allowance	200.00	300.00	400.00	400.00	400.00
Special Allowance	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>111467.45</b>	<b>113515.52</b>	<b>117426.38</b>	<b>102519.48</b>	<b>107866.42</b>

5. In compliance with the directions of the Commission, the petitioner has filed additional information and has served the copies of the same on the respondents. The respondents, KSEB, TANGEDCO and GRIDCO have filed their replies and the petitioner has filed its rejoinder to the said replies. We now proceed to examine the claim of the petitioner, on prudence check, based on the submissions of the parties and the documents available on record, as stated in the subsequent paragraphs.

### Capital Cost as on 1.4.2014

6. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

*“The Capital cost of an existing project shall include the following:*

*(a) The capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*



*(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*

*(c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 15."*

7. The petitioner has claimed opening capital cost as on 1.4.2014 based on the admitted closing capital cost of ₹518916.00 lakh as on 31.3.2014 as allowed in order dated 28.5.2013 in Petition No. 269/2009. The petitioner has further adjusted the capital cost by amount ₹11351.00 lakh in accordance with the closing capital cost as on 31.3.2014 which has been worked out as ₹530350.00 lakh. The Closing Capital Cost of ₹530350.00 lakh as on 31.3.2014 claimed by the petitioner is prior to truing up of tariff based on actual additional capital expenditure for the period 2009-14.

8. The Commission vide order dated 26.8.2015 in Petition No. 320/GT/2013 and 208/GT/2014 had revised the tariff of the generating station after truing-up exercise based on the admitted closing capital cost of ₹528943.95 lakh as on 31.3.2014. The difference in the capital cost considered by the petitioner as against those admitted as on 31.3.2014 is on account of the fact that truing-up exercise for 2009-14 was revised during the pendency of this petition for determination of tariff for the period 2014-19. The corresponding un-discharged liability is ₹3244.53 lakh (₹ 2244.99 lakh pertaining to liability as on 1.4.2009 and ₹999.53 lakh pertaining to liability added during 2009-14. The closing capital cost as admitted by the Commission as on 31.3.2014 in order dated 26.8.2015 shall be considered as opening capital cost for the determination of tariff from 1.4.2014 to 31.3.2019 in terms of the above regulation.

9. The petitioner has claimed closing capital cost of ₹5303250.00 lakh as on 31.3.2014 which is higher than the closing capital cost of ₹528943.95 lakh admitted by the Commission as on 31.3.2014. However, in terms of the above regulation, the admitted closing capital cost of ₹528943.95 lakh as on 31.3.2014 has been considered as opening capital cost as on 1.4.2014.



### Projected Additional Capital Expenditure during 2014-19

10. Clause 3 of Regulation 14 of 2014 Tariff Regulations provides as under:

*"14.Additional Capitalization and De-capitalization: (3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

*(i) Liabilities to meet award of arbitration or for compliance of the order or 49 decree of a court of law;*

*(ii) Change in law or compliance of any existing law;*

*(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*

*(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;*

*(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*

*(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*

*(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal/lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of 50 technology, up-gradation of capacity for the technical reason such as increase in fault level;*

*(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;*

*(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulators with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system;*

*(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal*



generating station as result of circumstances not within the control of the generating station:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite based station shall be met out of compensation allowance:

Provided also that if any expenditure has been claimed under Renovation and Modernization (R&M), repairs and maintenance under (O&M) expenses and Compensation Allowance, same expenditure cannot be claimed under this regulation."

11. The projected additional capital expenditure claimed by the petitioner for the period 2014-19 is as under:

Sl. No	Package Name	Regulation	(₹ in lakh)					
			Projected additional capital expenditure					
			2014-15	2015-16	2016-17	2017-18	2018-19	Total
1	Work related to Ash pond/Ash handling system	14(3)(iv)	7183.00	10880.00	4352.00	2500.00	5800.00	30715.00
2	Interlocking at Exchange yard	14(3)(x)	379.00	0.00	0.00	0.00	0.00	379.00
3	Replacement of MS pipes with cast basalt pipelines and associated works	14(3)(ii)	0.00	1960.00	1866.00	0.00	0.00	3826.00
4	Installation of IP security cameras and related works towards plant safety and security	14(3)(iii)	0.00	300	0.00	0.00	0.00	300.00
5	Up-gradation of ESP of stage-II	14(3)(ii)	0.00	0.00	3750.00	3750.00	3750.00	11250.00
6	Providing fire detection & protection system in stage-II CHP	14(3)(ii) & 14(3)(iii)	0.00	0.00	159.00	0.00	0.00	159.00
7	3.5 KM MGR to Kaniha mine Signalling & Telecommunication	14(3)(x)	0.00	0.00	434.00	0.00	0.00	434.00
8	Land for left out portion of MGR	14(3)(x)	0.00	0.00	81.00	0.00	0.00	81.00
9	Wagon Tippers and associated works	14(3)(x)	0.00	0.00	11250.00	1250.00	0.00	12500.00
10	Providing 5th pump in Ash slurry series	14(3)(iv)	0.00	0.00	0.00	200.00	400.00	600.00
11	Dry Ash transportation system	14(3)(ii)	0.00	0.00	0.00	0.00	10000.00	10000.00



12	12.5 KM MGR to Kaniha mine	14(3)(x)	0.00	0.00	0.00	0.00	3769.00	3769.00
	<b>Total</b>		<b>7562.00</b>	<b>13140.00</b>	<b>21892.00</b>	<b>7700.00</b>	<b>23719.00</b>	<b>74013.00</b>

12. The petitioner has claimed total projected additional capital expenditure of ₹ 74013.00 lakh for the period 2014-19 which comprises of ₹ 30715.00 lakh towards Ash Pond/ Ash handling system, ₹11250.00 lakh for up-gradation of ESP, ₹ 12500.00 lakh towards Wagon Tiplers, ₹1000.00 lakh towards Dry ash transportation system and the balance towards various other works i.e. Replacement of MS pipes with cast basalt, 12.5 km MGR to Kaniha mine, Interlocking at exchange yard etc. The projected additional capital expenditure claimed by the petitioner is examined in the subsequent paragraphs:

#### **Regulation 14 (3) (ii)**

##### **Replacement of MS pipes with cast basalt pipelines and associated works**

13. The petitioner has claimed projected additional capital expenditure of ₹1960.00 lakh in 2015-16 and ₹1866.00 lakh in 2016-17 towards Replacement of MS pipes with Cast Basalt pipelines and associated works under this head. In justification of the same, the petitioner has submitted that as per letter dated 12.7.2011 and 13.1.2012 of the Orissa State Pollution Control Board (OSPCB), the existing MS pipes are to be replaced with Cast Basalt pipes in order to avoid leakage and to protect the surroundings. Accordingly, the petitioner has prayed that the said expenditure may be allowed.

14. The respondent, KSEB has submitted that the additional capital claimed by the petitioner may be allowed in terms of the Regulation 14(3) of 2014 Tariff Regulations. The respondent, TANGEDCO has submitted that the expenditure claimed by the petitioner may be met from the O&M expenses allowed to the generating station. The respondent, GRIDCO has submitted that though the expenditure claimed by the petitioner is in accordance with the Comprehensive Environmental Pollution



Index (CEPI) action plan, no documentary evidence in respect of the same has been filed. It has also submitted that no additional capital may be allowed in the absence of the consent order and the application filed by the petitioner before OSPCB.

15. In compliance with the directions of the Commission vide ROP of the hearing dated 24.5.2016, the petitioner has submitted that in terms of Regulation 3(9)(d) of the 2014 Tariff Regulations, Change-in-law includes change by any competent authority in any condition or covenant of any consent and therefore the directions of OSPCB in its letters for controlling air and water pollution falls within the scope of change in law and the same is required to be complied for continuing the operation. The petitioner has further submitted that in terms of the order dated 26.8.2015, it has capitalized an amount of ₹1876.00 lakh in 2013-14. The petitioner has also submitted that it has claimed an amount of ₹1960.00 lakh in 2015-16 for Procurement and Replacement of 450 NB cast basalt pipe including construction of pedestal for support of basalt pipe and ₹1866.00 lakh in 2016-17 for Procurement of 450 NB Cast basalt pipe. It has further submitted that the gross block of MS pipes during the years 2015-16 and 2016-17 is ₹286.00 lakh and ₹349.56 lakh respectively.

16. We have examined the matter. It is noticed that OSPCB vide letter dated 12.7.2011 has granted consent to the petitioner to operate the units of generating station, subject to compliance of certain terms and conditions till 31.8.2011. Subsequently, OSPCB vide letter dated 13.1.2012 had extended the validity of consent order up to 31.3.2012 within which time the generating station was required to comply with the conditions in the consent order to keep the same valid. It is further noticed that the consent order relates to product quality, specific outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions.





17. Considering the fact that the petitioner is required to comply with the terms and conditions for Prevention and Control of Air and Water Pollution in terms of the provisions of Air (Prevention and Control of Pollution) Act and Water (Prevention and Control of Pollution) Act and the directions contained in the letters dated 12.7.2011 and 13.1.2012, we are inclined to allow the additional capital expenditure of ₹1674.00 lakh (₹1960.00-₹286.00 lakh) and ₹1516.44 lakh (₹1866.00-₹349.56 lakh) for the years 2015-16 and 2016-17 respectively after adjustment of the gross block of MS pipes. The petitioner is however directed to submit the valid consent order of OSPCB at the time of truing up of tariff of the generating station in terms of Regulation 8 of the 2014 Tariff Regulations.

#### **Up gradation of ESP**

18. The petitioner has claimed projected additional capital expenditure of ₹3750.00 lakh each for the years 2016-17, 2017-18 and 2018-19 as regards to Up-gradation of ESP. In justification of the same, the petitioner has submitted that the emission of particulate matter from ESP stacks are required to be reduced to 50 mg/Nm<sup>3</sup> from 100mg/Nm<sup>3</sup> for which up gradation is required in compliance with the directions of OSPCB letters dated 12.7.2011 and 13.1.2012 in line with Comprehensive Environmental Pollution Index (CEPI). Accordingly, the petitioner has prayed for allowing the said expenditure under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

19. The respondent, TANGEDCO has submitted that the claim of the petitioner may be disallowed in the absence of non-submission of management certificate for approval of incurring the expenditure for the period 2014-19 and also since the petitioner has claimed compensation allowance, the claim may be rejected. The respondent, GRIDCO has submitted that the claim for additional amount of ₹11250.00 lakh (₹3750.00 lakh each for the years 2016-17, 2017-18 and 2018-19) proposed for up-gradation of ESP cannot be considered due to lack of documentation on the part of



the petitioner. In response, the petitioner has submitted that the projected additional expenditure claimed is for compliance with the directions of the OSPCB in order to meet the stringent emission norms of 50mg/Nm<sup>3</sup> specified.

20. We have examined the matter. It is observed that the area around the generating station has been identified as critically polluted and therefore necessary steps are required to be taken by all stakeholders in order to implement the CEPI action plan. Accordingly, in compliance with the CEPI action plan notified by OSPCB during the year 2012, long term works of up-gradation of ESP has been proposed to be undertaken by the petitioner during the period 2016-19. Though the petitioner was directed vide ROP of the hearing dated 24.5.2016 to submit details of the emission levels of the generating station and the expected level of emission after Up-gradation of ESP, it has not furnished the same. However, considering the fact that the expenditure is incurred in compliance with the statutory guidelines of OSPCB, we are inclined to allow the projected additional capital expenditure of ₹ 3750.00 lakh each for the years 2016-17, 2017-18 and 2018-19 for Up-gradation of ESP of Stage-II under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The petitioner is however directed to furnish the actual emission level of ESP during the last five years, categorically for each pass and each unit of the generating station at the time of truing up in the terms of Regulation 8 of the 2014 Tariff Regulations.

#### **Dry Ash Transportation System**

21. The petitioner has claimed additional capital expenditure of ₹10000.00 lakh in 2018-19 towards Dry Ash Transportation System (DATS) for evacuation of fly ash as per Notification dated 3.11.2009 of the Ministry of Environment & Forests (MoEF), GOI as regards utilization of dry ash. In justification of the same, the petitioner has submitted that generating station is required to achieve 100% ash utilization in stipulated time frame in compliance to the said notification. It has further submitted



that Augmentation of Dry Ash Evacuation System (DAES) is required for ash utilization as the same is not sufficient to meet the requirement of the generating station. Accordingly, the petitioner has prayed that the expenditure claimed under this head may be allowed.

22. The respondent, TANGEDCO has referred to provision 1(1) and 1(6) of the said Notification dated 3.11.2009 and has submitted that the generating station should utilize the amount collected towards infrastructure facilities until it achieves 100% level. It has also stated that claim of the petitioner is not in line with the relevant provisions of the notification and therefore the expenditure claimed may not be allowed.

23. In response to the directions of the Commission vide ROP of the hearing dated 24.5.2016, the petitioner has submitted that the generating station was envisaged to commence operation during the fag end of the year 1990 and dry ash transportation system of the generating station for 25% of capacity was proposed to be installed. Accordingly, it has submitted that as per the original scope of work, dry ash transportation system of 50% capacity was available for the two units (i.e. 25% of station capacity) for the generating station. The petitioner has further pointed out that OSPCB in its letter dated 12.7.2011 has directed that “...*the industry shall plan and implement appropriate actions to comply with the provisions of Fly Ash Notification 2009.....*”.Accordingly, the petitioner has prayed that additional capital expenditure claimed under this head may be allowed.

24. We have examined the matter.It is observed that the notification dated 3.11.2009 of MoEF, GOI provides that all coal/lignite based thermal stations would be free to sell the fly ash to user agencies subject to certain conditionsandthe amount collected from sale of fly ash or fly ash based products should be kept in a separate account head and shall be utilized only for development of infrastructure or facilities, promotion and



facilitation activities for use of fly ash until 100% fly ash utilization level is achieved. Since the expenditure is required for compliance with the guidelines with MoEF guidelines dated 3.11.2009 and is for achieving 100% ash utilization targets as per the said notification, we are inclined to allow the prayer of the petitioner. Moreover, the DATS shall also help in reducing the burden of ash disposal in the ash dyke area which will reduce the regular or time to time capitalization of expenditure for raising of ash dyke and environmental ground water pollution. In this background and since the expenditure is for compliance with the existing norms under the MoEF notification, the additional capital expenditure for DATS is allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations. However, the petitioner is directed to furnish the details of revenue earned from sale of fly ash (excluding transportation charges if any paid by the petitioner) and a copy of account duly certified by the auditor, which is mandatorily have to be maintained by the petitioner as per the said notification and the same shall be considered at the time of truing up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations.

#### **Fire detection and Protection system**

25. The petitioner has claimed projected additional capital expenditure of ₹ 159.00 lakh in 2016-17 towards fire detection and protection system. In justification of the same, the petitioner has submitted that fire detection and protection system is required to be installed for safety and security in compliance with the Central Electricity Authority (Technical standards for construction of Electric plants and lines), Regulations, 2010 and the Central Electricity Authority (Safety Requirements for Construction, Operation and Maintenance of Electrical Plants and Electrical Lines) Regulations, 2011 (hereinafter called the "CEA Regulations 2010 and 2011"). Accordingly, the petitioner has prayed that the said additional capital expenditure may be allowed.



26. The respondents, TANGEDCO has submitted that the claim of the petitioner under this head may be met out of Compensation Allowance provided to the generating station under Regulation 17(2) of the 2014 Tariff Regulations. It has further submitted that no details have been furnished by the petitioner as regards to the functioning of existing fire detection devices installed in the generating station. The respondent, GRIDCO has submitted that the said CEA Regulations do not apply to the generating station as they provide technical standards for construction of electrical plants and not for already constructed ones. In response, the petitioner has clarified that the above mentioned Regulations are applicable to both new as well as existing power plants and hence the expenditure may be allowed.

27. We have examined the matter. It is observed that similar claim of the petitioner under Regulations 14(3)(ii) and 14(3)(iii) of the 2014 Tariff Regulations for Augmentation of Fire fighting system was considered by the Commission in Petition No. 270/GT/2014 (tariff of Simhadri STPS for 2014-19) and the Commission by order dated 27.6.2016 had rejected the claim of the petitioner. On a review filed by the petitioner (in Petition No.36/RP/2016), the Commission by order dated 27.1.2017 allowed the prayer of the petitioner under Regulation 14(3)(iii) of the 2014 Tariff Regulations. The petitioner in this petition has claimed the expenditure due to Change in law/compliance with existing law under Regulation 14(3)(ii) and for Safety and security of the plant under Regulation 14(3)(iii) of the 2014 Tariff Regulations in terms of the CEA Regulations 2010 and 2011. Though the prayer of the petitioner in the review petition was not allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations, the Commission is of the view that the matter needs to be examined in the larger perspective i.e whether the CEA Regulations 2010 and 2011 are applicable to the existing generating stations and if so, whether the implementation of the augmentation of fire fighting system should be considered as Change in law and is



required for Safety and security of the plant in terms of Regulation 14(3)(ii) and (iii) of the 2014 Tariff Regulations. Accordingly, the Commission has decided to consult the CEA in this regard. Therefore, the Staff of the Commission is directed to refer the matter to CEA for necessary clarification. Pending clarification in the matter, the claim of the petitioner has not been decided in this order. If on the basis of the report of the CEA, the Commission comes to a decision to allow the expenditure for augmentation of fire fighting/protection system under Change in law and for Safety and security of the plant, and in that event, the claim of the petitioner shall be considered at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations. The petitioner shall also place on record the confirmation that the expenditure on augmentation of fire fighting system/protection system is in compliance with the TAC guidelines and the discount, if any, received from the Insurance companies at the time of truing-up.

#### **Regulation 14 (3) (iii)**

#### **Installation of IP security cameras and related works towards plant safety and security**

28. The petitioner has claimed additional capital expenditure of ₹300.00 lakh in 2015-16 for Installation of IP security cameras and related works. In justification of the same, the petitioner has submitted that Ministry of Home Affairs (MoHA), GOI vide letter dated 3.12.2011 has directed for installation of IP security cameras at various locations of the generating station in view of its safety and security concerns and hence it may be allowed.

29. The respondent, TANGEDCO has submitted that the said expenditure is minor in nature and can be met from the Compensation Allowance admissible to the generating station. It has further submitted that the Commission vide order dated 20.5.2015 in Petition No. 260/GT/2013 had disallowed the similar claim of the petitioner in respect of Dadri stage-I GPS of the petitioner. Accordingly, the





respondent has prayed that the expenditure of ₹300.00 lakh in 2015-16 may be disallowed. In response, the petitioner has clarified that the projected expenditure has been claimed as per the directions of CISF.

30. We have examined the matter. It is noticed that Regulation 14(3)(iii) of the 2014 Tariff Regulations provides for considering the expenditure for security or safety of the plant based on the advice or direction of statutory authorities responsible for national security/ internal security. Keeping in view the present security scenario of the country and in order to modernize the security system and installation of modern electronic gadget, Ministry of Home Affairs, GOI vide letter dated 3.12.2011 has directed for installation of IP security cameras at various locations of the generating station and the installation of cameras are for internal security and safety of the plant from outside agencies/ elements. In this background, the additional capital expenditure of ₹300.00 lakh in 2015-16 is allowed under Regulation 14(3)(iii) of the 2014 Tariff Regulations.

**Regulation 14 (3) (iv)**

**Ash Pond/ Ash handling Work**

31. The petitioner has claimed additional capital expenditure of ₹7183.00 lakh in 2014-15, ₹10880.00 lakh in 2015-16, ₹4352.00 lakh in 2016-17, ₹2500.00 lakh in 2017-18 and ₹5800.00 lakh in 2018-19 for works of Ash dyke raising and associated works. In justification of the same, the petitioner has submitted that the projected additional capital expenditure is for planned works relating to Ash handling and Ash pond related works which are of continuous nature during the operational life of the generating station and is covered within the original scope of the project. Accordingly, the petitioner has prayed that the additional capital expenditure claimed may be allowed.

32. The respondent, TANGEDCO has submitted that in terms of the MoEF, GOI Notification dated 3.11.2009 the expenditure on account of evacuation of ash is to be



met by the revenue generated from the sale of Ash. Accordingly, it has submitted that the petitioner may be directed to provide the quantum of ash generated and the quantum sold for prudence check of the Commission. In response, the petitioner has clarified that no revenue is generated from sale of fly ash in the generating station. The respondent, GRIDCO has submitted that the work contemplated by the petitioner in raising ash dyke for ash disposal, ash pond work is not a deferred work but a continuous process during the entire operational life time of the generating station and hence it is an O&M expense for which an increased work is provided under the 2014 Tariff Regulations. It has further submitted that no documentary evidence has been submitted by the petitioner for claiming the said expenditure.

33. The Commission, vide ROP of the hearing dated 24.5.2016 had directed the petitioner to file additional information with regard to the additional capital expenditure of ₹307.15 crore during the period 2014-19 towards work related to Ash pond and in response the petitioner has submitted that the proposed expenditure of ₹307.15 crore is for 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> & 7<sup>th</sup> raising of Lagoon 1 and Lagoon 2 along with peripheral filling. It has further submitted that 40% of ash (approx.) is utilized at the generating station as a whole and dyke raising constitute a major part of ash utilization (95%) and the balance 5% is utilized in brick industries including ash brick plant for Talcher STPS and asbestos industries. It has further clarified that a revenue of ₹0.046 crore has been generated from sale of ash since the COD of the generating station till 31.3.2014.

34. The matter has been examined. It is observed from the submissions of the petitioner that the projected expenditure towards Ash dyke raising is for planned works related to ash pond/ ash handling system which is of continuous nature during the operational life of generating station. Moreover, the works for which the expenditure has been claimed is as per approved scheme under the original scope of work. It is



observed that the petitioner had capitalized an expenditure of ₹151.18 crore towards Ash dyke works for the period from 1.8.2005 to 31.3.2014 and in this background the claim of the petitioner for the period 2014-19 appears to be on higher side. In the absence of comparison of the cost with similar work undertaken by the petitioner, the reasonableness of the estimated cost from the break-up of proposed ash dyke works during the period 2014-19 as submitted by the petitioner, cannot be worked out. Moreover, when the capitalization of ₹10000.00 lakh for dry Fly Ash extraction system has been proposed in 2018-19, the reason for capitalization of the said amount for 7<sup>th</sup> raising in 2018-19 is also not understood, more so, when a major portion of ash (80%approx.) generated has been disposed of in dry form. In this background, we are inclined to restrict the proposed additional capital expenditure to ₹115.98 crore which was allowed during the period 2009-14, with an annual escalation of 6.35% each year during the period 2014-19. This works out to ₹15578.68 lakh. Considering the capitalization submitted by the petitioner, this amount is pro-rated each year and accordingly the same works out to ₹3689.99 lakh in 2014-15, ₹5589.19 lakh in 2015-16, ₹2235.68 lakh in 2016-17, ₹1284.28 lakh in 2017-18 and ₹2979.54 lakh in 2018-19. The petitioner is however directed to submit the details of work orders along with complete scope of work of ash handling system, estimated cost, and actual cost incurred along with documentary proof at the time of truing up exercise in terms of Regulation 8 of the 2014 Tariff Regulations. The petitioner is also directed to furnish a certificate to the effect that Ash pond & Ash handling related works executed pertains to generating station only and no part of work is related to Stage-I.

#### **5<sup>th</sup> pump in Ash slurry series**

35. The petitioner has claimed additional capital expenditure of ₹200.00 lakh in 2017-18 and ₹400.00 lakh in 2018-19 under Regulation 14(3)(iv) towards provision for 5th pump in Ash Slurry Headers. In justification of the same, the petitioner has submitted



that a provision for 5<sup>th</sup> pump in Ash slurry series was kept in the original scope of work, which is required to be provided eventually with the planned raising of Ash dykes.

36. The respondent, TANGEDCO has submitted that the claim of the petitioner may be negated as the details regarding volume of ash generated and quantity of ash disposed by the existing pumps has not been submitted by the petitioner. In response, the petitioner has submitted that the 5<sup>th</sup> pump in Ash Slurry series was not commissioned earlier in order to avoid tariff burden on the beneficiaries.

37. The matter has been examined. It is observed that the 5<sup>th</sup> pump in Ash slurry series is required to handle the increased pumping head of ash slurry pumps consequent to raising of ash dykes and is as per approved scheme within the original scope of work relating to ash pond or ash handling system. The work relating to ash dyke raising and associated work of ash handling system form part of the original approved scope of work and are normally undertaken in stages as and when required during the life of the generating station. In this background, the expenditure incurred under this head is allowed under Regulation 14(3)(iv) of the 2014 Tariff Regulations.

#### **Regulation 14 (3) (x)**

##### **Interlocking at Exchange yard**

38. The petitioner has claimed additional capital expenditure of ₹379.00 lakh in 2014-15 in respect of the work of Interlocking at exchange yard. In justification of the same, the petitioner has submitted that the execution of the work got delayed by East Coast Railways even though the same was approved by the Commission in order dated 28.5.2013 in Petition No. 269/2009 in 2011-12. It has further submitted that the expenditure form part of the ongoing works and is required for safety of rakes and for reduction of time to increase coal receipt without the need of banking of Locos and hence the said expenditure claimed may be allowed to be capitalized during the period 2014-19.



39. The respondent, TANGEDCO has submitted that the claim under this head ought to be disallowed as the expenditure allowed earlier has not been utilized judiciously.

40. The matter has been examined. It is observed that the said work form part of the original scope of work and the Commission vide order dated 28.5.2013 in Petition No. 269/2009 had approved the capitalization of this work in 2011-12. In this background and considering the fact that the expenditure is linked to MGR system and is required for safety of railway rakes, reduction of time to increase coal receipt without the need of banking of locos, we are inclined to allow the expenditure of ₹ 379.00 lakh claimed in 2014-15 under this head.

### **3.5 Km MGR to Kaniha mine, Signalling and Telecommunication**

41. The petitioner has claimed additional capital expenditure of ₹434.00 lakh towards Signalling and Telecommunication at 3.5 km MGR to Kaniha Mines. In justification of the same, the petitioner has submitted that works related to 3.5 Km MGR to Kaniha mines was allowed by the Commission in order dated 28.5.2013 in Petition No. 269/2009 during the period 2009-14 under Regulations 9(2)(vii).

42. The respondent, TANGEDCO has submitted that the petitioner has not furnished any details related to 3.5 km MGR to Kaniha Mines and that he may be directed to furnish the same. In response of the above, the petitioner has clarified that the auditor's certificate for actual capital expenditure towards the said work for the period 2009-14 has been submitted.

43. The matter has been examined. The Commission in order dated 26.8.2015 in Petition No. 320/GT/2013 while allowing the claim of the petitioner for 3.5 Km MGR-Kaniha Mines had observed as under:-

*"It is observed that the MGR package was awarded in 2004 at a value of ₹ 767.00 lakh and there was substantial delay in the development of Kaniha mines. Accordingly, the work could be started only in the year 2011 matching with the*



*schedule for development of Kaniha mines. Further, due to MORTH specification for re-grading of road subsequent to the declaration of captive road of NTPC as National Highway by NHAI, there has been additional work like re-grading of road up to a distance of 1 Km, widening of road, construction of culvert in the captive road declared as National Highway. Thus, due to the high inflationary period and as the development of National Highway as per the MORTH specification did not emerge at the time of original projection; there is difference between the projected and the actual expenditure. Therefore, the claim of the petitioner is justified. In view of this, the actual expenditure of ₹2355.00 lakh in 2012-13 and ₹378.00 lakh in 2013-14 is in order and is allowed under Regulation 9(2) (vii) of the 2009 Tariff Regulation.”*

44. It is noticed that the work for MGR lines to Kaniha Mines has got delayed due to delay in the development of Kaniha mines and accordingly the signalling and telecommunication activities could not be started by the petitioner. It is observed that the work of signalling and telecommunication is within the original scope of work of the project and forms an integral part of MGR system. Accordingly, we are inclined to allow the additional capital expenditure of ₹434.00 lakh in 2016-17 for the said work.

#### **Land for left out portion of MGR and 12.5 km MGR to Kaniha Mines**

45. The petitioner has claimed additional capital expenditure of ₹81.00 lakh in 2016-17 towards Land for left out portion of MGR and ₹3769.00 lakh towards work of 12.5 km MGR to Kaniha Mines. In justification of the same, the petitioner has submitted that the expenditure was allowed by the Commission in order dated 28.5.2013 in Petition No. 269/2009 during the period 2009-14. It has also submitted that the work could not be started due to delay in the process of land acquisition, the same being private land and the Govt. of Orissa is yet to disburse the amount to the land owners. Accordingly, the petitioner has prayed for grant of the said expenditure.

46. The matter has been examined. The Commission vide order dated 28.5.2013 in Petition No. 269/2009 had allowed an expenditure of ₹ 600.00 lakh and ₹3769.00 lakh towards Land for left out portion of MGR and 12.5 km MGR to Kaniha mines respectively during the period 2009-14. Thereafter the Commission vide order dated 26.8.2015 in Petition No. 320/GT/2013 had allowed the actual additional capital expenditure of ₹60.00 lakh in 2011-12, ₹9.00 lakh in 2012-13 and ₹451.00 lakh in





2013-14 (i.e. total ₹520.00 lakh) during the period 2009-14 out of the expenditure towards Land for left out portion of MGR. Since, the total amount claimed by the petitioner under this headform part of the expenditure allowed and the work has been delayed due to delay in land acquisition required for MGR system by Govt. of Odisha, we are inclined to allow the additional capital expenditure claimed under this head.

**Wagon Tiplers and associated works**

47. The petitioner has claimed additional capital expenditure of ₹11250.00 lakh in 2016-17 and ₹1250.00 lakh in 2017-18 towards Wagon Tiplers and associated works. In justification of the same, the petitioner has submitted that the coal field is not able to meet the supply of coal up to FSA quantity and therefore, the generating station is dependent on Railways through BOBR wagons for extra coal. It has also submitted that Railways is planning to phase out BOBR rakes and use only BOXN wagon rakes. Accordingly, it has prayed that the said expenditure may be allowed in order to carry out the works in environment friendly manner.

48. The respondent, TANGEDCO had submitted that the arrangement of fuel is generator's responsibility and that the generating station can meet the expenditure from O&M expenses allowed to the generating station. In response, the petitioner has submitted that appropriate steps to deal with the problems of the fuel shortage has been taken and due to delay in unloading BOXN type wagons, the total receipt of coal reduces in the absence of wagon tippler.

49. The matter has been examined. Though the petitioner has submitted that the Railways has been planning to phase out BOBR rakes, no documentary evidence has been furnished by the petitioner with regards to the same. It has also submitted that it has been receiving only 14.5 MTPA in place of 17.5 MTPA from MCL mines and the remaining coal is being met by importing coal as well as other domestic sources and Wagon tipplers are required to receive coal through rakes of Indian Railways which



are in BOX-N types of wagons. However, from the data furnished by the petitioner considering 85% Availability, Station Heat rate of 2375 kCal/kWh and as fired GCV of coal of 3127.66 kCal/kg (in the absence of as received GCV) in terms of the 2014 Tariff Regulations, the annual requirement of coal for the generating station is found to be 11.29 MTPA. Even if 100% availability is considered, the annual coal requirement of the generating station would be 13.28 MTPA (approx.) which is lower than 14.5 MTPA as submitted by the petitioner. In view of this, we are of the considered view that the petitioner has not made out a fit case to allow the additional capital expenditure towards Wagon Tiplers and associated works. Accordingly, the claim of the petitioner under this head is not allowed.

50. Based on the above discussions, the projected additional capital expenditure allowed during the period 2014-19 is summarized as under:

Sl. No		Projected Capital expenditure					
		2014-15	2015-16	2016-17	2017-18	2018-19	Total
1	Work related to Ash pond/Ash handling system	3689.99	5589.19	2235.68	1284.28	2979.54	15778.68
2	Interlocking at Exchange yard	379.00	0.00	0.00	0.00	0.00	379.00
3	Replacement of MS pipes with cast basalt pipelines and associated works	0.00	1674.00	1516.44	0.00	0.00	3190.44
4	Installation of IP security cameras and related works towards plant safety and security	0.00	300	0.00	0.00	0.00	300.00
5	Up gradation of ESP of stage-II	0.00	0.00	3750.00	3750.00	3750.00	11250.00
6	Providing fire detection & protection system in stage-II CHP	0.00	0.00	0.00	0.00	0.00	0.00
7	3.5 KM MGR to Kaniha mine Signalling & Telecommunication	0.00	0.00	434.00	0.00	0.00	434.00
8	Land for left out portion of MGR	0.00	0.00	81.00	0.00	0.00	81.00
9	Wagon Tiplers and associated works	0.00	0.00	0.00	0.00	0.00	0.00



10	Providing 5th pump in Ash slurry series	0.00	0.00	0.00	200.00	400.00	600.00
11	Dry Ash transportation system	0.00	0.00	0.00	0.00	10000.00	10000.00
12	12.5 KM MGR to Kaniha mine	0.00	0.00	0.00	0.00	3769.00	3769.00
	<b>Total</b>	<b>4068.99</b>	<b>7563.19</b>	<b>8017.12</b>	<b>5234.28</b>	<b>20898.54</b>	<b>45782.12</b>

51. Accordingly, the capital cost allowed for the purpose of tariff is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	528943.95	533012.94	5400576.13	548593.25	553827.53
Add: Addition during the year/ period	4068.99	7563.19	8017.12	5234.28	20898.54
Less: De- capitalization during the year/ period	0.00	0.00	0.00	0.00	0.00
Less: Reversal during the year/ period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/ period	0.00	0.00	0.00	0.00	0.00
<b>Closing Capital Cost</b>	<b>533012.94</b>	<b>540576.13</b>	<b>548593.25</b>	<b>553827.53</b>	<b>574726.07</b>
<b>Average capital Cost</b>	<b>530978.44</b>	<b>536794.53</b>	<b>544584.69</b>	<b>551210.39</b>	<b>564276.80</b>

### Debt- Equity ratio

52. Regulation 19 of the 2014 Tariff Regulations provides that-

*(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that:*

*(i) where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*

*(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*

*(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.*

*Explanation - The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

*(2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.*



(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

53. Accordingly, gross normative loan and equity amounting to ₹370260.76 lakh and ₹158683.18 lakh respectively as on 31.3.2014 as considered in order dated 26.8.2015 and corrigendum order dated 16.10.2015 has been considered as gross normative loan and equity as on 1.4.2014. Further the additional capital expenditure approved above has been allocated in debt- equity ratio of 70:30.

### **Return on Equity**

54. Regulation 24 of the 2014 Tariff Regulations provides as under:

“(24) Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of river hydro generating stations, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

(ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

(iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

(iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:



(v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

(vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

55. Regulation 25 of the 2014 Tariff Regulations provides that:

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate".

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax(MAT), "t" shall be considered as MAT rate including surcharge and cess.

Illustration:

(i) In case of the generating company or the transmission licensee paying minimum Alternate tax (MAT) @ 20.96% including surcharge and cess:

Rate of return on equity =  $15.50 / (1 - 0.2096) = 19.610\%$

(ii) In case of generating company or the transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for FY 2014-15 is ₹ 1000 Cr

(b) Estimated Advance tax for the year on above is ₹ 240 Cr

(c) Effective tax rate for the year 2014-15 =  $\frac{\text{₹ 240 Cr}}{\text{₹ 1000 Cr}} = 24\%$

(d) Rate of Return on Equity =  $15.50 / (1 - 0.24) = 20.395\%$

(iii) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under- recovery or over- recovery of grossed up rate on return on equity after trueing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/ DICs as the case may be on year to year basis.



56. The petitioner has claimed Return on Equity considering the base rate of 15.5% and effective tax rate of 23.939%. However, in terms of order dated 27.6.2016 in Petition No. 270/GT/2014, the effective tax Rate (MAT) of 20.961% has been considered for 2014-15 and 21.342% from the year 2015-16 onwards till the year 2018-19 for the purpose of grossing up of base rate of 15.5%. Based on the above, the rate of ROE works out to 19.610% for 2014-15 and 19.705% for 2015-16 onwards. Accordingly, return on equity is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Normative Equity- Opening	158683.18	159903.88	162172.84	164577.97	166148.26
Addition to equity on account of additional capitalization	1220.70	2268.96	2405.14	1570.28	6269.56
Normative Equity- Closing	159903.88	162172.84	164577.97	166148.26	172417.82
Average Normative Equity	159293.53	161038.36	163375.41	165363.12	169283.04
Rate of return on Equity (Base rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective tax Rate	20.961%	21.342%	21.342%	21.342%	21.342%
Rate of Return on Equity (pre tax)	19.610%	19.705%	19.705%	19.705%	19.705%
<b>Return on Equity ( Pre Tax)- Annualized</b>	31237.46	31732.61	32193.12	32584.80	33357.22

### Interest on Loan

57. Regulation 26 of the 2014 Tariff Regulations provides as under:

*“26. Interest on loan capital: The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*

*(1) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*

*(2) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalization of such asset.*

*(3) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

*(4) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*





*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

*(5) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

*(6) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.*

*(7) The changes to the terms and conditions of the loans shall be reflected from the date of such refinancing.*

*(8) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:*

*Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan"*

58. The interest on loan has been worked out as mentioned below:

- i) As stated above, gross normative loan amounting to ₹ 370260.76 lakh has been considered as on 1.4.2014
- ii) Cumulative repayment amounting to ₹ 329591.39 lakh as on 31.3.2014 as considered in order dated 26.8.2015 has been considered as on 1.4.2014.
- iii) Accordingly, the net normative opening loan as on 1.4.2014 works out to ₹ 40669.38 lakh
- iv) Addition to normative loan on account of admitted additional capital expenditure has been considered.
- v) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2014-19.
- vi) In line with the provisions of the above regulation, the weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the generating station. In case of loans carrying floating rate of



interest, the rate of interest as furnished by the petitioner is considered for the purpose of tariff.

59. The necessary calculation for Interest on loan is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative loan-Opening	370260.76	373109.06	378403.29	384015.27	387679.27
Cumulative repayment of loan up to previous year/period	329591.39	357097.20	378403.29	384015.27	387679.27
Net Normative Loan-Opening	40669.38	16011.85	0.00	0.00	0.00
Addition to Normative loan on account of additional capitalization	2848.29	5294.23	5611.98	3664.00	14628.98
Repayment of loan during the year	27505.82	21306.09	5611.98	3664.00	10319.56
Net Loan closing	16011.85	0.00	0.00	0.00	4309.42
Average loan	28340.62	8005.93	0.00	0.00	2154.71
Weighted average Rate of Interest on Loan	8.1752%	8.1574%	8.1731%	8.2561%	8.4013%
<b>Interest on Loan</b>	<b>2316.91</b>	<b>653.07</b>	<b>0.00</b>	<b>0.00</b>	<b>181.02</b>

## Depreciation

60. Regulation 27 of the 2014 Tariff Regulations provides as under:

*"27.(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

*(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis*

*(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*

*Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*



*Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*

*(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

*(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:*

*Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets*

*(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2014 from the gross depreciable value of the assets.*

*(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.*

*(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."*

61. Accordingly, the cumulative depreciation of ₹297792.98 lakh as on 31.3.2014 as considered in order dated 26.8.2015 and corrigendum order dated 16.10.2015 has been retained for the purpose of tariff. Further, the value of freehold land, if any, included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Accordingly, the balance depreciable value for the year 2014-15 works out to ₹179358.16 lakh. Since as on 1.4.2014, the used life of the generating station (i.e 9.71 years) is less than 12 years from the effective station COD of 16.7.2004, depreciation has been calculated by applying weighted average rate of depreciation for the period 2014-17 and for the period 2017-19 depreciation has been calculated by spreading off the balance depreciable value over the remaining useful life of the generating station. The petitioner has claimed depreciation considering weighted average rate of depreciation of 5.1802% for the period 2014-17, and



accordingly the same has been considered. Depreciation has been computed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Average Capital Cost	530978.44	536794.53	544584.69	551210.39	564276.80
Freehold land included above	810.51	810.51	810.51	810.51	810.51
Depreciable value @ 90%	477151.14	482385.62	489396.76	495359.89	507119.66
Remaining useful life at the beginning of the year	15.29	14.29	13.29	12.29	11.29
Balance depreciable value	179358.16	157086.83	136290.87	114043.35	116525.01
<b>Depreciation (Annualized)</b>	<b>27505.82</b>	<b>27807.10</b>	<b>28210.65</b>	<b>9278.10</b>	<b>10319.56</b>
Cumulative depreciation at the end	325298.79	353105.90	381316.54	390594.65	400914.21

### Operational Norms

62. The operational norms in respect of the generating station considered by the petitioner are as under:

Target Availability (%)	83
Heat Rate (kcal/kwh)	2375.0
Auxiliary Power Consumption (%)	5.75
Specific Oil Consumption (ml/kwh)	0.50

### Target Availability

63. The Target Availability specified under the 2014 Tariff Regulations is as follows:

*“(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) &(e)- 85%.*

*Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.*

*The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014.”*

64. The petitioner has considered the Target Availability of 83% during the period 2014-19. The Commission due to shortage of domestic coal supply has relaxed Target Availability to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. In terms of the above Regulation, the Target Availability of 83% has been allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 & 2018-19 as per Regulation 36(A) of 2014 Tariff Regulations.



### Heat Rate (kcal/kwh)

65. Regulation 36(C)(a) of 2014 Tariff Regulations provides the Gross Station Heat Rate of 2375 kCal/kWh for existing coal based thermal generating station of 500 MW sets whose COD is before 1.4.2009. The COD of the generating station is 1.8.2005 and accordingly, the Heat rate considered by the petitioner is as per norms and is allowed.

### Auxiliary Energy Consumption

66. Regulation 36(E)(a) of Tariff Regulations, 2014 provides Auxiliary Energy Consumption of 5.25% for coal based generating station of 500 MW sets with Natural Draft cooling tower. Further, for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%. Accordingly, the Auxiliary Energy Consumption of 5.75% considered by the petitioner is as per norms and is allowed.

### Specific Oil Consumption

67. Regulation 36(D)(a) of Tariff Regulations, 2014 provides Secondary fuel oil Consumption of 0.50 ml/kWh for coal-based generating station. Accordingly, the Secondary fuel oil consumption of 0.5 ml/kWh considered by the petitioner is as per norms and is allowed.

### Operation & Maintenance expenses

68. Regulation 29 (1) (c) of 2014 Tariff Regulation provides the O&M expense norms claimed for the generating station as under:

(₹ in lakh)					
2014-15	2015-16	2016-17	2017-18	2018-19	Total
32000	34020	36160	38440	40860	181480

69. The petitioner has claimed year-wise O&M expenses comprising of Normative O&M and Water Charges. The claim for O&M expenses, including water charges, is



found to be in order in terms of the decision of the Commission in its order dated 6.10.2015 in Petition No. 186/GT/2014 (determination of tariff of Sugan CCPP (1147.5 MW) of Torrent Power Limited for 2014-19). The normative O&M expenses claimed by the petitioner under Regulation 29(1) of the 2014 Tariff Regulations is found to be in order and accordingly allowed.

### **Interest on Working Capital**

70. Regulation 28 of 2014 Tariff Regulations provides that:

- (1) *The working capital shall cover:*
  - (a) *Coal based/ lignite-fired thermal generating stations:*
    - (i) *Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower*
    - (ii) *Cost of coal or lignite and limestone for 30 days for generation corresponding to the normative annual plant availability factor;*
    - (iii) *Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil*
    - (iv) *Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29;*
    - (v) *Receivables equivalent to two months of capacity charges and f for sale of electricity calculated on the normative annual plant availability factor; and*
    - (vi) *Operation and maintenance expenses for one month.*
  - (2) *Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1<sup>st</sup> April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.*
  - (3) *Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency."*

### **Fuel Components and Energy Charges in working capital**

71. The petitioner has claimed the cost for fuel component in working capital based on price and 'as fired' GCV of coal procured and burnt for the preceding three months





of January, 2014, February, 2014 and March, 2014 and secondary fuel oil the preceding three months of January, 2014, February, 2014 and March, 2014, as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for Stock for 15 days	9021.51	9046.23	9021.51	9021.51	9021.51
Cost of Coal for Generation for 30 days	18043.02	18092.45	18043.02	18043.02	18043.02
Cost of Secondary fuel oil 2 months	578.50	580.09	578.50	578.50	578.50

72. The Commission vide ROP of the hearing dated 27.2.2015 in Petition No. 283/GT/2014 had directed the petitioner to submit the GCV of coal on 'as received' basis. In compliance to the directions, the petitioner vide affidavit dated 4.6.2015 has submitted that they did not have suitable infrastructure for measurement of representative GCV on 'as received' basis. In response, the respondent has submitted that the Energy Charge Rate (ECR) of generating station is required to be calculated in accordance with the 2014 Tariff Regulations. It has also submitted that the petitioner may realize that the substantial change in ECR would ultimately impact the Merit order Dispatch (MOD) principle.

73. The issue of "as received" GCV for computation of Energy Charges was challenged by NTPC and other generating companies through writ petition in the High Court of Delhi. The writ petition was heard and Delhi High Court had directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

74. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

*"58. In view of the above discussion, the issues referred by the Hon'ble High Court of Delhi are decided as under:*

*"(a) There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be*



*measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.*

*(b) The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC."*

75. Further, the petitioner has claimed an Energy Charge Rate (ECR) of 160.511 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months. It is observed that the petitioner has not placed on record the GCV of coal on 'as received' basis though the petitioner was statutorily required to furnish such information with effect from 1.4.2014. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydraulic Augur. The petitioner has not submitted the required data regarding measurement of GCV of coal in compliance with the directions contained in the said order dated 25.1.2016. The present petition cannot be kept pending till the petitioner submits the required information. Accordingly, the Commission has decided to compute the energy charges by provisionally taking the GCV of coal on as 'billed basis' and allowing on adjustment for inherent moisture as per the formula given as under:

$$\frac{\text{GCV} \times (1 - \text{TM})}{(1 - \text{IM})}$$

Where: GCV=Gross Calorific value of coal  
TM=Total moisture  
IM= Inherent moisture

76. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for the years 2014-15, 2015-16 and 2016-17 and at 85%



NAPAF for the year 2017-18 & 2018-19 and based on 'as billed' GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January, 2014 to March 2014 and allowed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock-15 Days	6795.37	6795.37	6795.37	6959.11	6959.11
Cost of Coal for Generation-30 Days	13590.74	13590.74	13590.74	13918.22	13918.22
Cost of Secondary fuel oil 2 months	578.50	580.09	578.50	592.44	592.44

77. The GCV of coal as computed above shall be adjusted in the light of GCV of coal on 'as received' basis computed by the petitioner in accordance with the direction in order dated 25.1.2016 in Petition No. 283/GT/2014. The Energy Charge Rate (ECR) based on operational norms under 2014 Tariff Regulation and on 'as billed' GCV of coal for preceding 3 months (January 2014 to March 2014) is worked out as under:

Sl. No.		Unit	2014-19
1	Capacity	MW	2000
2	weighted average Gross Station Heat Rate	Kcal/kWh	2375
3	weighted average Aux. Energy Consumption	%	5.75
4	Weighted average GCV of oil (As fired)	Kcal/lit	9510
5	Weighted average GCV of Coal (As Billed)	Kcal/kg	4095.156
6	Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV of Coal India		*
7	Weighted average price of oil	₹/KL	47739.24
8	Weighted average price of Coal	₹/MT	1964.62
9	<b>Rate of energy charge ex-bus</b>	<b>Paise/kWh</b>	<b>120.648**</b>

\* to be calculated by the petitioner based on the adjustment formulae

\*\* to be revised as per the figures at Sl. No. 6

78. Energy Charges for 2 months on the basis of as billed GCV for the purpose of Interest in working capital has been worked out as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
28137.50	28214.59	28137.50	28815.51	28815.51



## Water Charges

79. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

*“29.(2) The Water Charges and capital spares for thermal generating station shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization”*

80. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner.

81. The water charges claimed by the petitioner for the period 2014-19 are as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
4000.68	4254.72	4524.90	4812.23	5117.81

82. In order to examine the trend of water consumption and rate of water charges, the petitioner was directed vide ROP of the hearing dated 24.5.2016 to furnish the details of the actual water consumption along with the rate of water charges. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges have been furnished by the petitioner as under:

Description	Remarks
Type of Plant	Coal
Type of cooling water system	Closed circuit cooling system with induced draft cooling tower
Consumption of water	54.79 cusec
Rate of water charges	₹.5.6 /M3, however water charges are paid as per allocated quantities
Total water charges in 2013-14	₹4000.68 lakh

83. The respondents, TANGEDCO and KSEB have raised the issue of unavailability of year wise split up details and proof of previous remittances of water charges by the



petitioner. The petitioner in compliance to the above said directions, has submitted the actual water consumption, rate of water charges for the last 5 Years i.e 2009-14 along with relevant document in support of the claim as under:

	2009-10	2010-11	2011-12	2012-13	2013-14
Allocated Water Quantity for station Stage-I & II (Cusec)	75	80	85	120	120
Actual Water drawl Station Stage I& II (Cusec)	79.63	70.65	75.47	80.32	82.19
Rate or Water Charges.	From 1.4.2009 to 28.2.2010, payment on water drawl is made on Actual water consumption for drinking water & Industrial water. i) Industrial Water (@₹ 250/- per One lakh gallon) ii) Drinking Water (@ ₹30/- per Ten Thousand cubic feet) From 1.3.2010 to 30.9.2010, payment on water drawl is @₹ 250/- per one lakh gallon) on allocated quantity. From 1.10.2010 onwards payment on water drawl is @₹ 5.60/m3 on allocated quantity.				
Actual Water Charges paid for generating station (₹ crore) based on allocation of water	4.05	22.14	42.62	60.01	60.01
Actual Water Charges paid corresponding to Stage-II (Total water charges paid *2/3) (₹ crore) (Proportionate allocation of water charges based on MW capacity)	2.70	14.76	28.42	40.01	40.01

84. The petitioner has further submitted that the payment of water charges is as per quantity of water drawn or allocated whichever is higher. It has submitted that where drawl of water is more than the allocated quantity, the penal rate is six times the rate on the quantity of excess drawl in addition to the water charges on the allocated quantity. The petitioner has also enclosed the copy of water supply agreement signed with Department of Water Resources, Govt. of Odisha dated 27.4.2013 and applicable for period April, 2013 to April, 2016. In justification of the quantity of water required for the generating station, the petitioner has submitted as under:

*“As per the above, the water requirement for 3000 MW (for TSTPS Stage-I & II) @5cubic meter/hr/MW comes out to be 147 cusec (i.e. 131.4 MCM/year). Even being on conservative side with water flow @4cubic meter/hr, the water requirement for both generating stations of TSTPS (2x500MW+4x500 MW) comes out to be 118 cusec (i.e. 105.12 MCM/year).*



*It is submitted that with better O&M practices, chemical dosing, Ash Water Recirculation System (A WRS) in place, the instant station has been able to reduce the raw water make-up and is maintaining its water requirement within the prescribed quantum as mentioned above.*

*It is further submitted that the agreement of water for a thermal generating station is carried out based on Water Balance Diagram based on various considerations like temperature and relative humidity affecting rate of evaporation of water from raw water pond, Cooling Towers etc, blowdown for design Cycle of Concentration (COC) for circulating water, drift loss of cooling tower, steam loss in the cycle, level of generation etc.*

*It is submitted that due to prohibitive high penal rate for consumption of water beyond allocation and for reasons as detailed above, the water allocation taken is higher than normal consumption. Therefore, Hon'ble Commission may be pleased to consider the above brought out factors behind the difference between allocated quantity and actual consumption of water and allow the expenditure pertaining to the allocated quantity of water for successful and efficient running of the station in long run."*

85. We have examined the submissions. It is noticed that the water charges claimed by the petitioner during 2014-15 is the same as the water charges paid in the year 2013-14. In other words, the total water charges claimed by the petitioner in 2014-15 is based on the water consumption and water charges paid in 2013-14 and the same has been escalated @ 6.35% as per the escalation rate in O&M norms specified by the Commission for the period 2014-19. However, the escalation rate of 6.35% considered by the petitioner is not in conformity with the Water supply agreement signed by the petitioner on 27.4.2013 with the Department of Water resources, Govt. of Odisha, which specifies the rate of ₹ 5.60 /m<sup>3</sup> on allocation of water up to 31.3.2016. Hence, the yearly escalation of water charges rate @6.35% is considered after 31.3.2016 as per the escalation rate specified by the Commission in the O&M norms under the 2014 Tariff Regulations. The water charge rate is considered @₹ 5.60/m<sup>3</sup> up to 31.3.2016. Accordingly, water charges have been allowed with the annual escalation of 6.35% to the water charges claimed during 2016-19. Based on this, the projected water charges for the period 2014-19 is allowed as under:

	<b>Projected Water charges (₹ in lakh)</b>
2014-15	4000.68





2015-16	4000.68
2016-17	4254.72
2017-18	4524.90
2018-19	4812.23

86. The water charges allowed as above is subject to truing -up at the end of the tariff period 2014-19 and the petitioner is directed to place on record all relevant information.

87. Based on the above discussions, the total O&M expenses including water charges, as claimed by the petitioner and allowed are summarized as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses claimed	32000.00	34020.00	36160.00	38440.00	40860.00
<b>O&amp;M Expenses allowed</b>	32000.00	34020.00	36160.00	38440.00	40860.00
Water Charges claimed	4000.68	4254.72	4524.90	4812.23	5117.81
<b>Water Charges allowed</b>	<b>4000.68</b>	<b>4000.68</b>	<b>4254.72</b>	<b>4524.90</b>	<b>4812.23</b>
Total O&M Expenses claimed	36000.68	38274.72	40684.90	43252.23	45977.81
<b>Total O&amp;M Expenses allowed</b>	<b>36000.68</b>	<b>38020.68</b>	<b>40414.72</b>	<b>42964.90</b>	<b>45672.23</b>

### Capital Spares

88. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. However, the claim of the petitioner, if any, shall be considered on merits at the time of truing-up after prudence check.

### Maintenance spares

89. The petitioner has claimed maintenance spares in the working capital as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
7200.14	7654.94	8136.98	8650.45	9195.56

90. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the Operation & Maintenance expenses as specified in Regulation 29. In terms of Regulation 29(2) of the 2014 Tariff Regulations and in line with



Commission's order dated 6.10.2015 in Petition No. 186/GT/2014, the maintenance spares @ 20% of O & M expenses allowed is as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
7200.14	7604.14	8082.94	8592.98	9134.45

### Receivables

91. Receivables equivalent to two months of capacity charge and energy charges has been worked out and allowed as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Variable charges- for two months	28141.87	28218.97	28141.87	28819.99	28819.99
Fixed charges- for two months	17914.28	18125.79	18583.76	15901.16	16720.56
<b>Total</b>	<b>46056.16</b>	<b>46344.76</b>	<b>46725.63</b>	<b>44721.15</b>	<b>45540.56</b>

### O&M expenses

92. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital in Form-13 B including water charges are as follows:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3000.06	3189.56	3390.41	3604.35	3831.48

93. Based on the O&M expense norms and in terms of order dated 6.10.2015 in Petition No. 186/GT/2014, the O&M expenses for 1 month is allowed as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3000.06	3168.39	3367.89	3580.40	3806.02

### Month to Month Energy Charges

94. Clause 6 (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

*"6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:*



(a) For coal based and lignite fired stations

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.

CVSF = Calorific value of secondary fuel, in kCal per ml.

ECR = Energy charge rate, in Rupees per kWh sent out.

GHR = Gross station heat rate, in kCal per kWh.

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in Rupees per kg.

LPPF = Weighted average landed price of primary fuel, in Rupees per kg”

95. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations read with Commission’s order dated 25.1.2016 in Petition No. 283/GT/2014.

96. The petitioner has been directed in order dated 19.2.2016 in Petition No. 33/MP/2014 to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out with the beneficiaries at the Senior Management level.

### **Rate of interest on working capital**

97. Regulation 28 (3) of the 2014 Tariff Regulations provides as under:

*“Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.”*

98. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350bps) has been considered for the purpose of calculating interest on working capital. Accordingly, Interest on Working Capital has been computed as under:



(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of coal stock- 15 days	6795.35	6795.35	6795.35	6959.10	6959.10
Cost of coal towards generation- 30 days	13590.70	13590.70	13590.70	13918.19	13918.19
Cost of secondary fuel oil- 2 months	578.50	580.09	578.50	592.44	592.44
Maintenance spares- 20% of O & M	7200.14	7604.14	8082.94	8592.98	9134.45
Receivables	46056.16	46344.76	46725.63	44721.15	45540.56
O&M expenses- 1 month	3000.06	3168.39	3367.89	3580.41	3806.02
<b>Total working Capital</b>	<b>77220.91</b>	<b>78083.43</b>	<b>79141.03</b>	<b>78364.27</b>	<b>79950.75</b>
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest on working capital</b>	<b>10424.82</b>	<b>10541.26</b>	<b>10684.04</b>	<b>10579.18</b>	<b>10793.35</b>

### Compensation Allowance

99. Regulation 17(1) of the 2014 Tariff Regulations provides as under:

*“17. Compensation Allowance: (1) In case of coal-based or lignite-fired thermal generating station or a unit thereof, a separate compensation allowance shall be admissible to meet expenses on new assets of capital nature which are not admissible under Regulation 14 of these regulations, and in such an event, revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.”*

100. The Compensation Allowance shall be allowed in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:

Years of operation	Compensation Allowance (₹. lakh/MW/year)
0-10	Nil
11-15	0.20
16-20	0.50
21-25	1.00

101. The petitioner has claimed Compensation Allowance (unit-wise) to meet expenses on new assets of capital nature including in the nature of minor assets as follows:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19	Total
200	300	400	400	400	1700

102. Two units of the generating station (as on 31.3.2014) and two units (as on 31.3.2015) have completed more than 10 years of commercial operation from their



respective date of COD(s). Accordingly, the Compensation allowance admissible to the petitioner is as under:

Sl.No.		Unit I	Unit II	Unit III	Unit IV
1.	Capacity in MW	500	500	500	500
2.	COD	1-8-2003	1-3-2004	1-11-2004	1-8-2005
	Useful life as on 1.4.2014	10.666	10.085	9.414	8.666
3.	Actual useful life				
	a) 10 years	1.08.2013	1.03.2014	1.11.2014	1.08.2015
	b) 15 years	1.08.2018	1.03.2019	1.11.2019	1.08.2020
	c) 20 years	1.08.2023	1.03.2024	1.11.2024	1.08.2025
	d) 25 years	1.08.2028	1.03.2029	1.11.2029	1.08.2029
	2014-15	100.00	100.00	0.00	0.00
	2015-16	100.00	100.00	100.00	0.00
	2016-17	100.00	100.00	100.00	100.00
	2017-18	100.00	100.00	100.00	100.00
	2018-19	100.00	100.00	100.00	100.00
	<b>Total</b>	<b>500.00</b>	<b>500.00</b>	<b>400.00</b>	<b>300.00</b>

### Annual Fixed Charges

103. Accordingly, the annual fixed charges approved for the generating station for the period 2014-19 is summarized as below:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	27505.82	27807.10	28210.65	9278.10	10319.56
Interest on loan	2316.91	653.07	0.00	0.00	181.02
Return on equity	31237.46	31732.61	32193.12	32584.80	33357.22
Interest on working capital	10424.82	10541.26	10684.04	10579.18	10793.35
O&M expenses	36000.68	38020.68	40414.72	42964.90	45672.23
Compensation allowance	200.00	300.00	400.00	400.00	400.00
Special allowance	0.00	0.00	0.00	0.00	0.00
<b>Total annual fixed charges</b>	<b>107685.69</b>	<b>109054.73</b>	<b>111902.53</b>	<b>95806.98</b>	<b>100723.39</b>

### Application Fee and Publication Expenses

104. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited the filing fees of ₹ 88,00,000/- each year for the years 2014-15, 2015-16 and 2016-17 in terms of the provisions of the Central Electricity



Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations, we direct that the petitioner shall be entitled to recover *pro rata*, the filing fee and the expenses incurred on publication of notices directly from the respondents on production of documentary proof. The filing fees for the remaining years of the tariff period 2017-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.

105. Petition No. 293/GT/2014 is disposed of in terms of the above.

**Sd/-**  
**(Dr. M.K.Iyer)**  
**Member**

**Sd/-**  
**(A. S. Bakshi)**  
**Member**

**Sd/-**  
**(A. K. Singhal)**  
**Member**

**Sd/-**  
**(Gireesh B. Pradhan)**  
**Chairperson**





Receipt No : 1895602/2023/O/o Chief General Manager(RAC) - TSSPDCL

## Month wise details of energy sold through Power Exchanges for the period FY-2016-17 to FY-2022-23

ANNEXURE - E

FY	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23 (upto Jan 2023)	
Month	Energy sold in (MU)	Avg Rate (Rs/Kwh)	Energy sold in (MU)	Avg Rate (Rs/Kwh)	Energy sold in (MU)	Avg Rate (Rs/Kwh)	Energy sold in (MU)	Avg Rate (Rs/Kwh)	Energy sold in (MU)	Avg Rate (Rs/Kwh)	Energy sold in (MU)	Avg Rate (Rs/Kwh)	Energy sold in (MU)	Avg Rate (Rs/Kwh)
April	0.00	0.00	1.49	2.82	479.58	3.36	163.46	2.82	0.00	0.00	170.7	3.35	50.90	9.85
May	2.97	1.96	88.38	2.63	621.32	3.90	138.03	2.94	30.55	2.44	368.48	3.06	284.68	6.90
June	15.14	2.05	98.39	2.33	319.04	3.19	138.12	3.04	0.02	2.32	156.36	3.35	90.16	6.62
July	39.07	1.80	0.00	0.00	69.39	3.13	40.41	2.99	10.88	3.54	265.29	3.48	100.81	7.32
August	14.99	1.40	11.84	2.37	325.86	2.98	3.90	2.94	41.48	2.55	451.78	6.46	497.42	6.19
September	28.33	1.83	19.63	3.78	27.81	2.94	159.85	2.71	104.05	3.15	827.01	4.47	650.88	6.86
October	26.69	1.95	533.16	3.87	0.00	0.00	54.72	2.77	249.64	3.05	765.51	8.26	818.76	3.78
November	11.29	1.45	194.06	3.37	121.87	3.41	45.36	2.75	233.30	3.25	305.70	3.40	233.70	4.32
December	9.80	1.85	155.16	3.27	89.92	3.22	4.17	3.21	103.86	3.42	107.59	3.77	74.54	4.28
January	20.51	1.63	153.45	3.04	45.86	3.62	0.00	0.00	32.18	3.51	61.30	4.20	55.96	7.25
February	1.64	2.68	230.73	3.22	69.00	3.14	0.00	0.00	26.44	3.84	76.50	5.20		
March	0.00	0.00	231.71	3.81	54.53	2.92	0.00	0.00	5.35	4.41	64.53	10.75		
Total	170.42	1.78	1718.00	3.42	2224.17	3.40	748.02	2.86	837.74	3.17	3620.76	5.22	2522.23	5.70



GOVERNMENT OF TELANGANA  
ENERGY (BUDGET) DEPARTMENT

Letter No.725/Budget.A2/2018

Dt:05-07-2018

From  
The Deputy Secretary to Government,  
Energy Department, D-Block,  
Telangana Secretariat,  
Hyderabad - 500 022.

To  
The Chairman & Managing Director,  
TS-SPDCL, Hyderabad. (w.e.)

Sir,

Sub:- Energy Department - TSSPDCL - Share Certificates  
Acknowledgement - Reg.

Ref:- From the Chairman & Managing Director, TSSPDCL  
Lr.No.TSSPDCL/CMD/CS/D.No.18/18, Dt:28.05.2018

Adverting to your letter cited, I am to inform that the following Share  
Certificates received in original issued in the name of Governor of Telangana are  
hereby acknowledged.

S.No.	Certificate No.	Regd. Folio No.	No. of Shares (Each of Rs.10/-)
1	12	21	487,68,27,697
2	13	21	158,38,34,000
3	14	21	174,87,89,000

Yours faithfully,

for Deputy Secretary to Government

cam/Fin

10/7

G.M. (R&S MSA)
G.M. (T&S SP)
G.M. (T&S J&S)
G.M. (A&S)
Pay Officer
JAO (Person)
G.M. (FINANCE)

Recd. H. V. N. L.

AO/ACES

12/7

13/7

Pls. transmit to CS duly keeping a copy for record

Pls. take a copy of the certificate & transmit to the CS

13/7/18



**URGENT**

GOVERNMENT OF TELANGANA  
ENERGY (BUDGET) DEPARTMENT

Letter No.335/Budget.AZ/2018-1 Dt:03-04-2018

From  
The Special Chief Secretary to Government,  
Energy Department, D-Block,  
Telangana Secretariat,  
Hyderabad - 500 022.

To  
The Chairman & Managing Director,  
TS-SPDCL, Hyderabad.

Sir,

Sub:- Energy Department - TSSPDCL - Issue of orders for Equity Shares of 1583.83,40,000 allotted to TSSPDCL towards Equity Infusion in 70:30 ratio between TSDisoms out of Rs.2262.62 Crores - Reg.

Ref:- 1. G.O.Ms.No.02, Energy (Budget) Department, Dt:16.02.2017.  
2. G.O.Ms.No.09, Energy (Budget) Department, Dt:25.03.2017.  
3. G.O.Ms.No.11, Energy (Budget) Department, Dt:31.03.2017.  
4. From the Chairman & Managing Director, TSSPDCL Lr.No.CMD/TSSPDCL/CS/D.No.54/2017, Dt:11.12.2017.

<<<>>

Adverting to the proposal received vide letter 4<sup>th</sup> cited, I am to inform that in pursuance of the Govt. orders 1<sup>st</sup> to 3<sup>rd</sup> cited on Infusion of Equity, the TSPCC allotted Shares between TSSPDCL and TSNPDCL for the amounts released in the said G.Os. You are, therefore, requested to take necessary action for allotment of shares as proposed by you without further orders from Government, as was done by TSNPDCL.

Yours faithfully,

*Maseep*  
for Special Chief Secretary to Government

Copy to:-  
The Chairman & Managing Director,  
TSNPDC, Warangal.  
SC

G.M. (Rev & P&A)  
G.M. (Trust & SP)  
G.M. (Ac. noted)  
G.M. (Audit)  
Pay Officer  
JAO (Pesthi)  
C.G.M. (FINANCE)

12.4.18  
no/faces  
12/4/18  
Please forward to the Copying section  
12/4/18





# Transmission Corporation of Telangana Limited

(Govt. of Telangana State Undertaking)

Vidyut Soudha, Khairatabad, Hyderabad-500 082. PABX : 23396000  
(CIN No. U40102TG2014SGC094248) www.transco.telangana.gov.in

From:

The Joint Managing Director  
TSTRANSCO & Member TSPCC  
Vidyut Soudha, Khairatabad  
HYDERABAD.

To:

The Chairman & Managing Director,  
TSSPDCL,  
Mini Compound,  
HYDERABAD

Lr No JMD(Fin, Comm & HRD)/CC/TSPCC/F.T.S/D No. 210/17, dt 28.11.2017

Sir,

Sub. Release of additional infusion of equity in the form of plough back dues to TSTRANSCO, VAT and Royalty to M/s SCCL and Electricity duty to TSDiscoms - Reg.

Ref - 1) G.O Ms.No. 2, Dt. 16.02.2017 of GoTS, Energy Dept.  
2) G.O Ms.No. 9, Dt. 25.03.2017 of GoTS, Energy Dept.  
3) G.O Ms.No. 11, Dt. 31.03.2017 of GoTS, Energy Dept.

\*\*\*\*\*

Government of Telangana has released the following amounts towards infusion of equity as indicated below

Payment to TSGENCO against the dues of M/s SCCL towards Royalty and VAT and Plough back dues of TSTRANSCO	Rs. 1700.00 Crs
Payment of Electricity duty of TSSPDCL and TSNPDCL and plough back dues of TSTRANSCO	Rs. 450.00 Crs
Payment of VAT and Royalty to M/s SCCL on behalf of TSGENCO	Rs. 112.62 Crs
<b>TOTAL</b>	<b>Rs. 2262.62 Crs</b>

The above amounts have been received in TSPCC account and the same has been utilized to pay the above amounts on behalf of TSDISCOMs. The GoTS in the above G.O's has directed to treat the above amount as infusion of equity in TSDISCOMs. The following are the allocation of equity between two Discoms.

TSSPDCL	Rs. 15,83,83,40,000
TSNPDCL	Rs. 6,78,78,60,000
<b>TOTAL</b>	<b>Rs. 22,62,62,00,000</b>

Discoms are requested to consider the reference G.O issued by GoTS treating the above amount as infusion of equity. It is requested to allot shares to the GoTS as per the details of the amounts received from GoTS. The Shares may be allotted as per the standard government practices.

Yours faithfully,

Joint Managing Director

ENERGY SAVED IS ENERGY PRODUCED





# Transmission Corporation of Telangana Limited

(Govt. of Telangana State Undertaking)

Vidut Soudha, Khairatabad, Hyderabad-500 082, PABX : 23396000  
(CIN: L04010TG2014SGC094248) www.transco.telangana.gov.in

From:

The Joint Managing Director  
TSTRANSO & Member, TSPCC  
Vidut Soudha, Khairatabad,  
HYDERABAD.

To:

The Chairman & Managing Director  
TSSPDCL,  
Mint Compound,  
HYDERABAD.

Lr.No JMD(Fin, Comml &amp; HRD)/Dy.CCA/TSPCC/F.T.S/D No. 210/17,dt. 28.11.2017

Sir,

Sub: Release of additional infusion of equity in the form of plough back dues to TSTRANSO, VAT and Royalty to M/s SCCL and Electricity duty to TSDiscoms - Reg.

- Ref:- 1) G.O Ms.No. 2, Dt. 16.02.2017 of GoTS, Energy Dept.  
2) G.O Ms.No. 9, Dt. 25.03.2017 of GoTS, Energy Dept.  
3) G.O Ms.No. 11, Dt. 31.03.2017 of GoTS, Energy Dept.

\*\*\*\*\*

Government of Telangana has released the following amounts towards infusion of equity as indicated below:

G.M.(Trust & SP)	Payment to TSGENCO against the dues of M/s SCCL	Rs. 1700.00 Crs
G.M.(Rev & PSA)	towards Royalty and VAT and Plough back dues of	
G.M.(Accounts)	TSTRANSO	
G.M.(Audit)	Payment of Electricity duty of TSSPDCL and TSNPDCL	Rs. 450.00 Crs
Pay Officer	and plough back dues of TSTRANSO	
JAO (Peshi)	Payment of VAT and Royalty to M/s SCCL on behalf of	Rs. 112.62 Crs
	TSGENCO	
	<b>TOTAL</b>	<b>Rs. 2262.62 Crs</b>

The above amounts have been received in TSPCC account and the same has been utilized to pay the above amounts on behalf of TSDISCOMs. The GoTS in the above G.O's has directed to treat the above amount as infusion of equity in TSDISCOMs. The following are the allocation of equity between two Discoms.

TSSPDCL	Rs. 15,83,83,40,000
TSNPDCL	Rs. 6,78,78,60,000
<b>TOTAL</b>	<b>Rs. 22,62,62,00,000</b>

Discoms are requested to consider the reference G.O issued by GoTS treating the above amount as infusion of equity. It is requested to allot shares to the GoTS as per the details of the amounts received from GoTS. The Shares may be allotted as per the standard government practices.

Yours faithfully,

Joint Managing Director

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GOVERNMENT OF TELANGANA  
ABSTRACT

Telangana State Energy Department - Sanction of Rs.1700.00 Crores to TS-TRANSCO as additional funds towards equity infusion in 70:30 ratio between TSSPDCL & TSNPDCL in favour of Telangana Power Distribution Companies pool account - Administrative sanction - Orders - Issued.

## ENERGY (BUDGET) DEPARTMENT

G.O.Ms.No.02

Dated:16-02-2017

Read the following:-

1. From the Joint Managing Director, TS-TRANSCO Lr.No.JMD (Fin, Comml & HRD)/SAO(CC)/D.No.22/17, Dt:30.01.2017
2. G.O.Rt.No.202, Finance (EBS-II) Department, Dt:14.02.2017.

-XXX-

ORDER:-

The Joint Managing Director, TS-PCC/TS-TRANSCO, in his letter first read above stated that there are mounting dues payable by TSDISCOMs to TSGENCO which is around Rs.5000 Crs including the set off of power dues payable of APDISCOMs to TSGENCO; that present financial position of the DISCOMs and regulated revenue is not giving any room for the DISCOMs to discharge old dues to TSGENCO and TSGENCO in turn is not in a position to pay coal bills to M/s SCCL which is around Rs.2000 Crs subject to reconciliation. Therefore, it has been finally requested to consider to infuse equity in DISCOMs to the extent of Rs.1163 Crs i.e. Rs.814 Crs to TSSPDCL and Rs.349 Crs to TSNPDCL and also to release tariff subsidy dues of Rs.957 Crs pertaining to FY 2014-15 and FY 2015-16.

2. Government after careful consideration of the matter, have issued BRO in the reference 2<sup>nd</sup> read above, for an amount of Rs.1700,00,00,000 (Rupees One Thousand Seven Hundred Crores Only) under plan from the BE provision 2016-17 as additional funds towards equity infusion in 70:30 ratio between TSSPDCL & TSNPDCL in relaxation of TCO (Treasury Control Order) by obtaining supplementary grants at an appropriate time during BE 2016-17 for the scheme "Investments in DISCOMS".

3. In terms of the orders issued in G.O. 2<sup>nd</sup> read above, Government hereby accord administrative sanction for an amount of Rs.1700,00,00,000 (Rupees One Thousand Seven Hundred Crores Only) under plan from the BE provision 2016-17 as additional funds towards equity infusion in 70:30 ratio between TSSPDCL & TSNPDCL for the scheme "Investments in DISCOMS".

4. The expenditure sanctioned at para (3) above, shall be debited to the Head of Account "4801-02-190-11-07-540-000".

5. The Assistant Secretary to Government, Energy Department, Hyderabad shall draw and disburse the amount and to arrange to credit the amount in favour of "Telangana Power Distribution Companies pool Account Number 62344459665, (IFSC Code:SBHY0020066, and MICR Code:500004019) maintained with SBH, Gunfoundry Branch, Abids, Hyderabad.

6. The Joint Managing Director, Telangana Power Coordination Committee shall disburse the Equity amount as granted on para (3) above and **submit the Utilization Certificate** for the amount sanctioned.

p.t.o.



-2-

7. This orders issues with the concurrence accorded vide U.O. No.1654/32/A1/EBS-II/2017, Finance (EBS-II) Department Dt:14.02.2017

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

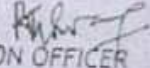
AJAY MISRA  
Special Chief Secretary to Government

To  
The Chairman & Managing Director, TS-TRANSCO (FAC), Hyderabad.  
The Joint Managing Director, TS-PCC/TS-TRANSCO, Hyderabad  
The Dy.CCA, Telangana Power Coordination Committee, Hyderabad.  
The Director of Treasuries & Accounts, Abids, Hyderabad  
(for issue of authorization.)  
The Pay & Accounts Officer, Hyderabad.

Copy to:

The Secretary, Telangana State Electricity Regulatory Commission, Hyderabad.  
The Chairman and Managing Director, TS-SPDCL, Hyderabad  
The Chairman and Managing Director, TS-NPDCL, Warangal  
The Accountant General, Telangana and Andhra Pradesh, Hyderabad  
The Energy (OP) Department  
The Finance (EBS-II) Department.  
File C.No.185/Budget/2017]  
SF/SCs.

//Forwarded :: By Order//

  
SECTION OFFICER  
ME



**Transmission Corporation of Telangana Limited**  
(Govt. of Telangana State Undertaking)  
Vidyut Soudha, Khairatabad, Hyderabad-500 082., PABX : 23396000  
(CIN No: U40102AP2017SSC094248) www.transco.telangana.gov.in

From:  
The Joint Managing Director  
(Fin, Comml & HRD)  
TSSPDCL & MEMBER TSPCC  
Vidyut Soudha, Hyderabad

Chairman and Managing Director,  
TSSPDCL  
Mint Compound,  
HYDERABAD.

**Lr.No. JMD(Fin, Comml, & HRD)/SAO(CC)/D.No. 30/17 dt. 14-02-2017**

Sub:-Dues of TSGENCO - Reg.

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1. GoTS is contemplating to release Rs.1700 Crs towards the dues payable by TSDISCOMs to TSGENCO with an arrangement that the DISCOMs will pay Rs.1700 Crs to TSGENCO and TSGENCO in turn releases Rs.1700 Crs to M/s Singareni Collieries Company Limited and M/s Singareni Collieries Company Limited on the same day will pay royalty and VAT to Government of Telangana. This process has to be completed on same day so that the government finances will not be affected.

2. Since the process is to be done on the same day, Principal Secretary, IF, Finance Department has proposed that consent letters from TSGENCO and M/s Singareni Collieries Company Limited to directly release the amount by DISCOMs to government would facilitate the transaction without any hurdle. Further, this transaction will be done at TSPCC end.

3. The release of Rs.1700 Crs by the government to the DISCOMs is in the form of infusion of equity. Hence, it is requested to increase authorized capital to the extent of Rs.1190 Crs for TSSPDCL and Rs.510 Crs for TSNPDCL. It is also requested to consider increasing authorized capital to the extent of Rs.2231 Crs which is to be released by Government of Telangana under UDAY Scheme.

4. The GoTS has entered in to MoU on UDAY Scheme on 04.01.2017. The total debt outstanding of TSDISCOMs is Rs.11897 Crs, out of which the GoTS has to take over 75% of total debt of Discoms as on 30.09.2015. This amounts to Rs.8923 Crs. As per the UDAY Scheme, the GoTS will release 50% of Rs.8923 i.e. Rs.4462 Crs in the form of grant in 2016-17, 25% of Rs.8923 Crs which amount to Rs.2231 Crs will be infused as equity in 2016-17. TSSPDCL share in outstanding debt of 75% is Rs.5543.85 Crs which is 62% of the total debt. TSNPDCL debt is Rs.3379.08 Crs

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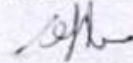
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which is 38% of the debt. The equity is to be shared between the DISCOMs in proportion to the total debt to be taken over by the government (62:38) which is Rs.1386 Crs to TSSPDCL and Rs.845 Crs to TSNPDCL.

5. It is requested to consider to increase the authorized capital considering as indicated below :

Description	Ratio	TSSPDCL	TSNPDCL
Additional equity infused	70:30 – Rs. 1700 Crs.	Rs. 1190 Crs.	Rs. 510 Crs.
UDAY Scheme	62:38 – Rs. 2231 Crs.	Rs. 1386 Crs.	Rs. 845 Crs.
<b>TOTAL</b>		<b>Rs.2576 Crs.</b>	<b>Rs.1355 Crs.</b>

Yours faithfully,



**Joint Managing Director**





DIR/Fin

GOVERNMENT OF TELANGANA  
- ABSTRACT

Energy Department - Sanction of Rs.415,00,00,000/- to TS-TRANSCO towards funding of operational losses of DISCOMs for the FY 2021-22 under UDAY Scheme by providing as additional funds in favour of Telangana Power Distribution Companies pool account - Administrative sanction - Orders - Issued.

ENERGY (BUDGET) DEPARTMENT

Dated: 24-12-2022

Read the following:-



G.O. Ms.No.33

1. UDAY Guidelines issued vide Office Memorandum, No.06/02/2015-EEF/FRP, Dt:20.11.2015 Ministry of Power, Gov.
2. G.O. Ms.No.15, Energy (Budget, A2) Dept., Dt.18.06.2022.
3. BRO No.1712, Finance (EBS-II) Department, Dt:24.12.2022.

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UDAY (Ujwal Discom Assurance Yojana), a Scheme for financial turnaround of Power Distribution Companies (DISCOMs), has been launched by Government of India with an objective to improve the operational and financial efficiency of the State DISCOMs. Since UDAY scheme provided an effective way to address past losses incurred by DISCOMs and minimize impact on future tariff increase, Government also joined UDAY scheme on Dt:04.01.2017. As per Clause 8.1 of UDAY guidelines communicated vide letter of Ministry of Power 1<sup>st</sup> read above, States shall take over the future losses of DISCOMs in a graded manner and shall fund the loss as follows and previous year's actual losses will be used for calculation for each year instead of using current year's estimated losses.

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Previous year's DISCOM loss to be taken over by State	0% of the loss of 2014-15	0% of the loss of 2015-16	5% of the loss of 2016-17	10% of the loss of 2017-18	25% of the loss of 2018-19	50% of the previous year loss.

2. In the G.O.2<sup>nd</sup> read above administrative sanction was accorded for an amount of Rs.8925,00,00,000/- to TSTRANSCO towards funding of operational losses of DISCOMs of FY 2020-21 under UDAY Scheme by providing as additional funds from the Budget Provision 2022-23.



3. In the reference 3<sup>rd</sup> read above, the Finance (EBS-II) Department has issued BRO for an amount of Rs.415,00,00,000/- (Rupees Four Hundred and Fifteen Crores Only) scheme from the BE provision 2022-23 towards taking over of operational losses of DISCOMs for financial year 2021-22 under UDAY Scheme by providing of additional funds in relaxation of treasury control orders and quarterly regulation order of funds by way obtaining supplementary grants at in appropriate time during the year 2022-23, under the Scheme "Taking over of DISCOMs Losses under UDAY Scheme" and under the Head of Account "2801-05-190-25-10-310-312".

4. In pursuance of the BRO issued in the 3<sup>rd</sup> read above, Government hereby accord administrative sanction for an amount of Rs.415,00,00,000/- (Rupees Four Hundred and Fifteen Crores Only) to TSTRANSCO towards funding of operational losses of DISCOMs for the FY 2021-22 under UDAY Scheme by providing as additional funds from the Budget Provision 2022-23, under the Scheme "Taking over of DISCOMs Losses under UDAY Scheme" in favour of Telangana Power Distribution Companies pool account.

(p.t.o.)

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5. The expenditure sanctioned in para (4) above, shall be debited to the Head of Account "2801-05-190-25-10-310-312".

6. The Assistant Secretary to Government, Energy Department, Hyderabad shall draw and disburse the amount and to arrange to credit the amount in favour of "TG Power Distribution Companies Pool Account", Account No.62344459665, (IFSC Code:SBIN0020066, and MICR Code:500004019) maintained with SBI, Gunfoundry Branch, Abids, Hyderabad.

7. The Joint Managing Director, Telangana Power Coordination Committee shall *submit the Utilization Certificate* for the amount sanctioned in para (4) above.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

SUNIL SHARMA  
SPECIAL CHIEF SECRETARY TO GOVERNMENT

To

The Chairman & Managing Director, TS-TRANSCO (FAC), Hyderabad.

The Joint Managing Director, TS-PCC/TS-TRANSCO, Hyderabad

The Dy.CCA, Telangana Power Coordination Committee, Hyderabad.

The Director of Treasuries & Accounts, Abids, Hyderabad

(for issue of authorization.)

The Pay & Accounts Officer, Hyderabad.

Copy to:

The Joint Secretary, Ministry of Finance, Gol,

The Joint Secretary, Ministry of Power, Gol,

The Secretary, Telangana State Electricity Regulatory Commission, Hyderabad.

✓ The Chairman and Managing Director, TS-SPDCL, Hyderabad

The Chairman and Managing Director, TS-NPDCL, Warangal

The Accountant General, Telangana and Andhra Pradesh, Hyderabad

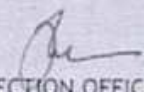
The Energy (OP) Department

The Finance (EBS-II) Department.

File C.No.1142/Budget.A2/2017]

SF/SCs.

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SECTION OFFICER



REGISTERED POST R.P.D.

**TRANSMISSION CORPORATION OF TELANGANA LIMITED**  
(Govt. of Telangana State Undertaking)

From  
The Joint Managing Director  
(Fin. Comml & HRD)  
TSSPDCL & Member TSPCC  
Vidyut Soudha, Khairatabad,  
Hyderabad-500082

To  
The Chairman & Managing Director  
TSSPDCL,  
Mint Compound, Hyderabad.

The Chairman & Managing Director  
TSNPDCL,  
Hanmakonda, Warangal.

No. ....  
19 JAN 2023  
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19 JAN 2023  
3969

Lr.No.JMD(Fin.Coml&HRD)/TSPCC/Dy.CCA/D.No.314/2023, Dt: 09-01-2023.

Sub:- TSPCC/TSDISCOMS - UDAY Scheme - Sanction of Rs. 415.00 Cr to TSDISCOMS towards funding of operational losses of DISCOMS @ 50% for FY 2021-22 under UDAY Scheme - Utilization of funds - Reg.

Ref:- 1) BRO No.: 1712, Finance (EBSII) Department, Dated: 24-12-2022  
2) G.O. Ms.No. 33, Energy (Budget.A2) Department, Dt: 24-12-2022.

In the G.O. 2<sup>nd</sup> cited, Government of Telangana has sanctioned an amount of Rs. 415.00,00,000/- to TSDISCOMS towards funding of operational losses of DISCOMS @ 50% for financial year 2021-22 under UDAY Scheme.

In this regard, it is to mention that Government of Telangana has released funds of Rs.415.00 Cr to TSDISCOMS against Net Losses of Rs.831.00Cr incurred by TSDISCOMS in FY 2021-22 as per the details furnished hereunder:

Loss funding by GoTS as per UDAY Scheme (Rs. In Crores)							
Financial Year	% of Loss taken over	Net Loss Incurred in FY 2021-22			Funds released by GoTS		
		TSSPDCL	TSNPDCL	Total Amount	TSSPDCL	TSNPDCL	Total Amount
2021-22	50%	627	204	831	313	102	415

Accordingly, Government of Telangana has released the said funds of Rs.415.00 Cr on 28-12-2022 and the same were utilized as follows:

**TSGENCO:-** Released funds to a tune of Rs.40.00 Cr to TSGENCO against the pending Power purchase Bills by TSDISCOMS. Consequently, TSGENCO has remitted the said amount to Government of Telangana (Treasury Account) against the Royalty dues payable by TSGENCO.

**ELECTRICITY DUTY:-** The balance amount of Rs.375.00 Cr was remitted to Government of Telangana against Electricity Duty payable by TSDISCOMS as detailed below:

Cont..(2)



( 2 )

Name of TSDISCOM	(Rs. Cr)	
	Challan No.	Amount
TSSPDCL	6203256151	273.00
TSNPDCL	6203256264	102.00
	Total	375.00

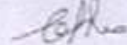
The Original Challan copies are enclosed herewith for reference.

In view of the above, it is requested to arrange to intimate the details to the Chief Electrical Inspector to Government /Department of Electrical Inspectorate /Government of Telangana and also to file Monthly Electricity Duty Returns.

Further, it is requested to pass necessary accounting entries in the Books of Accounts as "Grant-in-aid" provided by Government of Telangana to TSDISCOMs under the Revenue Head of Account.

Encl: As above.

Yours faithfully



Joint Managing Director  
(Fin, Comml & HRD)  
TSTRANSCO & Member/TSPCC