



**TELANGANA STATE ELECTRICITY REGULATORY COMMISSION  
HYDERABAD**

**5<sup>th</sup> Floor, Singareni Bhavan, Red Hills, Lakdi-ka-pul, Hyderabad 500004**

**PUBLIC NOTICE**

**IN THE MATTER OF**  
**DETERMINATION OF GENERIC TARIFF FOR ELECTRICITY GENERATED FROM**  
**REFUSE DERIVED FUEL BASED POWER PROJECTS IN THE STATE OF**  
**TELANGANA ACHIEVING COMMERCIAL OPERATION DATE DURING THE**  
**PERIOD FROM 01.04.2020 TO 31.03.2024**

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1. The Commission vide its Order dated 13.06.2016 in O. P. No. 18 of 2016 determined the Generic Tariff for electricity generated from Municipal Solid Waste (MSW) and Refuse Derived Fuel (RDF) based power projects in the State of Telangana achieving Commercial Operation Date (COD) during the period from 13.06.2016 to 31.03.2019.
2. The Commission desires to determine the Generic Tariff for electricity generated from RDF based power projects in the State of Telangana achieving Commercial Operation Date (COD) during the period from 01.04.2020 to 31.03.2024.
3. The Commission proposes the following financial and technical norms for the RDF based power projects in the State of Telangana achieving COD during the period from 01.04.2020 to 31.03.2024:

S. No.	Parameter	Units	Proposed Norm
1.	Capital Cost	Rs. Crore/MW	9
2.	Plant Load Factor (PLF)	%	First Year – 65% From Second Year – 80%
3.	Operation and Maintenance (O&M) expenses	%	5% of Capital Cost
4.	Annual escalation on O&M expenses	%	5.72%
5.	Plant Life	Years	20
6.	Land Value	Rs. Lakhs/MW	5
7.	Salvage Value	%	10%
8.	Depreciation	%	7% for first 10 years and 2% for the following 10 years
9.	Rate of Return on Equity (Post-tax)	%	14%
10.	Income Tax	-	Income Tax paid by the Generator on the income derived from the power project shall be reimbursed by the Distribution Licensee(s) on submission of challans of payment of Tax to the Income Tax Department.
11.	Interest on long-term loan	%	12%
12.	Loan Tenure	Years	10
13.	Debt: Equity ratio	-	70:30
14.	Working Capital components	-	1. O&M expenses for 1 month 2. Maintenance spares @ 1% of the capital cost escalated at 5% per annum 3. Receivables equivalent to 1 month for sale of electricity calculated on normative PLF 4. Fuel Cost for 1 month equivalent to normative PLF
15.	Rate of Interest on Working Capital	%	12.5%
16.	Discount Rate	%	12.60%
17.	Auxiliary Consumption	%	11%
18.	Station Heat Rate	kcal/kWh	4000
19.	Gross Calorific Value	kcal/kg	2500
20.	Base Fuel Price	Rs./MT	1800

21.	Annual Fuel Price escalation	%	5%
22.	Base Tipping fee	Rs./MT	1431
23.	Annual escalation on Tipping Fee	%	5%
24.	Incentives	-	Any incentives, State or Central, received by the Generator to be passed on to the Distribution Licensee(s) procuring power from the Generator

4. The Levelised Tariff computed in accordance with the above specified parameters is Rs. 7.76/kWh comprising of Levelised Fixed Cost of Rs. 3.31/kWh and Levelised Variable Cost Rs. 4.45/kWh respectively. This Levelised Tariff of Rs. 7.76/kWh shall be applicable for the RDF based power projects in the State of Telangana achieving COD during the period from 01.04.2020 to 31.03.2024.
5. The Levelised impact of Tipping Fee is Rs. 3.54/kWh which shall be reimbursed to the Distribution Licensee(s) on receipt of the Tipping Fee by the Generator under the provisions of its Concession Agreement.
6. Suggestions and comments are invited from all the stakeholders and public at large, so as to reach the following address on or before 15.04.2020 by 5.00 P.M.

**Commission Secretary [FAC]  
Telangana State Electricity Regulatory Commission  
5<sup>th</sup> Floor, Singareni Bhavan, Red Hills, Lakdi-ka-pul,  
Hyderabad 500004**

Sd/-  
COMMISSION SECRETARY<sub>[FAC]</sub>

DATE: 20-03-2020

Place: Hyderabad.

**Computation of Levelised Tariff for RDF based power projects:**

Parameter	Units	Value
Installed Capacity	MW	1
Useful life	Years	20
Capital Cost per MW	Rs. Crore	9.00
Land value per MW	Rs. Crore	0.05
Debt	%	70%
Equity	%	30%
O&M expenses per MW for 1st year	Rs. Crore	0.45
Annual escalation for O&M expenses	%	5.72%
Depreciation rate		
1-12 years	%	7.00%
13th year onwards	%	2.00%
Loan tenure	Years	10
Interest on term loan	%	12.00%
Interest on working capital	%	12.50%
Rate of Return on Equity	%	14%
Discount Factor	%	12.60%
PLF		
1st year	%	65%
2nd year onwards	%	80%
Auxiliary consumption	%	11%
Station Heat Rate	kcal/kWh	4000
Gross Calorific Value	kcal/kg	2500
Base Fuel Cost	Rs./MT	1800
Annual fuel cost escalation	%	5%
Base Tipping Fee	Rs./MT	1431
Annual escalation for Tipping Fee	%	5%

Particulars	Units	Year																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Gross Generation	MU	5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Net Generation	MU	5.07	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24
<b>Fixed Cost components</b>																					
O&M expenses	Rs. Lakh	45.00	47.57	50.30	53.17	56.21	59.43	62.83	66.42	70.22	74.24	78.48	82.97	87.72	92.74	98.04	103.65	109.58	115.85	122.47	129.48
Depreciation	Rs. Lakh	63.00	63.00	63.00	63.00	63.00	63.00	63.00	63.00	63.00	63.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
Interest on term loan	Rs. Lakh	71.82	64.26	56.70	49.14	41.58	34.02	26.46	18.90	11.34	3.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital	Rs. Lakh	7.35	8.39	8.65	8.93	9.23	9.54	9.88	10.24	10.62	11.02	11.01	11.55	12.11	12.70	13.32	13.97	14.65	15.37	16.13	16.92
Return on Equity	Rs. Lakh	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80
<b>Total Fixed Cost</b>	<b>Rs. Lakh</b>	<b>224.97</b>	<b>221.03</b>	<b>216.45</b>	<b>212.04</b>	<b>207.82</b>	<b>203.79</b>	<b>199.97</b>	<b>196.36</b>	<b>192.98</b>	<b>189.84</b>	<b>185.30</b>	<b>180.32</b>	<b>155.63</b>	<b>161.23</b>	<b>167.16</b>	<b>173.42</b>	<b>180.03</b>	<b>187.02</b>	<b>194.40</b>	<b>202.20</b>
<b>Per unit Fixed Cost</b>																					
O&M expenses	Rs./kWh	0.89	0.76	0.81	0.85	0.90	0.95	1.01	1.06	1.13	1.19	1.26	1.33	1.41	1.49	1.57	1.66	1.76	1.86	1.96	2.08
Depreciation	Rs./kWh	1.24	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Interest on term loan	Rs./kWh	1.42	1.03	0.91	0.79	0.67	0.55	0.42	0.30	0.18	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital	Rs./kWh	0.15	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.25	0.26	0.27
Return on Equity	Rs./kWh	0.75	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
<b>Total Fixed Cost</b>	<b>Rs./kWh</b>	<b>4.44</b>	<b>3.54</b>	<b>3.47</b>	<b>3.40</b>	<b>3.33</b>	<b>3.27</b>	<b>3.21</b>	<b>3.15</b>	<b>3.09</b>	<b>3.04</b>	<b>2.33</b>	<b>2.41</b>	<b>2.50</b>	<b>2.59</b>	<b>2.68</b>	<b>2.78</b>	<b>2.89</b>	<b>3.00</b>	<b>3.12</b>	<b>3.24</b>
Fuel Cost	Rs./MT	1800	1890	1985	2084	2188	2297	2412	2533	2659	2792	2932	3079	3233	3394	3564	3742	3929	4126	4332	4549
Specific fuel consumption	kg/kWh	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Variable Cost	Rs. Lakh	163.99	211.92	222.52	233.64	245.33	257.59	270.47	284.00	298.20	313.11	328.76	345.20	362.46	380.58	399.61	419.59	440.57	462.60	485.73	510.02
<b>Variable Cost</b>	<b>Rs./kWh</b>	<b>3.24</b>	<b>3.40</b>	<b>3.57</b>	<b>3.75</b>	<b>3.93</b>	<b>4.13</b>	<b>4.34</b>	<b>4.55</b>	<b>4.78</b>	<b>5.02</b>	<b>5.27</b>	<b>5.53</b>	<b>5.81</b>	<b>6.10</b>	<b>6.41</b>	<b>6.73</b>	<b>7.06</b>	<b>7.42</b>	<b>7.79</b>	<b>8.18</b>
<b>Total Cost</b>	<b>Rs./kWh</b>	<b>7.68</b>	<b>6.94</b>	<b>7.04</b>	<b>7.15</b>	<b>7.27</b>	<b>7.40</b>	<b>7.54</b>	<b>7.70</b>	<b>7.87</b>	<b>8.06</b>	<b>7.60</b>	<b>7.94</b>	<b>8.31</b>	<b>8.69</b>	<b>9.09</b>	<b>9.51</b>	<b>9.95</b>	<b>10.42</b>	<b>10.90</b>	<b>11.42</b>
<b>Levelised Tariff</b>																					
Discount Factor		1.00	0.89	0.79	0.70	0.62	0.55	0.49	0.44	0.39	0.34	0.31	0.27	0.24	0.21	0.19	0.17	0.15	0.13	0.12	0.10
<b>Levelised Fixed Cost</b>	<b>Rs./kWh</b>																				
<b>Levelised Variable Cost</b>	<b>Rs./kWh</b>																				
<b>Levelised Total Cost</b>	<b>Rs./kWh</b>																				
<b>Impact of Tipping Fee on Variable Cost</b>																					
Tipping Fee	Rs./MT	1431	1503	1578	1657	1739	1826	1918	2014	2114	2220	2331	2447	2570	2698	2833	2975	3124	3280	3444	3616
<b>Impact of Tipping Fee</b>	<b>Rs./kWh</b>	<b>2.57</b>	<b>2.70</b>	<b>2.84</b>	<b>2.98</b>	<b>3.13</b>	<b>3.28</b>	<b>3.45</b>	<b>3.62</b>	<b>3.80</b>	<b>3.99</b>	<b>4.19</b>	<b>4.40</b>	<b>4.62</b>	<b>4.85</b>	<b>5.09</b>	<b>5.35</b>	<b>5.62</b>	<b>5.90</b>	<b>6.19</b>	<b>6.50</b>
<b>Levelised impact of Tipping Fee</b>	<b>Rs./kWh</b>																				