

## Summary of Tariff Petition for BECL 2 x 250 MW Lignite based Thermal Power Plant at Bhavnagar

In terms of sections 61, 62, 64 and 86 of the Electricity Act, 2003, the tariff for the generation and sale of electricity by Bhavnagar Energy Company Limited (“BECL”) to Gujarat Urja Vikas Nigam Limited (“GUVNL”) is regulated by the State Commission. Accordingly, BECL has filed its Petition No. 1559/2016 for determination of Tariff for FY 2015-16 and FY 2016-17 under Multi Year Tariff (MYT) Framework Regulations issued by GERC. The salient features of the BECL Petition No. 1559/2016 are summarized in the table below:

S.No	Particulars	Units	FY 2015-16 (Projection)	FY 2016-17 (Projection)
1	Installed Capacity	MW	500.00	500.00
2	Actual Capital Expenditure Incurred till 31.10.2015	Rs Cr	4124.94	4823.10
3	Variable Cost per Unit	Rs/kWh	2.05	2.15

### Key Assumptions are summarised as below:

- Unit-1 will Commission on 30<sup>th</sup> January 2016 and Unit-2 will commission on 15<sup>th</sup> March 2016
- For FY 2015-16, BECL has considered Capital Expenditure incurred till 31.10.2015 of Rs 4124.94 Crore for capitalization. The same has been certified by statutory auditor of the company.
- Capitalisation at end of FY 2016-17 is assumed as total projected capital expenditure including additional capitalisation at Rs 4823.10 Crore.
- Funding source of capitalisation at end of FY 2015-16 has been assumed as actual funding as on 31.10.2015. Funding source of capitalisation at end of FY 2016-17 has been assumed as total debt and equity planned to be availed. The same is illustrated in below table:

Funding Source (Rs Crore)		
Source	Actual as on 31.10.2015	Estimated as on 31.03.2017
Debt	2896.57	3600.00
Share Capital	775.63	1223.10
Long –Term Liability (Retention amount)	258.56	0.00
Short-Term Loan	151.00	0.00
Creditor	72.25	0.00
Net Current Liability	-29.07	0.00
<b>Total</b>	<b>4124.94</b>	<b>4823.10</b>

## Tariff Components

1. Regulation 27.2.2 of GERC MYT Regulations regarding tariff of a generating station governed by PPA states that:

*“Where, as on the date of effectiveness of these Regulations, the power purchase agreement or arrangement between a Generating Company and a Distribution Licensee for supply of electricity from an existing generating station has not been approved by the Commission or the tariff contained therein has not been adopted by the Commission or where there is no power purchase agreement or arrangement, the supply of electricity by such Generating Company to such Distribution Licensee after the date of effectiveness of these Regulations shall be in accordance with a power purchase agreement approved by the Commission: ”*

2. PPA between BECL and GUVNL was signed on November 2010, however the same was approved by Hon’ble Commission on 26.06.2011 i.e after effectiveness of GERC MYT Regulations, 2011. Hence the supply of electricity including matters of billing and tariff between BECL and GUVNL needs to be governed by PPA approved by Hon’ble Commission.
3. As per clause 5.1.3 of the said PPA, monthly tariff except the parameters agreed at clause 5.2 shall consist of the components as specified in the GERC Terms and Conditions of Tariff Regulation applicable from time to time which for purpose of FY 2015-16 is GERC MYT Regulation, 2011. The tariff proposed is for BECL 500 MW generating station as a whole. Since Hon’ble GERC has not come up with new MYT Regulations for next control period (2016-21) BECL is also proposing tariff for FY 2016-17 as per GERC MYT Regulations, 2011.

## **Depreciation**

4. Depreciation has been arrived at by applying 5.28% to average of opening and closing capitalization of the Project for FY 2015-16 and FY 2016-17.

<b>Depreciation For FY 2015-16 and FY 2016-17(Rs Crore)</b>		
<b>Particulars</b>	<b>FY 2015-16</b>	<b>FY 2016-17</b>
Opening GFA	48.89	4124.94
GFA Addition	4076.05	629.62
Closing GFA	4124.94	4754.56
Average GFA	2086.92	4439.75
Rate of Depreciation	5.28%	5.28%
<b>Depreciation Charged</b>	<b>110.19</b>	<b>234.42</b>

## Return on Equity (RoE)

5. The total equity as on 31.10.2015 stands at Rs. 775.63 Crore out of total project cost of Rs 4124.94 Crore. The equity employed at end of FY 2016-17 is projected to reach Rs. 1223.10 Crore.
6. At the start of FY 2015-16 since the power project was not capitalised, opening equity was nil. At the end of FY 2015-16 equity employed as on 31.10.2015 has been considered. Projected equity of Rs 1223.10 Crore has been considered as closing equity of FY 2016-17. As per regulation 38.1 of GERC MYT Regulations, 2011 for calculation of RoE, 50% of equity portion of capital cost put to use in a particular year has been considered.

<b>RoE for FY 2015-16 and FY 2016-17</b>		
<b>Year</b>	<b>2015-16</b>	<b>2016-17</b>
Normative Opening Equity	0.00	775.63
Addition	775.63	447.47
Normative Loan (Excess Equity)	0.00	0.00
Closing Equity	775.63	1223.10
Rate of Return on Equity	14.00%	14.00%
Average Equity	387.82	999.37
<b>Return on Equity</b>	<b>54.29</b>	<b>139.91</b>

## Interest on Long-Term Loan

7. Long-Term loan for purpose of calculation of Interest cost corresponding to start of FY 2015-16 has been taken as nil. For loans at closing of FY 2015-16, loan as certified in audited capex statement of 31.10.2015 has been considered. Projected total debt of Rs 3600 Crore has been considered as closing debt of FY 2016-17.
8. As per Regulation 39.3 of GERC MYT Regulations, 2011 repayment for the year has been taken equal to the depreciation as submitted for approval. Further as per Regulation 39.5 of GERC MYT Regulations, 2011 rate of interest has been taken as weighted average rate of interest as existing in start of respective FY, calculated on the basis of the actual loan portfolio.

<b>Calculation of Interest FY 2015-16 and FY 2016-17(Rs Crore)</b>		
<b>Year</b>	<b>2015-16</b>	<b>2016-17</b>
Normative Opening Loan	0.00	2937.38
Addition	3047.57	552.43
Normative Loan (Excess Equity)	0.00	0

<b>Calculation of Interest FY 2015-16 and FY 2016-17(Rs Crore)</b>		
<b>Year</b>	<b>2015-16</b>	<b>2016-17</b>
Repayment (Depreciation)	110.19	234.42
Closing Loan	2937.38	3255.39
Weighted Average Interest Rate	10.45%	10.45%
Average Loan	1468.69	3096.39
<b>Interest Expense</b>	<b>153.48</b>	<b>323.57</b>

### Interest of Working Capital

9. Working Capital has been calculated as per Regulation 41.1 of GERC MYT Regulations, 2011. The rate of interest on working capital is to be taken at a rate equal to the State Bank Advance Rate (SBAR) as on 1st April of the financial year i.e for FY 2015-16 as 14.75% and for FY 2016-17 as 14.05%

<b>IWC for FY 2015-16 and FY 2016-17 (Rs Crore)</b>			
<b>Particulars</b>	<b>Period</b>	<b>2015-16</b>	<b>2016-17</b>
Fuel Cost	1.5 Months	62.50	65.63
Secondary Fuel stock	2 Months	16.77	17.52
O & M expenses	1 Month	11.26	11.90
Maintenance Spares	1% of Capital Cost	41.25	48.23
Receivables	1 Month	90.54	125.72
Total Working Capital		222.32	268.99
Rate of Interest	State Bank Advance	14.75%	14.05%
<b>Interest on Working Capital</b>		<b>32.79</b>	<b>37.79</b>

### Operation & Maintenance Expenditure

10. As per Regulation 56 (a) of GERC MYT Regulations, 2011 O&M Expense for lignite base plant for FY 2015-16 is Rs 27.02 Lakhs/MW and hence the same is taken as O&M Expense of FY 2015-16. For FY 2016-17 O&M Expense has been escalated by 5.70% and O&M expense of Rs 28.56 Lakhs/MW has been projected. The total annual O&M Expense of the plant for FY 2015-16 and FY 2016-17 is as per below table:

<b>Calculation of O&amp;M Expense FY 2015-16 and FY 2016-17 (Rs Crore)</b>		
<b>Year</b>	<b>2015-16</b>	<b>2016-17</b>
O&M Charges (Rs Lakhs/MW)	27.02	28.56
Capacity (MW)	500	500
O&M Expense (Rs Crore)	135.10	142.80

## Income-Tax and SLDC Charges

11. SLDC Charges & Fees has been determined as per actual rate

<b>Calculation of SLDC Charges</b>		
<b>Year</b>	<b>2015-16</b>	<b>2016-17</b>
SLDC charges per Month (Rs/MW)	193	193
Month of Operation	2	12
Capacity (MW)	500	500
Total SLDC Charges Expense (Rs Crore)	0.019	0.116

<b>Calculation of SLDC Fees</b>		
<b>Year</b>	<b>2015-16</b>	<b>2016-17</b>
SLDC Fees per Quarter (Rs /MW)	[.]	[.]
Quarter of Operation	1	4
Capacity (MW)	500	500
Total SLDC Fees Expense (Rs Crore)		

As on date actual rate of SLDC fees is not known, hence Hon'ble commission is requested to approve the same on actual basis.

12. Income-Tax has been determined by applying MAT rate on proposed RoE

<b>Calculation of Income Tax for FY 2015-16 and FY 2016-17 (Rs Crore)</b>		
<b>Year</b>	<b>2015-16</b>	<b>2016-17</b>
Income Tax (Rs Crore)	10.04	25.88

## Fuel Cost

13. or calculating Fuel Expenditure BECL has considered technical parameters as per schedule 5.2 of the PPA signed between BECL and GUVNL i.e 2623 kCal/kWh of SHR and 11% Auxiliary Consumption. Since secondary oil consumption has not been specified in the said PPA, the same has been taken as per GERC MYT Regulations, 2011 i.e 1.25 ml/kWh. The plant is a non-pit head plant transit loss of 0.80% has been taken as per GERC MYT Regulations, 2011.

14. Gross Calorific Value (GCV) of secondary fuel (oil) has been taken as per actual weighted average price and GCV of Kutch Lignite Power Plant –IV for FY 2013-14 as per GERC Order dated 31-03-2015 regarding Truing-up for FY 2013-14. GCV of Lignite is taken as 2600 kCal/kg
15. Cost of Fuels – Lignite, Limestone and Secondary Oil is taken as per current market rate or existing agreement with suppliers. As per Fuel agreement 5 % escalation has been considered in weighted average price of Lignite and Limestone for FY 2016-17.
16. Based on above assumptions fuel cost has been determined as below:

<b>Cost of fuel</b>			
<b>Parameter</b>	<b>Units</b>	<b>2015-16</b>	<b>2016-17</b>
Capacity	in MW	500.00	500.00
PLF	in %	75%	75%
Gross Generation	in MU	3294.00	3294.00
Auxiliary Energy Consumption	in %	11%	11%
Generation (Ex-bus)	in MU	2931.66	2931.66
Station Heat Rate (SHR)	Kcal/kwh	2623.00	2623.00
Specific Oil Consumption	ml/kwh	1.25	1.25
Specific Limestone Consumption	kg/kWh	0.26	0.26
Gross Calorific Value of Oil	Kcal/litre	10283.00	10283.00
Gross Calorific Value of Lignite	K.cal/Kg	2600.00	2600.00
Overall Heat	G.cal	8640162.00	8640162.00
Heat from Oil	G.cal	42340.25	42340.25
Heat from Lignite	G.cal	8597821.75	8597821.75
Oil Consumption	Kl	4117.50	4117.50
Limestone Consumption	MT	856440.00	856440.00
Lignite Consumption	MT	3333522.70	3333522.70
Cost of Oil	Rs/Kl	25910.00	25910.00
Cost of Limestone	Rs/MT	1050.00	1102.50
Cost of Lignite	Rs/MT	1500.00	1575.00
Total Cost of Oil	Rs Crores	10.67	10.67
Total Cost of Limestone	Rs Crores	89.93	94.42
Total Cost of Lignite	Rs Crores	500.03	525.03
<b>Per Unit Variable Cost</b>	<b>Rs/ Unit</b>	<b>2.05</b>	<b>2.15</b>

## **Recovery of Tariff**

17. Fixed Cost would be recovered pro-rata for FY 2015-16 since commissioning of both units as per regulation 59.2 (a) of GERC MYT Regulations 2011.
18. Variable Cost would be recovered as per number of net units generated in FY 2015-16 and FY 2016-17 after CoD of respective units.