

**ODISHA ELECTRICITY REGULATORY COMMISSION  
PLOT NO. 4, CHUNOKOLI, SHAILASHREE VIHAR,  
CHANDRASEKHARPUR,  
BHUBANESWAR-751021**

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**Present:      Shri U N Behera, Chairperson  
                 Shri A K Das, Member**

**Case No. 95/2013**

M/s Sesa Sterlite Ltd. (Presently M/s. Vedanta Ltd. )      ..... Petitioner  
                 Vrs.  
M/s GRIDCO Ltd. & Others      ..... Respondents

**In the matter of:**      **An application under Sections 61, 62 & 86 of the Electricity Act, 2003 read with Section 21 of the OER Act, 1995 along with OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 and other enabling provisions seeking approval of Multi-Year Tariff for supply of power for FY 2014-15 to FY 2018-19 in terms of the consolidated PPA executed between the applicant and GRIDCO Ltd.**

**For Petitioner:**      Shri Satyakam S., Advocate, Shri Vikash Jain, VP (Legal), Shri Aditya Pyasi, (AGM-Regulatory), Shri Ninad Nigam, Asso. Manager (Regulatory), Shri Vikash Kumar, AGM (Fin), Shri Abhishek Singh, Asst. Manager (Legal), M/s. Vedanta Ltd.

**For Respondents:**      Shri U N Mishra, CGM (PP), Shri S Samal, Ms.Susmita Mohanty, Manager (Elect.) GRIDCO Ltd., Shri S K Puri, Sr. GM (RT&C), OPTCL, Shri P S Sahu, Sr. GM (PS), SLDC and Ms. Niharika Pattanaik, ALO, DoE, GoO.

**Date of Hearing: 04.07.2017**

**Date of Order:29.06.2018**

**ORDER**

The petitioner, M/s Vedanta Ltd. (previously known as Sasa Sterlite Ltd.) has filed the present application before this Commission under Sections 61, 62 and 86 of the Electricity Act, 2003 and other enabling provisions for determination of generation tariff of state's share of power from its 4x600 MW thermal generating stations at Jharsuguda for FY 2014-15 to FY 2018-19, pursuant to the order of the Commission dated 12.06.2013. The Commission vide its order dated 12.06.2013 passed in Case Nos. 117/2009, 31/2010 and 56/2012 had determined the tariff for supply of power to GRIDCO for the period from November, 2010 to March, 2014 and also directed the petitioner to file tariff petition for the FY 2014-15 on or before 01.01.2014. Accordingly, M/s Vedanta Ltd. had filed the present petition on 26.12.2013 for determination tariff of FY 2014-15 to 2018-19 which was listed as Case No. 95/2013.

The generating station with a capacity of 2400 MW comprises of four units of 600 MW each and the said units were declared under commercial operation on 10.11.2010, 30.03.2011, 19.08.2011 and 26.04.2012 respectively.

2. In the meantime, OERC Generation Tariff Regulation, 2014 came into force on 10.10.2014 for the control period FY 2014-15 to 2018-19. The Commission vide their letter dated 27.10.2014 directed the Petitioner to file the revised application as per the Regulation and the Petitioner accordingly filed the revised application on 15.12.2014 for the determination of tariff for the period FY 2014-15 to 2018-19 in line with OERC Regulation, 2014. The case was heard on 07.04.2015 on the question of admission. During hearing the Commission received a letter from the Legal counsel of M/s. SSL Ltd. regarding identification of unit-4 of the generating station for captive use and its consequential effect on MoU, PPA as well as the present petition for tariff determination. The same could not be clarified by representative of the petitioner and he prayed for some time to file the written submission. The DoE, GoO, OPTCL & SLDC were also impleaded as respondents. GRIDCO in its preliminary submission on 06.04.2015 prayed the Commission to direct the Petitioner to clarify its installed capacity and declared capacity for calculation of PAFM/ PAFY by SLDC for calculation of tariff. Accordingly the Commission in their interim order dated 09.04.2015 directed the petitioner to comply with the matter. The Petitioner filed an application before the Commission for conversion of its units I, III and IV to CGP. Since OERC Generation Regulation came into force in 2014 the tariff of the Vedanta Ltd. shall be determined as per the said Regulation. GRIDCO in its reply submitted that the Petitioner may resubmit the MYT application for the control period 2014-19 after disposal of the Case No. 38/2016 (Determination of tariff for FY 2010-11 to 2013-14).
3. OERC order dated 12.06.2013 in Case No. 117/2009, 31/ 2010 and 56/2012 was challenged by the Petitioner before APTEL in Appeal No. 25/2014 contesting Commission's consideration of Debt Equity structure on capital expenditure and not taking into account the interest free loan received from free reserve of its holding company as normative loan as per the CERC Regulations, 2009. On 10.05.2016, the APTEL agreed to views of the State Commission in absence of the audited accounts of the amalgamated units as on the date of passing of the impugned order of the Commission. Hon'ble APTEL further directed that the State Commission would again examine the issue as and when the consolidated audited accounts of new amalgamated company is made available to them along with the revised debt equity structure and

all other relevant details. Accordingly, the Petitioner had filed the tariff application for the period 01.01.2011 to 31.03.2014 registered as Case No.- 38 of 2016 with consolidated audited accounts of the amalgamated company. To verify the capital cost, debt equity structure and IDC of the petitioner, the Commission had appointed an independent audit firm- Bal & Co., Chartered Accountants as per existing Regulation, 2014. The auditor had submitted its report on 11.11.2016. Accordingly, the Commission by order dated 26.02.2018 in Petition No. 38/2016 has approved the tariff of the generating station for the period FY 2011-14 considering the closing capital cost of Rs.8100.69 crore as on 31.03.2014. The details of Annual Fixed Charges as approved in respect of the generating station for the period from 01.01.2011 up to the end of FY 2013-14 in the order dated 26.02.2018 in Petition No. 38/2016 is reproduced below:

<b>(Rs. Crore)</b>							
	<b>Tariff for Unit- II</b>	<b>Tariff for Unit- I &amp; II</b>	<b>Tariff for Unit- I &amp; II</b>	<b>Tariff for Unit- I, II &amp; III</b>	<b>Tariff for Unit- I, II &amp; III</b>	<b>Tariff for Unit- I, II, III &amp; IV</b>	<b>Tariff for Unit- I, II, III &amp; IV</b>
	<b>01/01/2011 to 29/03/2011</b>	<b>30/03/2011 to 31/03/2011</b>	<b>01/04/2011 to 18/08/2011</b>	<b>19/08/2011 to 31/03/2012</b>	<b>01/04/2012 to 25/04/2012</b>	<b>26/04/2012 to 31/03/2013</b>	<b>01/04/2013 to 31/03/2014</b>
Return on Equity	160.71	239.74	239.97	351.19	351.19	464.39	467.65
Interest on term loan	137.33	204.92	227.34	325.18	384.49	470.46	483.20
Depreciation (SLM)	143.07	213.43	213.43	312.34	312.34	413.02	415.91
O&M Expenses	74.22	148.44	156.96	227.59	240.47	315.10	333.34
Interest on Working capital	29.55	54.63	61.59	90.01	95.15	125.49	126.94
Cost of secondary Oil	23.66	47.31	47.31	70.97	70.97	94.62	94.62
<b>Total Cost</b>	<b>568.53</b>	<b>908.46</b>	<b>946.60</b>	<b>1,377.27</b>	<b>1,454.59</b>	<b>1,883.09</b>	<b>1,921.66</b>

**Note: All figures are on annualized basis.**

4. Meanwhile, the Petitioner had filed modified application on 15.12.2014 for determination of multi-year tariff for the said generating station for the period from FY 2014-15 to FY 2018-19 basing on the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, with prayers to admit the case and approve the multi-year tariff as claimed by the Petitioner. In accordance with the provisions of the OERC (Terms and Conditions for determination of Generation Tariff) Regulations 2014. Accordingly, the following annual fixed charges are claimed by the petitioner for the period 2014-19:

<b>Annual Fixed Cost (Rs. in Crore)</b>					
<b>Year</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Return on Equity	494.52	501.44	511.43	524.15	532.44
Interest on term loan	448.81	402.27	373.23	345.48	311.76
Depreciation (SLM)	405.98	411.04	418.57	428.76	435.48
O&M Expenses	345.60	367.44	390.48	415.20	441.12
Construction of Ash Dykes	20.00	20.00	20.00	20.00	20.00
Interest on Working capital	221.05	208.78	209.90	211.27	212.40
Tariff Petition Fees	0.25				
<b>Total Cost</b>	<b>494.52</b>	<b>501.44</b>	<b>511.43</b>	<b>524.15</b>	<b>532.44</b>

5. GRIDCO in its submission stated that the present Multi Year Tariff petition is for determining the tariff for the control period FY 2014-15 to FY 2018-19 applicable to the thermal station of the petitioner. The present petition may be heard in detail only after disposal of the Case No. 38 of 2016 i.e. the petition for determination of tariff of the generating station for FY 2010-11 to FY 2013-14.
6. Further, GRIDCO submitted that as per Commission's order dated 27.01.2016 in Case No. 21 of 2015, out of the four IPP Units (each of 600 MW), three units have been converted to CGP units with effect from 1<sup>st</sup> April, 2015 except Unit#2 (600 MW) which remains as the only IPP unit. Therefore the thermal station of the petitioner is now having both CGP as well as IPP units for the rest of the four years of the said control period. The Commission may appreciate the fact that the present MYT application is being filed under Section 61 and 62 of the Act, 2003 which stipulates determination of tariff of the generating company, that is in respect of an Independent Power Plant and not for a captive generating plant.
7. Though the petitioner has filed the MYT application for control period 2014-19 as per the Regulations 2.2 & 2.5 of the said Tariff Regulations of the Commission, the same may not be made applicable to the petitioner's case as subsequently out of four, three of its Units have been converted to CGP.
8. Therefore, even when the petitioner shall supply power to GRIDCO from its CGP Units when there is low or no generation from the State dedicated IPP Unit (#2), then its cost shall be worked out as per the prevalent tariff of power as determined by the Commission for the IPP Unit only (i.e. Unit#2) which is not fair.
9. Further, GRIDCO submitted that the issue of transmission constraint in 220 kV D/C Vedanta Budhipadar line was considered limitedly by the Commission by allowing relaxed norms in Auxiliary Energy Consumption and Gross Station Heat Rate only. The Installed capacity of a Unit under no circumstances can be changed/modified on account of transmission constraint in transmission lines, as per the definition envisaged in the Tariff Regulations by CERC and OERC from time to time. The 400 kV D/C Vedanta-Meramundali line have been synchronized with the STU and GRIDCO has been availing power from the petitioner through the said transmission line as well as the LILO points with CTU. Under exigencies, GRIDCO also avails power through the 220 kV D/C Venanta-Budhipadar transmission line. Therefore,

issue of transmission constraint may not be considered in the present MYT application for the period 2014-19.

10. M/s Vedanta in its rejoinder submitted that the Commission vide order dt.27.01.2016 in case No.21/2015 declared that units 1,3 and 4 of 4 x 600 MW power plant stood converted to CGP with effect from 01.04.2015 and Unit-2 would continue to supply power to the state. The present petition does not require any amendment in light of the fifth proviso to Regulation 2.2 of the Generation Regulations. The same is reproduced below for ease of reference:

*“Provided that where only a part of the generation capacity of a generating station is tied up for supplying power to the beneficiaries through long term power purchase agreement and the balance part of the generation capacity have not been tied up for supplying power to the beneficiaries, the tariff of the generating station shall be determined with reference to the capital cost of the entire project, but the tariff so determined shall be applicable corresponding to the capacity contracted for supply to the beneficiaries.”*

11. From the above it is clear that Unit-2 of the generating station is ‘tied up for supplying power’ to GRIDCO, a beneficiary through a long term Power Purchase Agreement (to the extent modified by the order of the Commission in Case No. 21 of 2015). Therefore, the tariff for the power supplied from Unit-2 has to be determined with reference to the capital cost of the entire project, but the tariff so determined shall be applicable corresponding to the capacity contracted for supply to GRIDCO. This has been laid down by the Generation Regulations issued by the Commission and ratified by the State Legislature. Therefore, the contention of GRIDCO that the instant petition needs to be re-submitted/re-filed is baseless and vexatious.
12. The Petitioner further, submitted that any objections to maintainability have to be taken at the first instance and GRIDCO is estopped and precluded from raising this objection after a period of over two years from the date of filing of the instant petition and having already filed its reply to the present petition on 6.4.2015.
13. Further, on GRIDCO’s contention that the instant petition cannot be adjudicated upon as long as Case No. 38/2016 is not disposed off, the Petitioner submitted that the tariff assessment in Case No. 38/2016 is limited to the capital cost of the project, in light of the revised debt-equity structure as a result of the merger. The same is filed to determine the whole tariff of the generating station, i.e., capacity charges and variable charges of tariff for the Control period 2014-19. Thus, it is independent of Case No. 38/2016 and should be treated as such. As submitted above, Unit-2 of the generating station is ‘tied up for supplying power’ to GRIDCO, through a long term Power

Purchase Agreement to the extent modified by the order of the Commission in Case No. 21 of 2015. Therefore, the tariff for the power supplied from Unit-2 has to be determined with reference to the capital cost of the entire project, but the tariff so determined shall be applicable corresponding to the capacity contracted for supply to GRIDCO in terms of the fifth proviso to Regulation 2.2 of OERC Generation Regulations, 2014.

14. Heard the parties at length. We now 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.
15. The OERC (Terms and Conditions for determination of Generation tariff) Regulations, 2014 was published in the Odisha gazette on 10.10.2014 and from the date of publication the said Regulation comes into force in the State. Prior to that, the commission had determined the tariff of the present IPP for the control period FY 2010-11 to FY 2013-14 based on CERC Tariff Regulations, 2009. With effect from 10.10.2014, the Commission would be guided by the principles laid down in CERC (Terms & Conditions of Tariff) Regulations, 2009 up to 09.10.2014 and by the principles laid down in OERC (Terms and Conditions for determination of Generation tariff) Regulations, 2014, Tariff Policy and other statutory provisions for the period 10.10.2014 to 31.03.2019 for determining the generation tariff. So, the Commission, based on the principles above has determined the tariff of the generating station for the financial year 2014-2019. While doing so, the Commission has also considered the petition and all its supplementary information / clarifications made by them during the hearing. Objections raised by GRIDCO and others and rejoinder of M/s. Vedanta Ltd. has also been taken into account by the Commission.
16. It is observed that the present petition is filed to determine the tariff of the Control period 2014-19, which is independent of Case No. 38/2016 i.e. limited to the capital cost of the project, in light of the revised debt-equity structure as a result of the merger as per orders of the Hon'ble APTEL. Unit-2 of the generating station is 'tied up for supplying power' to GRIDCO, a beneficiary through a long term Power Purchase Agreement to the extent modified by the order of the Commission in Case No. 21 of 2015. Therefore, the tariff for the power supplied from Unit-2 has to be determined with reference to the capital cost of the entire project. It shall be applicable corresponding to the capacity contracted for supply to GRIDCO in terms of the fifth proviso to Regulation 2.2 of OERC Generation Regulations, 2014.

17. Taking the date of notification of OERC Generation tariff Regulations, 2014, into consideration, the tariff period for M/s Vedanta Ltd. has been divided into six block periods as given in the table below.

2014-15 (from 01.04.14 to 09.10.14)	2014-15 (from 10.10.14 to 31.03.15)	2015-16	2016-17	2017-18	2018-19
As per CERC Regulations, 2014	As per OERC Regulations, 2014				

**Operational Parameter**

**Determination of Plant Availability:**

18. The Petitioner has considered the Normative Annual Plant Availability Factor (NAPAF) at 85% as per Regulation 5.3(a) (i) of the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 and accordingly computed the gross generation for determination of tariff. Based on the projected availability of 85%, the Gross Generation is projected at 17870.40 MU for FY 2014-15 to FY 2018-19. The Commission, accordingly, approves the NAPAF of 85% for the Power Station.

**Determination of Station Heat Rate**

19. Regulation 5.3 (c) (i) of the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 specifies that the gross station heat rate for all existing coal based thermal generating stations should be as follows: (a) 2450 kcal/kWh for below 500 MW sets and (b) 2375 kCal/kWh for 500 MW sets and above. The Petitioner cited transmission constraints for operation of Unit -2 as per design specifications of 100% MCR shifting responsibility on GRIDCO for evacuation of its allotted capacity from the Power Station as per the PPA. Therefore, he submitted that as per Gross Station Heat Rate curve of the manufacturer at loading of 350 MW the Station Heat Rate should be considered as 2540 Kcal/kWh. It is also submitted that the Commission, in exercise of Regulation 7.13 (Power to Relax) of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, may approve the actual Gross Station Heat Rate of 2540 kcal/kWh for FY 2014-15 as the transmission line constraint is beyond the control of the Petitioner. For the rest period i.e FY 2015-16 to FY 2018-19 the Petitioner has requested that Gross Station Heat rate at 2375 kcal/kWh be considered .
20. GRIDCO stated that the 400 kV D/C Vedanta-Meramundali line has been synchronized with the STU to facilitate power flow from the Petitioner's station and also LILO points with CTU additionally. Under exigencies, GRIDCO also avails

power through the 220 kV D/C Vedanta-Budhipadar transmission line. Therefore, issue of transmission constraint is not in existence in the present MYT application for the period 2014-19. We agree with GRIDCO. Going by OERC norm, the Commission approves the Station Heat Rate as 2375 Kcal/Kwh for computing the energy charges for FY 2014-15 to FY 2018-19, as COD of all the four units of the generating station were completed prior to May, 2012.

**Determination of Specific Secondary fuel oil Consumption**

21. Regulation 5.3(d) (i) of the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 specifies the secondary fuel oil consumption (i.e. LDO) of 1.00 ml/kWh for coal based Generating Stations. Accordingly, the Petitioner has considered secondary fuel oil consumption of 1.00 ml/kWh for FY 2014-15 to FY 2018-19. Further, regulations 36 (D) of the CERC Tariff Regulations, 2014 specifies that the Specific Secondary Fuel Oil consumption should be considered at 0.5 ml/kWh. Since, for determining the generation tariff for the Control period we accept CERC norms before OERC Regulation became effective. The Commission approves the Specific Secondary Fuel Oil consumption as 0.5 ml/Kwh for the period 01.04.2014 to 09.10.2014 and 1.0 ml/Kwh for the period 10.10.2014 to FY 2018-19 for the subject Station.

**Determination of Auxiliary Consumption:**

22. M/s. Vedanta Ltd. submitted that Regulation 5.3 (e) (i) of the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 specifies the Auxiliary Consumption of 6.00% for coal based Generating Station with Unit size of 500 MW and above with steam driven boiler feed pump. The Unit size of the Petitioner's Generating Station is 600 MW and the boiler feed pump is steam driven boiler feed pump. However, as mentioned earlier, the normative Auxiliary Consumption of 6% for 600 MW Unit (i.e., 36 MW) works out to 10.29% considering the actual loading of 350 MW. The petitioner prays that the commission, in exercise of Regulation 7.13(Power to Relax) of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, may approve the Auxiliary Consumption of 10.29% for FY 2014-15 as the transmission line constraint is beyond the control of the Petitioner. In addition to that since M/s. Vedanta utilizes static excitation system and use auxiliary power for meeting environmental norm its requirement for auxiliary consumption is more than the norms prescribed in the Regulation. Therefore, taking into account the above reasons, the Petitioner has



claimed the Auxiliary Consumption of 10.29% FY 2014-15 and 6.94% for the period FY 2015-16 to FY 2018-19 for computing the energy charges for FY 2014-15 to FY 2018-19.

23. We do not agree with the contention of the Petitioner that due to transmission constraint they have not been able to generate at full capacity and inject the State quota of power to the State transmission system. All the four Units of the generating station of M/s. Vedanta are connected with CTU as well as STU system for evacuation of power. Therefore, the Commission accept the auxiliary consumption of 5.25 % for the period 01.04.2014 to 09.10.2014 as per CERC norms and 6.0% for the period 10.10.2014 to FY 2018-19 for the subject Thermal Power Stations of M/s. Vedanta following OERC Regulation for the said period. The percentage of auxiliary consumption at different period as approved by the Commission is given in the table below:

<b>Auxiliary consumption (in %)</b>						
	<b>2014-15 (from 01.04.14 to 09.10.14)</b>	<b>2014-15 (from 10.10.14 to 31.03.15)</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
	<b>As per CERC Regulations</b>	<b>As per OERC Regulations</b>				
Submitted by M/s Vedanta Ltd.	10.29%	6.94%	6.94%	6.94%	6.94%	6.94%
Approved by the Commission	5.25%	6.00%	6.00%	6.00%	6.00%	6.00%

#### **Determination of Capital Cost of the Project**

24. The petitioner submitted that the Commission has considered the opening capital cost of FY 2014-15 as Rs.8100.70 Crore. Further the petitioner submitted that as per Regulation 1.7(i) & Regulation 3.3 of OERC Regulations, 2014, the cut-off date for claiming additional capital expenditure is March, 2015. So, the petitioner intends to capitalise the assets amounting to Rs.84.82 crore during 2014-15 lying under capital advances and asset under construction. Further the petitioner submitted that amounts of Rs.143 crore, Rs.186 crore, Rs.233 crore and Rs.40 crore were incurred during 2015-16, 2016-17, 2017-18 and 2018-19 respectively by the petitioner after cut off date towards connection to PGCIL Pooling station, Rail connectivity, land for ash dykes, development of water reservoir etc. The Petitioner prays for these amounts to be allowed in the tariff as additional capitalisation. The details of capital cost proposed by the petitioner are as given below.

**Capital Cost (Rs. in Crore)**

<b>Year</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening capital cost	8,100.70	8,185.52	8,328.52	8,514.52	8,747.52
Add: Projected additional capital expenditure	84.82	143.00	186.00	233.00	40.00
Closing capital cost	8,185.52	8,328.52	8,514.52	8,747.52	8,787.52
<b>Average capital cost</b>	<b>8,143.11</b>	<b>8,257.02</b>	<b>8,421.52</b>	<b>8,631.02</b>	<b>8,767.52</b>

25. The Commission had appointed an independent statutory audit firm M/s. Bal & Company, Chartered Accountants under Regulation, 2.6 of the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, to verify the capital structure of the said thermal power plant of the petitioner in the present case. M/s. Bal & Company has submitted the report to the Commission vide its letter dated 28.05.2015. M/s. Bal & Company has submitted the capital cost considering additional capitalization for FY 2014-15 by the IPP. In his report, M/s Bal & Co has submitted the additional capital cost of Rs.14.00 crore for FY 2014-15 as against Rs.84.82 crore submitted by the petitioner. Based on the report of independent auditor, the Commission now allows an amount of Rs. 14.00 crore as additional capitalisation for FY 2014-15 to re-determine the Capital Cost and debt equity structure of the said IPP of M/s. Vedanta Ltd. Further, the petitioner has not submitted sufficient data to justify the additional expenditure carried out by the petitioner after the cut off date. So the Commission is not inclined to approve the same for the year 2015-16 to 2018-19. The details of capital cost approved by the Commission are given below.

	<b>(Rs. Cr.)</b>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening capital cost	8,100.69	8,114.69	8,114.69	8,114.69	8,114.69
Add: Projected additional capital expenditure	14.00				
Closing capital cost	8,114.69	8,114.69	8,114.69	8,114.69	8,114.69
<b>Average capital cost</b>	<b>8,107.69</b>	<b>8,114.69</b>	<b>8,114.69</b>	<b>8,114.69</b>	<b>8,114.69</b>

**Determination of Debt and Equity component of the project**

26. M/s Vedanta ltd. in its application submitted that due to the merger and creation of the amalgamated entity, viz., M/s. Sesa Sterlite Limited, the capital structure of the Petitioner has undergone a complete change. As per the merged entity accounts, the Petitioner has invested equity in excess of 30% of the Capital Cost of the project from its free reserves and therefore, prays to the Commission to consider the Debt : Equity ratio as 70:30, with the equity infused in excess of 30% of Capital Cost being considered as normative debt, with the corresponding interest cost being allowed for

recovery through tariffs in accordance with the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014. Accordingly, the Petitioner has requested to consider the opening equity for FY 2014-15 as Rs. 2430.21 crore. Further, it has submitted to consider the equity addition on account of additional capitalisation.

27. M/s Vedanta Ltd also submitted that as per Regulation 4.7 and 4.8 of the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, the Generating Company shall recover the tax on income from the beneficiaries. In line with the regulations, the Petitioner for FY 2014-15 till FY 2018-19 has considered the current MAT Rate of 20.961% for estimation of Tax on Income and prays to the Commission to approve the Tax on Income of Rs. 103.65 Crore, Rs.105.10 crore, Rs. 107.20 crore, Rs.109.87 crore and Rs.111.60 crore respectively for the years FY 14-15, FY 15-16, FY 16-17, FY 17-18 & FY 18-19.

28. As per Clause 3.6 of the OERC Regulation, 2014

*“For a project declared under commercial operation on or after 01.04.2014, 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 also that in case of a generating station where actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff.”*

The Commission has scrutinized the reports submitted by M/s. Bal & Co on 28.05.2015 and 11.11.2016 and has observed that the equity portion is more than 30% of the Project cost. Since the equity portion invested is more than the normative value as stated above the Commission consider 30% of the project cost as equity.

29. The Commission has considered base rate of 15.5% for computation of RoE. for the period 01.04.2014 to 09.10.2014 as per CERC norm (Regulation 24 & 25 of CERC Regulations) and 16.0% for the period 10.10.2014 to FY 2019 as per OERC norm (Regulation 4.6 & 4.7 of OERC Regulations). Tax on Income for the period 01.04.2014 to 09.10.2014 has been calculated as per CERC norm considering MAT rate of 20.961% which shall be passed through the tariff. Further, for the rest of the period i.e. from 10.10.2014 the tax on income shall be paid by the GRIDCO directly to the petitioner as per their share after prudence check according to (Regulation 4.7 & 4.8) OERC Regulations, 2014. The RoE amount for the above period is indicated in the table below.

(Rs. Cr.)

	2014-15 (from 01.04.14 to 09.10.14)	2014-15 (from 10.10.14 to 31.03.15)	2015-16	2016-17	2017-18	2018-19
	As per CERC Regulation	As per OERC Regulation				
Equity Amount proposed by the M/S Vedanta	2442.93	2442.93	2477.11	2526.46	2589.31	2630.26
Equity Amount Approved by the Commission	2432.31	2432.31	2434.41	2434.41	2434.41	2434.41
Rate of Return on Equity (base rate)	15.5%	16.0%	16.0%	16.0%	16.0%	16.0%
Rate of Return on Equity (pre tax) basic on mat rate of 20.961%	19.61%	Recovered directly from the beneficiaries as per Share.				
RoE approved by the Commission	476.99	389.17	389.51	389.51	389.51	389.51

Note: All figurers are on annualized basis.

### **Determination of Depreciation**

30. M/s Vedanta Ltd. has computed the depreciation in accordance with the rates of depreciation specified in the OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 considering capital cost including additional capitalisation. As per the OERC norms, the value base for the purpose of depreciation shall be the asset admitted by the Commission with weighted average rate of depreciation of 4.99%. Hence, the Commission has calculated depreciation considering OERC norms based on approved capital cost as mentioned in previous paragraph. Details of depreciation year-wise are given in the table below:

(Rs. Cr.)

	2014-15 (from 01.04.14 to 09.10.14)	2014-15 (from 10.10.14 to 31.03.15)	2015-16	2016-17	2017-18	2018-19
Proposed by M/S Vedanta Ltd.	405.98	405.98	411.04	418.57	428.76	435.48
Approved by the Commission	404.57	404.57	404.92	404.92	404.92	404.92

Note: All figurers are on annualized basis.

### **Determination of Interest on Loan Capital**

31. The Commission is guided by Clause 4.9 to 4.17 of OERC Generation Regulation, 2014 in determining the interest on loan capital. M/s Bal & Co in its report on 11.11.2016 has submitted the actual weighted avg. interest rate for the period from FY 2011 to 2014. Further, M/s Vedanta has submitted the weighted avg. interest rate for the period 2014-2019.

32. The Commission has considered the normative repayment of loan upto beginning of the year 2014 as per Commission's order dt. 26.02.2018 vide Case No. 38/2016. Accordingly, the interest on loan has been calculated for tariff purpose for the period 2014-2019 taking the weighted average rate of interest as submitted by M/s Vedanta Ltd. Accordingly, the interest on loan from different block periods has been calculated and given below.

	<b>(Rs. Cr.)</b>					
	<b>2014-15 (from 01.04.14 to 09.10.14)</b>	<b>2014-15 (from 10.10.14 to 31.03.15)</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Average net loan	4416.39	4214.10	3920.66	3515.74	3110.82	2705.90
Weighted average Interest rate (%)	10.31%	9.99%	9.99%	10.02%	10.02%	10.02%
Interest on Loan	455.33	421.16	391.67	352.28	311.70	271.13

### **O & M Expenses**

33. Clause (a) of Regulation 4.28 of the OERC Tariff Regulations 2014 provides the following O & M expenses norms for 600MW coal based generating stations as under.

<b>Year</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<i>O &amp; M cost Rs. in Lakh/MW for 600MW and above sets</i>	<i>14.40</i>	<i>15.31</i>	<i>16.27</i>	<i>17.30</i>	<i>18.38</i>

34. M/s. Vedanta Ltd. Submitted that as per above OERC Tariff Regulations, 2014, O & M expenses for the generating station have been calculated for the period from FY 2015 to FY 2019. Further, the petitioner has claimed an extra amount of Rs.20.00 Crore/Annum on account of expenditure incurred on construction of Ash Dykes in addition to O & M expenses allowed under OERC norm. The Commission has now allowed only the normative O&M expenses as per OERC norms. The expenditure on construction of Ash Dykes cannot be considered as a pass through under O&M. The details of O & M expenses as approved by the Commission are given in the table below.

	<b>(Rs. in Cr.)</b>					
	<b>2014-15 (from 01.04.14 to 09.10.14)</b>	<b>2014-15 (from 10.10.14 to 31.03.15)</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Proposed by M/S Vedanta Ltd. incl cost of Ash Dykes	365.60	365.60	387.44	410.48	435.20	461.12
Approved by the Commission	345.60	345.60	367.44	390.48	415.20	441.12

Note: All figures are on annualized basis.

## Interest on Working Capital

35. Regulation 4.24 of the OERC Tariff Regulations 2014 provides that the working capital for coal based generating stations shall cover.
- Cost of coal, if applicable, for 1 month for pit-head generating stations and two months for non-pit-head generating stations, for generation corresponding to the normative annual plant availability factor;
  - Cost of secondary fuel oil for one month 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;
  - Maintenance spares @ 20% of operation and maintenance expenses specified in Regulation 4.28;
  - Receivables equivalent to one month of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor; and
  - Operation and maintenance expenses for one month. .
36. Further, Regulation 4.26 of the OERC Tariff Regulations 2014 provides that *Rate of interest on working capital shall be on normative basis and shall be equal to the SBI Base Rate plus 300 basis points as on 1.4.2014 or on 1<sup>st</sup> April of the year in which the generating station or a unit thereof, is declared under commercial operation, whichever is later.*
37. M/s Vedanta Ltd. submitted that as per Regulation 4.24 & 4.26 of OERC Tariff regulation the Coal Cost, Cost of Secondary fuel oil, normative O & M Expenses, cost of Maintenance spares & receivables have been computed at normative availability of 85% for the purpose of working capital as specified in the Tariff regulations. As specified in 4.26 of the above regulations, rate of interest on working capital has been taken at 13.0% for the tariff period 2014 to 2019. The details proposed by M/s Vedanta Ltd are given in the table below.

	<b>(Rs. in Cr.)</b>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Oil Cost for two months	9.42	9.42	9.42	9.42	9.42
Coal cost for 2 months for non Pit head Stations	625.79	577.55	577.55	577.55	577.55
O&M Cost for one month	28.80	30.62	32.54	34.60	36.76
Receivable for two months	967.29	914.88	916.99	920.53	921.92
Spares @ 20% of O & M expenses	69.12	73.49	78.10	83.04	88.22
<b>TOTAL</b>	<b>1700.42</b>	<b>1605.96</b>	<b>1614.59</b>	<b>1625.14</b>	<b>1633.88</b>
Rate of Interest on working capital (%)	13.0%	13.0%	13.0%	13.0%	13.0%
<b>INTEREST ON W.C.</b>	<b>221.05</b>	<b>208.77</b>	<b>209.90</b>	<b>211.27</b>	<b>212.40</b>

38. The Commission works out the interest on working capital based on the CERC Regulations for the period 01.04.2014 to 09.09.2014 and for the period 10.10.2014 to FY 2019 based on OERC Regulations, 2014 as follows:

<b>(Rs. in Crore)</b>							
	<b>2014-15 (from 01.04.14 to 09.10.14)</b>	<b>Parameters</b>	<b>2014-15 (from 10.10.14 to 31.03.15)</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>As per CERC Regulations, 2014</b>		<b>As per OERC Regulations, 2014</b>					
Oil Cost for two months	7.89	Oil Cost one month	7.89	7.89	7.89	7.89	7.89
Coal cost for 2 months for non Pit head Stations	284.94	Coal cost for 2 months for non Pit head Stations	284.34	284.34	284.34	284.34	284.34
O&M Cost for one month	28.80	O&M Cost for one month	28.80	30.62	32.54	34.60	36.76
Receivable for two months	595.42	Receivable for one month	287.44	286.92	285.61	284.36	283.20
Spares @ 20% of O & M expenses	69.12	Spares @ 20% of O & M expenses	69.12	73.49	78.10	83.04	88.22
<b>TOTAL</b>	<b>986.17</b>	<b>TOTAL</b>	<b>677.59</b>	<b>683.26</b>	<b>688.48</b>	<b>694.22</b>	<b>700.41</b>
Rate of Interest on working capital (%)	13.5 %	Rate of Interest on working capital (%)	13.0%	13.0%	13.0%	13.0%	13.0%
<b>INTEREST ON W.C.</b>	<b>133.13</b>	<b>INTEREST ON W.C.</b>	<b>88.09</b>	<b>88.82</b>	<b>89.50</b>	<b>90.25</b>	<b>91.05</b>

#### **Computation of Annual Capacity Charges**

39. On the principles as mentioned above the annual capacity charge of the IPP is determined. Accordingly, the Annual Fixed Charges approved the generating station for the period 2014-19 is given hereunder.

<b>(Rs. Crore)</b>						
	<b>2014-15 (from 01.04.14 to 09.10.14)</b>	<b>2014-15 (from 10.10.14 to 31.03.15)</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
	<b>As per CERC Regulations</b>	<b>As per OERC Regulations</b>				
Return on Equity	476.99	389.17	389.51	389.51	389.51	389.51
Interest on term loan	455.33	421.16	391.67	352.28	311.70	271.13
Depreciation (SLM)	404.57	404.57	404.92	404.92	404.92	404.92
O&M Expenses	345.60	345.60	367.44	390.48	415.20	441.12
Interest on Working capital	133.13	88.09	88.82	89.50	90.25	91.05
<b>Total Cost</b>	<b>1,815.63</b>	<b>1,648.59</b>	<b>1,642.37</b>	<b>1,626.69</b>	<b>1,611.58</b>	<b>1,597.73</b>

**Note: All figures are on annualized basis.**

40. The Capacity Charge payable to M/s Vedanta Ltd for a calendar month shall be calculated in accordance with the formula laid down in the OERC Regulations 4.29 to 4.31 & 6.9 for the Control period. M/s GRIDCO Ltd. shall pay the capacity charge to M/s Vedanta Ltd. in proportion to their share from the generating station as per approved PPA/orders of the Commission from time to time.

**Energy Charge Rate (ECR)**

41. Regulations 4.32 to 4.34 of the 2014 OERC Tariff Regulations provides as under:

*Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:*

*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 coal as fired in kCal per kg for coal based stations*

*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.*

*SFC = Specific fuel oil consumption in ml per kWh.*

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

*LPSFi=Weighted Average Landed Price of Secondary Fuel in Rs./ml during the month*

42. M/s Vedanta Ltd. in its application submitted that the Commission in its Order dated 12.06.2013 in Case No. 117/2009, Case No. 31/2010 and Case No. 56/2012, has not allowed the impact of actual usage of blended coal for supply of power to GRIDCO and has considered only the landed price of linkage coal for determining the Energy Charge Rate for FY 2013-14. The Petitioner also approached Hon'ble APTEL in appeal on this. He submits that coal is mainly procured from MCL under linkage from Talcher/IB Valley, MCL under e auction from IB Valley, Basundhra and Kulda mines, import through Vizag/Dhamra/Gangavaram ports, and from Washeries to meet the total coal requirement. Since the Petitioner's Generating Station is not a Pit Head Power Plant, accordingly, as per OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014 transit loss @ 0.8% is to be considered for all types of domestic coal. For imported coal transit loss @ 0.2% should be considered.



43. We observe that, M/s. Vedanta Ltd. has the following arrangements in place with M/s. MCL:
- (i) Letters of Assurance dated 25.06.2008 and 14.07.2010 issued by Mahanadi Coalfield to Sterlite Energy for supply of linkage coal to Unit II and Units I, III & IV respectively.
  - (ii) a) Fuel Supply Agreement dated 10.09.2011 between Mahanadi Coalfield and Sterlite Energy for supply of linkage coal for Unit-II with Annual Contracted Quantity of 25.70 Lakh tonnes of E/F grade coal and assurance of supply of at least 50% of ACQ. b) FSA between Mahanadi Coalfield and Sterlite Energy for ACQ of 23.15 lakh tonnes of linkage coal for Unit-I. (Assurance of supply was 50% of ACQ).
  - (iii) Amendment of FSA for Unit I to include Unit III on 20.01.2012 its scope and ACQ quantity increased to 46.30 lakh tones. Assurance of supply was 50% of ACQ.
  - (iv) Amendments of FSA for Unit II on 09.06.2012 to increase the assurance of supply from 50% to 80% of the Annual Contracted Quantity.
44. The Petitioner submitted that the generating station is utilising not only the linkage coal but also the imported/e-auction coal to meet the shortfall in the generation to supply power to GRIDCO. Since the power is being supplied from the Generating Station, as per Regulation 4.32 of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014, for determination of Energy Charge Rate, the cost of coal utilised for the Power Plant/station (all Units) has to be considered for tariff determination and recovered from all beneficiaries. The Petitioner is entitled to recover the average pooled cost of fuel utilised for the station from the beneficiaries including GRIDCO. Thus, for the purpose of tariff determination for sale of power to GRIDCO, a beneficiary, the cost of e-auction/import coal should be considered along with the linkage coal.
45. The Petitioner has considered the operational norms as submitted in this Petition and have estimated the Energy Charge Rate for FY 2014-15 till FY 2018-19 as shown in the Table below:

**Energy Charge Rate for FY 2014-15 to FY 2018-19**

<b>Particulars</b>	<b>FY 2014-15</b>	<b>FY 2015-16</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>	<b>FY 2018-19</b>
Capacity (MW)	2400	2400	2400	2400	2400
Gross Station Heat Rate (kcal/kWh)	2540	2375	2375	2375	2375
PLF	85%	85%	85%	85%	85%
Auxiliary consumption	10.29%	6.94%	6.94%	6.94%	6.94%
Total Fuel Cost (Rs Crores)	3867.77	3578.33	3578.33	3578.33	3578.33
Water Cess and Consumption (Rs. Crores)	Water Cess, Water Transfer charges and Electricity Duty to be reimbursed on actual on monthly basis				
Total Cost (Rs. Crores)	3867.77	3578.33	3578.33	3578.33	3578.33
Net Generation (MUs)	16031.54	16630.194	16630.194	16630.194	16630.194
Energy Charge Rate (Rs./kWh)	2.413	2.152	2.152	2.152	2.152

46. The Commission observes that the coal procured through administered price mechanism on the basis of long term PPA should not be diverted for industrial consumption /merchant sale of power. Since the pass through of Fuel Charge affords full protection to the Generator against potential losses on account of a rise in fuel prices, it follows that the benefit of reduced or concessional fuel prices cannot be retained by the Generator. As a result, Fuel Charge cannot be a profit source for the Generator and the principles for determination of Fuel Charge must ensure that costs are recovered on the basis of actuals, assuming that the Generator would function with the efficiency expected of a prudent and diligent operator. Fuel which is procured by the Generator through any form of concessional, preferential or captive allocation or sale by a Governmental Instrumentality shall be deemed as Concessional Fuel and earmarked for the benefit of the Utility. Fuel procured through e-auction and /or through import could be utilised for industrial consumption/ merchant sale of power through short term contract or through power exchange.
47. If linkage coal availability is higher than the requirement as per GRIDCO's share of power, the cost and GCV of linkage coal will be taken into consideration for tariff purpose. In the event it falls short, only for the balance coal for meeting the GRIDCO requirement, the weighted average cost of coal and GCV would be considered.
48. M/s. Vedanta has not submitted on record the actual GCV & Cost of Linkage coal though the petitioner is statutorily required to furnish such information for preceding three months of the tariff period 2014-19 as per Clause 4.25 of OERC generation tariff regulation. Therefore, the Commission has decided to compute fuel components for calculating energy charges in the working capital by taking the GCV & Cost of

coal as approved in the tariff order for FY 2013-14. Energy charges on the basis of above have been worked out as under:

**Energy Charge Rate ( Paise/ KWh)**

		<b>From 01.04.2014 to 09.10.2014 (as per CERC Generation Regulations,2014)</b>	<b>From 10.10.2014 to FY 2019 (as per OERC Generation Regulations,2014)</b>
Gross Station Heat Rate	Kcal/kWh	2375.00	2375.00
Aux. Energy Consumption	%	6.00	6.00
Sp. Oil Consumption	MI/Kwh	0.5	1.0
Weighted average GCV of oil	Kcal/l	9850.0	9850.0
Weighted average GCV of coal	Kcal/kg	3181.00	3181.00
Weighted average price of oil	Rs/Kl	52948.0	52948.0
Weighted average price of coal	Rs/MT	1284.00	1284.00
Rate of energy charge ex-bus	Paise/kWh	103.76	107.19

49. M/s. Vedanta Ltd. is required to compute the monthly energy charges in accordance with Clause 4.32 to 4.34 of OERC Regulations, 2014 which has already been stated in the beginning of this section basing on actual linkage coal price and GCV.
50. Billing of ECR shall be made to GRIDCO by M/s. Vedanta Ltd. on monthly basis with the details of actual coal/oil used for generation for scrutiny and payment. In addition to the above M/s. Vedanta Ltd. is entitled to recover other taxes / duty etc. levied by the Govt. or any statutory authority for the GRIDCO share of drawal of power. GRIDCO shall examine the coal and oil parameters periodically to satisfy itself of specification of coal used either by itself or by third party.
51. The annual fixed charges approved for the period 2014-19 as above are subject to truing-up in terms of Regulation 2.12 of the 2014 Tariff Regulations.

**Application Fee and Publication Expenses:**

52. The petitioner has sought the reimbursement of filing fee of tariff for the period 2014-19. The petitioner has deposited the filing fees for the period 2014-15 in terms of the provisions of the OERC Payment of Fees notification, 2009. Accordingly, in terms of Regulation 7.9 of the OERC Tariff Regulations, 2014, we direct that the petitioner shall be entitled to recover the filing fees directly from the respondents on submission of documentary evidences.
53. In conclusion, the Commission direct as follows:
  - (a) M/s. Vedanta Ltd. will submit the revised bill of fixed charges month-wise based on the approved Annual Fixed Charges and the month-wise Energy Charge as per formula given in this Order.

- (b) The tariff of M/s. Vedanta Ltd. – IPP, so determined in this Order is valid from 01.04.2014 to 31.03.2019.
- (c) The differential amount on account of these revised charges for the past period shall be recovered from GRIDCO in six half-yearly instalments without any interest. The first instalment shall be due on 30<sup>th</sup> day of presenting the bill in final shape in accordance with Regulation 6.6 of OERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2014. Any delay in payment of the bill shall attract surcharge as per the said Regulation.

54. Accordingly, the case is disposed of.

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

**Sd/-**  
**(U. N. Behera)**  
**Chairperson**