

**CENTRAL ELECTRICITY REGULATORY COMMISSION**

**NEW DELHI**

**Petition No. SM/03/2016 (Suo-Motu)**

**Coram:1. Shri Gireesh B. Pradhan, Chairperson**

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

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

**4. Shri M. K. Iyer, Member**

**Date of Order: 30<sup>th</sup> March 2016**

**IN THE MATTER OF**

Determination of levellised generic tariff for FY 2016-17 under Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012.

**ORDER**

1. The Commission has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012, on 06.02.2012 (hereinafter referred to as “the RE Tariff Regulations”), which provide for terms and conditions and the procedure for determination of tariff of the following categories of Renewable Energy (RE) generating stations:

- (a) Wind Power Project;
- (b) Small Hydro Projects;
- (c) Biomass Power Projects with Rankine Cycle technology;
- (d) Non-fossil fuel-based co-generation Plants;
- (e) Solar Photo Voltaic (PV) Projects;
- (f) Solar Thermal Power Projects;
- (g) Biomass Gasifier based Power Projects; and
- (h) Biogas based Power Project.

2. The Commission, in the meanwhile, has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) (First Amendment) Regulations, 2014 (hereinafter referred

to as “the RE Tariff (First Amendment) Regulations”), on 18.03.2014, wherein, various technical norms of Biomass Power Projects with Rankine Cycle technology have been amended. These norms are effective from the notification of the First Amendment Regulations.

3. The Commission, in the meanwhile, has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Second Amendment) Regulations, 2014 (hereinafter referred to as “the RE Tariff (Second Amendment) Regulations”), on 5.01.2015, wherein, the use of fossil fuels in biomass power plants has been limited to the extent of 15% in terms of calorific value on annual basis, till 31.03.2017.

4. The Commission, in the meanwhile, has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Third Amendment) Regulations, 2014 (hereinafter referred to as “the RE Tariff (Third Amendment) Regulations”), on 10.07.2015, wherein, Station Heat Rate and calorific value of the fuel used for biomass power projects using fossil fuel upto 15 % have been defined.

5. The Commission, has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Fourth Amendment) Regulations, 2015, on 7.10.2015 wherein, various technical norms of Waste to Energy (viz Municipal Solid Waste (MSW) and Refuse Derived Fuel (RDF)) were specified. The Commission is of the opinion that not much time has lapsed since the notification of the regulations, therefore it is prudent to fix the capital cost and tariff of such projects once more data is available with the Commission. Therefore, the Commission has decided to issue the tariff Order for MSW / RDF projects separately, till such time it is proposed that the Tariff as per order dated 7.10.2015 shall continue to be in force.

6. The Commission, has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Fifth Amendment) Regulations, 2016, on 30.03.2016 wherein, Operation and Maintenance

expenses for Solar PV projects for FY 2016-17 have been specified.

7. The Regulations enjoin upon the Commission to determine the generic tariff on the basis of the *suo-motu* petition, for the RE technologies for which norms have been provided in the RE Tariff Regulations. Generic Tariff is different from the project specific tariff for which a project developer has to file petition before the Commission as per the format provided in the RE Tariff Regulations. Pertinently, project specific tariff has been envisaged for the new RE technologies and the technologies which are still at the nascent stage of development, and the Commission shall determine the project specific tariff for such technologies on a case to case basis.

8. Clause (1) of Regulation 8 of the RE Tariff Regulations provides that “the Commission shall determine the generic tariff on the basis of suo-motu petition at the beginning of each year of the Control period for renewable energy technologies for which norms have been specified under the Regulations”.

9. The Commission has notified the RE Tariff Regulations on 06.02.2012 and subsequently issued generic suo-motu tariff orders, which were applicable for the renewable energy projects to be commissioned during first, second, third and fourth year of the control period (i.e. FY2012-13, FY 2013-14 ,FY 2014-15 and FY-2015-16)."

10. The Commission, in due discharge of the mandate under Regulation 8(1) of the RE Tariff Regulations proposes to determine the generic tariff of the RE projects for the fifth year of control period (i.e. FY 2016-17) as per the proposal enclosed as **Annexure-I**.

11. Comments / suggestions of the stakeholders on the above proposal are invited by 11th April 2016. A public hearing on the above proposal will be held on 12th April 2016 at 2:30 P.M.

Sd/-	Sd/-	Sd/-	Sd/-
[M. K. Iyer]	[A. S. Bakshi]	[A. K. Singhal]	[GIREESH B. PRADHAN]
MEMBER	MEMBER	MEMBER	CHAIRPERSON

**New Delhi**

**Dated**

**THE PROPOSED LEVELLISED GENERIC TARIFF FOR VARIOUS RENEWABLE ENERGY TECHNOLOGIES FOR FY 2016-17**

1. The proposed levelled generic tariffs for various renewable energy technologies, for FY 2016-17 are discussed below:

**USEFUL LIFE**

2. Clause (aa) of sub-Regulation (1) of Regulation 2 of the RE Tariff Regulations defines 'useful life' in relation to a unit of a generating station (including evacuation system) to mean the following duration from the date of commercial operation (COD) of such generation facility:

<b>Renewable Energy Projects</b>	<b>Years</b>
Wind energy	25
Small Hydro	35
Biomass power project with Rankine Cycle technology	20
Non-fossil fuel based co-generation	20
Solar PV	25
Solar Thermal	25
Biomass Gasifier	20
Biogas	20
Municipal Solid Waste	20

**CONTROL PERIOD.**

3. Regulation 5 of the RE Tariff Regulations provides that the control period for determination of tariff for renewable energy projects (RE projects) shall be of five years of which the first year of the control period was FY 2012-13. The Provision to the said regulation stipulates that the tariff determined for the RE projects commissioned during the control period shall continue to be applicable for the entire duration of the tariff period as specified in Regulation 6 of the RE Tariff Regulations. Accordingly, the tariff determined for FY 2016-17 is for the last year of the control period.

**TARIFF PERIOD**

4. In terms of Regulation 6 of the RE Tariff Regulations, the tariff period in respect of the RE projects is as under:

<b>Renewable Energy Projects</b>	<b>Years</b>
Wind energy	13*
Small Hydro below 5 MW	35
Small Hydro (5 MW -25 MW)	13*
Biomass	13*
Non-fossil fuel co-generation	13*
Solar PV and Solar Thermal	25
Biomass Gasifier and Biogas	20

\* The RE Tariff Regulations provides for a minimum period of thirteen (13)years.

5. In terms of clauses (e) and (f) of the said regulation, the tariff period specified above shall be reckoned from the date of commercial operation of the RE projects and the tariff determined under the regulations shall be applicable for the duration of the tariff period.

#### **TARIFF STRUCTURE.**

6. Clause (1) of Regulation 9 of the RE Regulations stipulates that the tariff for RE projects shall be single part tariff consisting of the following fixed cost components:
- a. Return on equity;
  - b. Interest on loan capital;
  - c. Depreciation;
  - d. Interest on working capital;
  - e. Operation and maintenance expenses;

For renewable energy technologies having fuel cost component, such as biomass power projects and non-fossil fuel based cogeneration, single part tariff with two components i.e. fixed cost component and fuel cost component, is to be determined.

#### **TARIFF DESIGN**

7. In terms of Regulation 10 of the RE Tariff Regulations, the tariff design for renewable energy generating stations is as under:
- 1) *The generic tariff shall be determined on levellised basis for the Tariff Period. Provided that for renewable energy technologies having single part tariff with two components, tariff shall be determined on levellised basis considering the*

*year of commissioning of the project for fixed cost component while the fuel cost component shall be specified on year of operation basis.*

*2) For the purpose of levellised tariff computation, the discount factor equivalent to Post Tax weighted average cost of capital shall be considered.*

*3) Levellisation shall be carried out for the 'useful life' of the Renewable Energy project while Tariff shall be specified for the period equivalent to Tariff Period."*

## **LEVELLISED TARIFF**

8. Levellised Tariff is calculated by carrying out levellisation for 'useful life' of each technology considering the discount factor for time value of money.

## **DISCOUNT FACTOR**

9. In accordance with Regulation 10(2) of RE tariff regulation, the discount factor considered for this exercise is equal to the post tax weighted average cost of the capital on the basis of normative debt: equity ratio (70:30) specified in the Regulations. Considering the normative debt equity ratio and weighted average of the post tax rates for interest and equity component, the discount factor is calculated. Interest Rate considered for the loan component (i.e.70 %) of capital cost is 12.76 %. For equity component (i.e. 30 %), rate of Return on Equity (ROE) is considered at post tax ROE of 16 %. The discount factor derived by this method for all technologies is 10.70 %  $((12.76 \% \times 0.70 \times (1 - 33.99 \%) + (16.0\% \times 0.30))$ .

## **CAPITAL COST**

10. Regulation 12 of the RE Tariff Regulations stipulates that the norms for the capital cost as specified in the technology specific chapter shall be inclusive of all capital works like plant and machinery, civil works, erection and commissioning, financing and interest during construction, and evacuation infrastructure up to inter-connection point. The Commission has specified the normative capital cost, applicable for the first year of control period i.e. FY 2012-13, for various RE technologies viz. Wind Energy, Small Hydro Power, Biomass Power based on Rankine cycle, Non-Fossil Fuel based Cogeneration, Solar PV, Solar Thermal, Biomass Gasifier and Biogas based power projects.

11. In order to determine the normative capital cost for the remaining years of the control period, the regulations stipulate the indexation mechanism for Wind Energy, Small Hydro Power, Biomass Power, Non-Fossil Fuel based Cogeneration, Biomass Gasifier and Biogas based power projects. However, the Capital Cost norms for Solar PV, Solar

Thermal Power Projects and MSW projects shall be reviewed on annual basis by the Commission. The indexation mechanism shall take into account adjustments in capital cost with the changes in Wholesale Price Index of Steel and Wholesale Price Index of Electrical Machinery as per formulation stipulated under the RE Tariff Regulations, which is reproduced overleaf:

$$CC(n) = P\&M(n) * (1+F1+F2+F3)$$

$$P\&M(n) = P\&M(0) * (1+d(n))$$

$$d(n) = [a*\{(SI(n-1)/SI(0)) - 1\} + b*\{(EI(n-1)/EI(0)) - 1\}]/(a+b)$$

Where,

CC (n) = Capital Cost for nth year

P&M (n) = Plant and Machinery Cost for nth year

P&M (0) = Plant and Machinery Cost for the base year

Note: P&M (0) is to be computed by dividing the base capital cost (for the first year of the control period) by (1+F1+F2+F3). Factors F1, F2, F3 for each RE technology has been specified separately, as summarized in following table.

d (n) = Capital Cost escalation factor for year (n) of Control Period

SI (n-1) = Average WPI Steel Index prevalent for calendar year (n-1) of the Control Period

SI (0) = Average WPI Steel Index prevalent for calendar year (0) at the beginning of the Control Period

EI (n-1) = Average WPI Electrical Machinery Index prevalent for calendar year (n- 1) of the Control Period

EI(0) = Average WPI Electrical Machinery Index prevalent for calendar year (0) at the beginning of the Control Period

a = Constant to be determined by Commission from time to time, (for weightage to Steel Index)

b = Constant to be determined by Commission from time to time, (for weightage to Electrical Machinery Index)

F1 = Factor for Land and Civil Works

F2 = Factor for Erection and Commissioning

F3 = Factor for IDC and Financing Cost

The default values of the factors for various RE technologies as stipulated under the said RE Regulations, is summarized in the table overleaf:

Parameters	Wind Energy	Small Hydro Projects	Biomass based Rankine cycle Power plant, Non-Fossil Fuel Based Cogeneration Biomass Gasifier and Biogas based projects
a	0.60	0.60	0.70
b	0.40	0.40	0.30
F1	0.08	0.16	0.10
F2	0.07	0.10	0.09
F3	0.10	0.14	0.14

The Commission has relied on the following sources for relevant information on various indices:

- Source for WPI (electrical & machinery and iron and steel), WPI ( all commodities), WPI (Price of HSD): Office of Economic Advisor, Ministry of Commerce & Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in))
- Source for IRC (Average Annual Inflation rate for indexed energy charge component in case of captive coal mine source): CERC ([www.cercind.gov.in](http://www.cercind.gov.in))

**Technology specific capital cost of RE projects is discussed herein as under:**

**(A) Capital Cost of Wind Energy for FY 2016-17**

12. Regulation 24 provides that the capital cost for wind energy project shall include wind turbine generator including its auxiliaries, land cost, site development charges and other civil works, transportation charges, evacuation cost up to inter-connection point, financing charges and IDC.

13. The Commission, under Regulation 24 (2) has specified the normative capital cost for wind energy projects as Rs.575 lakhs/MW for FY 2012-13 which shall be linked to the indexation mechanism specified under Regulation 25 of the RE Tariff Regulations. In accordance with the above referred Regulation, the Commission proposes to determine normative capital cost of the Wind energy Projects at Rs 619.80 lakhs/MW for FY 2016-17. The detailed computations of the indexation mechanism and



determination of the capital cost for FY 2016-17 thereof, has been enclosed as Appendix-1 of this Order.

**(B) Capital cost of Small Hydro Projects for FY 2016-17**

14. Small Hydro Projects for the purpose of the RE Tariff Regulations cover those projects which are located at the sites approved by the State Nodal Agencies/State Governments using new plant and machinery and with installed power plant capacity lower than or equal to 25 MW.

15. The Commission under Regulation 28 (1) has specified the normative capital cost for small hydro projects for FY 2012-13 as under:

Region	Project Size	Capital Cost (FY 2012-13) (Rs. Lakhs/ MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	770
	5 MW to 25 MW	700
Other States	Below 5 MW	600
	5 MW to 25 MW	550

16. In line with the indexation mechanism, specified in Regulation 29 of the RE Tariff Regulations, the Commission proposes to determine normative capital cost for FY 2016-17 for Small Hydro Projects as under:

Region	Project Size	Capital Cost (FY 2016-17) (Rs.lakhs/ MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	830.00
	5 MW to 25 MW	754.55
Other States	Below 5 MW	646.75
	5 MW to 25 MW	592.86

The detailed computations of the indexation mechanism and the determination of the capital cost for FY 2016-17 thereof, has been enclosed as **Appendix-2** of this Order.

**(C) Capital Cost of Biomass based Power Projects for FY 2016-17**

17. The Commission, under Regulation 34 of the RE Tariff (First Amendment) Regulations has specified the normative capital cost for the biomass power projects based on Rankine cycle technology application for FY 2014-15 as under:

- a. Rs. 540 lakhs/MW for project [other than rice straw and juliflora (plantation) based project] with water cooled condenser;
- b. Rs. 580 lakhs/MW for Project [other than rice straw and Juliflora (plantation) based project] with air cooled condenser;
- c. Rs. 590 lakhs/MW for rice straw and juliflora (plantation) based project with water cooled condenser;
- d. Rs. 630 lakhs/MW for rice straw and juliflora (plantation) based project with air cooled condenser.

18. In line with the indexation mechanism, specified in Regulation 35 of the RE Tariff Regulations, the normative capital cost for FY 2016-17 for Biomass Projects has been determined considering capital cost specified in the RE Tariff (First Amendment) Regulations for FY 2013-14 as base year capital cost, average WPI for Steel and average WPI for Electrical Machinery prevalent for calendar year 2015 considered for SI (n-1) and EI (n-1) respectively. Average WPI for Steel and average WPI for Electrical Machinery prevalent for year 2012 for SI (0) and EI(0) respectively. Accordingly, the Commission proposes to determine normative capital cost for FY 2016-17 for Biomass Projects as under;

<b>Biomass Rankine Cycle Projects</b>	<b>Capital Cost (FY 2016-17) (Rslakhs/ MW)</b>
Project [other than rice straw and juliflora (plantation) based project] with water cooled condenser	559.03
Project [other than rice straw and Juliflora(plantation) based project] with air cooled condenser	600.44
For rice straw and juliflora (plantation) based project with water cooled condenser	610.80
For rice straw and juliflora (plantation) based project with air cooled condenser	652.20

19. The detailed computations of the indexation mechanism and the determination of the capital cost for FY 2016-17 thereof, has been enclosed as Appendix-3 of this Order.

**(D) Capital Cost of Non-fossil fuel based Cogeneration Projects for FY 2016-17**

20. Non-fossil based cogeneration has been defined as the process in which more than one form of energy is produced in a sequential manner by using biomass. As per Regulation 4(d) of the RE Tariff Regulations, a project to qualify as the non-fossil based co-generation project must be using new plant and machinery with topping cycle mode of operation which uses the non-fossil fuel input for power generation and utilizes the thermal energy generated for useful heat applications in other industrial activities simultaneously, and where the sum of useful power output and half of useful thermal output is greater than 45% of the plant’s energy consumption during the season.

21. The Commission under Regulation 47 has specified the normative capital cost for the Non-Fossil Fuel Based Cogeneration Projects as Rs.420 lakhs/MW for FY 2012-13 which shall be linked to the indexation mechanism specified under Regulation 48 of the RE Tariff Regulations. In accordance with the above referred Regulation, the Commission proposes to determine the normative capital cost of Non-Fossil Fuel based Cogeneration power projects at Rs. 452.75lakhs/MW for FY 2016-17. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2016-17 thereof, have been enclosed as **Appendix-4** of this Order.

**(E) Capital Cost of Solar PV based Power Projects for FY 2016-17**

22. Solar Photo Voltaic (PV) power projects which directly convert solar energy into electricity using crystalline silicon or thin film technology or any other technology as approved by the Ministry of New and Renewable Energy and are connected to the grid, qualify for the purpose of tariff determination under the RE Tariff Regulations.

23. The Commission by way of its suo-motu orders, determined the capital cost as follows:

<b>Year</b>	<b>Capital Cost for Solar PV (Rs. Lakhs/MW)</b>
2010-11	1700
2011-12	1442
2012-13	1000
2013-14	800
2014-15	691
2015-16	605.85

24. The Commission under Regulation 57 specified the normative capital cost for the Solar PV power projects as Rs. 1000 lakhs/MW for FY 2012-13.
25. The Commission vide its suo-motu Order (Petition No. SM/005/2015) dated 31st March 2015 determined the normative capital cost for the Solar PV power projects as Rs. 605.85 lakhs/MW for FY 2015-16.
26. It may be seen that over the years, the capital cost has shown a declining trend due to reasons such as advancement of technologies, reduction in module prices and economies of scale.
27. The Commission vide its suo-motu Order dated 23<sup>rd</sup> March 2016 determined the normative capital cost for the Solar PV power projects as Rs. 530.02 lakhs/MW for FY 2016-17.

**(F) Capital Cost of Solar Thermal based Power Projects for FY 2016-17**

28. As per Clause 4 of RE Tariff Regulations, in order to qualify for tariff determination under the RE Tariff Regulations, Solar Thermal Power Project need to be based on concentrated solar power technologies with line focusing or point focusing (as approved by the Ministry of New and Renewable Energy) and which uses direct sunlight to generate sufficient heat to operate a conventional power cycle to generate electricity.

Year	Capital Cost for Solar Thermal (Rs. lakhs/MW)
2010-11	1300
2011-12	1500
2012-13	1300
2013-14	1200
2014-15	1200
2015-16	1200

29. The Commission vide its suo-motu Order (Petition No. SM/005/2015) dated 03<sup>rd</sup> March 2015 determined the normative capital cost for Solar Thermal power projects as Rs. 1200 lakhs/MW for FY 2015-16.

30. The Commission vide its Order dated 23<sup>rd</sup> March 2016 determined the normative capital cost for the Solar Thermal power projects as Rs. 1200 lakhs/MW for FY 2016-17.

**(G) Capital Cost of Biomass Gasifier Power Projects for FY 2016-17**

31. The Commission under Regulation 66 has specified the normative capital cost for the Biomass Gasifier power projects based on Rankine cycle to be Rs. 550.00 lakhs/MW for FY 2012-13. After taking into account capital subsidy of Rs. 150.00 lakhs/MW, net project cost of Rs. 400.00 lakhs/MW was determined for FY 2012-13 (linked to the indexation mechanism specified under Regulation 67 of the RE Tariff Regulations) . In accordance with the above referred Regulation, the Commission proposes to determine normative capital cost of Biomass gasifier power projects at Rs. 592.88 lakhs/MW for FY 2016-17. After taking into account capital subsidy of Rs. 150.00 lakhs/MW, net project cost will be Rs. 442.88 lakhs/MW for FY 2016-17. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2016-17 thereof, have been enclosed as **Appendix-5** of this Order.

**(H) Capital Cost of Biogas based Power Projects for FY 2016-17**

32. Grid connected biogas based power projects that use 100% Biogas fired engine, coupled with Biogas technology for co-digesting agriculture residues, manure and other bio waste (as may be approved by the Ministry of New and Renewable Energy) qualify for tariff determination under clause 4 of the RE Tariff Regulations.

33. The Commission under Regulation 76 has specified the normative capital cost for Biogas based power projects to be Rs. 1100.00 lakhs/MW for FY 2012-13. After taking into account of capital subsidy of Rs. 300.00 lakhs/MW, net project cost is Rs. 800.00 lakhs/MW for FY 2012-13 (which is linked to the indexation mechanism specified under Regulation 77 of the RE Tariff Regulations.) In accordance with the above referred Regulation, the Commission proposes to determine the normative capital cost of Biogas based power projects at Rs. 1185.76lakhs/MW for FY 2016-17. After taking into account of capital subsidy of Rs. 300.00 lakhs/MW, net project cost will be Rs. 885.76 lakhs/MW for FY 2016-17. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2016-17 thereof, have been enclosed as **Appendix-6** of this Order.

34. The capital cost for the fifth year (i.e. FY 2016-17) of the control period in respect of the renewable energy power generating stations is summarized as under:

<b>Renewable Energy Projects</b>	<b>Capital Cost Norm for FY 2016-17 (Rs. lakhs/MW)</b>
(1) Wind Energy Projects	619.81
(2) Small Hydro Projects	
(a) Himachal Pradesh, Uttarakhand and North Eastern States (less than 5 MW)	830.00
(b) Himachal Pradesh, Uttarakhand and North Eastern States (5MW to 25 MW)	754.55
(c) Other States (below 5 MW)	646.76
(d) Other States ( 5MW to 25 MW)	592.86
(3) Biomass Power Projects	
(a) project [other than rice straw and juliflora (plantation) based project] with water cooled condenser	559.03
(b) Project [other than rice straw and Juliflora (plantation) based project] with air cooled condenser	600.44
(c) Rice straw and juliflora (plantation) based project with water cooled condenser	610.80
(d) Rice straw and juliflora (plantation) based project with air cooled condenser	652.20
(4) Non-fossil fuel based co-generation Power Projects	452.75
(5) Solar PV Power Projects	530.02
(6) Solar Thermal Power Projects	1200.00
(7) Biomass Gasifier Power Projects	442.88
(8) Biogas Power Projects	885.76

## DEBT-EQUITY RATIO

35. Sub-Regulation (1) of Regulation 13 of the RE Tariff Regulations provides that the debt-equity ratio of 70:30 is to be considered for determination of generic tariff based on suo-motu petition.

36. Based on the debt equity ratio of 70:30, the debt and equity components of the normative capital cost for determination of tariff for the RE projects have been worked out as under:

<b>Renewable Energy Projects</b>	<b>Debt (Rs. Lakh)</b>	<b>Equity (Rs. Lakh)</b>
(1) Wind Energy (for all zones)	433.86	185.94
(2) Small Hydro		
(a) Himachal Pradesh, Uttarakhand and North Eastern States (below 5 MW)	581.00	249.00
(b) Himachal Pradesh, Uttarakhand and North Eastern States (5 MW to 25 MW)	528.18	226.36
(c) Other States (below 5 MW)	452.73	194.03
(d) Other States ( 5MW to 25 MW)	415.00	177.86
(3) Biomass		
(a) project [other than rice straw and Juliflora (plantation) based project] with water cooled condenser	391.32	167.71
(b) Project [other than rice straw and Juliflora (plantation) based project] with air cooled condenser	420.31	180.13
(c) Rice straw and Juliflora (plantation) based project with water cooled condenser	427.56	183.24
(d) Rice straw and Juliflora (plantation) based project with air cooled condenser	456.54	195.66
(4) Non-fossil fuel co-generation	316.92	135.82
(5) Solar PV	371.01	159.01
(6) Solar Thermal	840.00	360.00
(7) Biomass Gasifier based Power Projects	310.02	132.86
(8) Biogas based Power Projects	620.03	265.73

## RETURN ON EQUITY

37. Sub-Regulation (1) of Regulation 16 of the RE Tariff Regulations provides that the value base for the equity shall be 30% of the capital cost for generic tariff determination. Sub-Regulation (2) of the said Regulation stipulates the normative Return on Equity (ROE) as under:

- a) 20% per annum for the first 10 years, and

b) 24% per annum from the 11<sup>th</sup> year onwards.

## INTEREST ON LOAN

38. Sub-Regulation (1) of Regulation 14 of the RE Regulations provides that the loan tenure of 12 years is to be considered for the purpose of determination of tariff for RE projects. Sub-Regulation (2) of the said Regulations provides for computation of the rate of interest on loan as under:

*“(a) The loans arrived at in the manner indicated in the Regulation 13 shall be considered as gross normative loan for calculation for interest on loan. The normative loan outstanding as on April 1st of every year shall be worked out by deducting the cumulative repayment up to March 31st of previous year from the gross normative loan.*

*“(b) For the purpose of computation of tariff, the normative interest rate shall be considered as average State Bank of India (SBI) Base rate prevalent during the first six months of the previous year plus 300 basis points.*

*“(c) Notwithstanding any moratorium period availed by the generating company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed”.*

39. The weighted average State Bank of India (SBI) Base rate prevalent during the first six months has been considered for the determination of tariff, as shown in the table below:

<b>From</b>	<b>To</b>	<b>Interest rate</b>
Wednesday, April 1, 2015	Thursday, April 9, 2015	10.00%
Friday, April 10, 2015	Sunday, June 7, 2015	9.85%
Monday, June 8, 2015	Wednesday, September 30, 2015	9.70%

Source: State Bank of India ([www.statebankofindia.com](http://www.statebankofindia.com))

40. In terms of the above, the computations of interest on loan carried out for determination of tariff in respect of the RE projects treating the value base of loan as 70% of the capital cost and the weighted average of Base rate prevalent during the first six months of FY 2015-16 (i.e. 9.76%) plus 300 basis points is equivalent to interest rate of 12.76%.



## DEPRECIATION

41. Regulation 15 of the RE Tariff Regulations provides for computation of depreciation in the following manner:

*"(1) The value base for the purpose of depreciation shall be the Capital Cost of the asset admitted by the Commission. 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.*

*(2) Depreciation per annum shall be based on 'Differential Depreciation Approach' over loan period beyond loan tenure over useful life computed on 'Straight Line Method'. The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 13th year onwards.*

*(3) Depreciation shall be chargeable from the first year of commercial operation. Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis".*

42. In accordance with the above, the rate of depreciation for the first 12 years has been considered as 5.83% and the rate of depreciation from the 13th year onwards has been spread over the balance useful life of the RE project as under:

Details	Wind Energy	Small Hydro	Biomass	Non-fossil fuel co-generation	Solar PV	Solar Thermal	Biomass Gasifier	Biogas
Useful Life (in years)	25	35	20	20	25	25	20	20
Rate of depreciation for 12 years (%)	5.83	5.83	5.83	5.83	5.83	5.83	5.83	5.83
Rate of depreciation after first 12 years (%)	1.54	0.87	2.51	2.51	1.54	1.54	2.51	2.51

## INTEREST ON WORKING CAPITAL

43. Regulation 17 of the RE Tariff Regulations provides for the working capital requirements of the RE projects as under:

*“(1) The Working Capital requirement in respect of wind energy projects, Small Hydro Power, Solar PV and Solar thermal power projects shall be computed in accordance with the following:*

*Wind Energy / Small Hydro Power /Solar PV / Solar thermal*

- a) Operation & Maintenance expenses for one month;*
- b) Receivables equivalent to 2 (Two) months of energy charges for sale of electricity calculated on the normative CUF;*
- c) Maintenance spare @ 15% of operation and maintenance expenses*

*(2) The Working Capital requirement in respect of biomass power projects and non-fossil fuel based co-generation projects shall be computed in accordance with the following clause:*

*Biomass(Rankine Cycle Technology), Biomass Gasifier, Biogas Power and Non-fossil fuel Co-generation*

- a) Fuel costs for four months equivalent to normative PLF;*
- b) Operation & Maintenance expense for one month;*
- c) Receivables equivalent to 2 (Two) months of fixed and variable charges for sale of electricity calculated on the target PLF;*
- d) Maintenance spare @ 15% of operation and maintenance expenses*

*(3) Interest on Working Capital shall be at interest rate equivalent to the average State Bank of India Base Rate prevalent during the first six months of the previous year plus 350 basis points”.*

44. Receivables equivalent to two months of actual fixed cost and variable cost, (as applicable for biomass power and non-fossil fuel based co-generation) have been considered. Interest rate has been considered as weighted average of State Bank of India Base Rate prevalent during the first six months of the previous year plus 350 basis points (equivalent to interest rate of 13.26%). The interest on working capital has been worked out as specified below for determination of tariff of the RE projects:

<b>Details</b>	<b>Wind Energy</b>	<b>Small Hydro</b>	<b>Biomass, Biomass Gasifier and Biogas</b>	<b>Non-fossil fuel co-generation</b>	<b>Solar PV</b>	<b>Solar Thermal</b>
<b>(A) For Fixed charges</b>						
(i) O&M expenses (month)	1	1	1	1	1	1

Details	Wind Energy	Small Hydro	Biomass, Biomass Gasifier and Biogas	Non-fossil fuel co-generation	Solar PV	Solar Thermal
(ii) Maintenance spares (%) of O&M expenses	15	15	15	15	15	15
(iii) Receivables (months)	2	2	2	2	2	2
<b>(B) For Variable Charges</b>						
Biomass/Bagasse stock (months)	-	-	4	4	-	-
<b>(C) Interest On Working Capital (%)</b>	13.26%	13.26%	13.26%	13.26%	13.26%	13.26%

Source for SBI Base Rate: State Bank of India ([www.statebankofindia.com](http://www.statebankofindia.com))

#### **OPERATION AND MAINTENANCE EXPENSES**

45. Regulation 18 of the RE Tariff Regulations provides for Operation and Maintenance Expenses (O&M expenses) in respect of RE projects as under:

**“Operation and Maintenance Expenses**

- (1) *‘Operation and Maintenance or O&M expenses’ shall comprise repair and maintenance (R&M), establishment including employee expenses and administrative & general expenses.*
- (2) *Operation and maintenance expenses shall be determined for the Tariff Period based on normative O&M expenses specified by the Commission subsequently in these Regulations for the first Year of Control Period.*
- (3) *Normative O&M expenses allowed during first year of the Control Period (i.e. FY 2012-13) under these Regulations shall be escalated at the rate of 5.72% per annum over the Tariff Period”*

46. The normative O&M expenses for various RE technologies specified under the relevant provisions of the RE Tariff Regulations are as under:

**Wind Energy:** Regulation 27 of RE Tariff Regulations provides that the normative O&M expenses for the first year of the control period (i.e. 2012-13) as Rs. 9 lakh per MW and shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for wind energy as Rs. 11.24 lakhs/MW for FY 2016-17.

**(b) Small Hydro:** Regulation 32 of RE Regulations provided for the normative O&M expenses for small hydro projects for the year 2012-13 which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. The table below presents the normative

47. O&M Expenses considered by the Commission for small hydro power for FY2012-13;

Region	Project Size	O&M expenses (Rs. lakhs/MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	25
	5 MW to 25 MW	18
Other States	Below 5 MW	20
	5 MW to 25 MW	14

Accordingly, the table below presents the normative O&M Expenses considered by the Commission for small hydro power for FY 2016-17

Region	Project Size	O&M expenses (Rs.lakhs/MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	31.23
	5 MW to 25 MW	22.49
Other States	Below 5 MW	24.98
	5 MW to 25 MW	17.49

**(c) Biomass:** Regulation 39 of RE Tariff (First Amendment) Regulations provides that the normative O& M expenses for biomass based projects for the year 2013-14 shall be Rs. 40 Lakh per MW and which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for biomass power as Rs. 47.26 lakhs/MW for FY 2016-17.

**(d) Non-fossil fuel co-generation:** As per Regulation 55 of RE Tariff Regulations, the normative O&M Expenses for non-fossil fuel co-generation projects for the year 2012-13 has been specified as Rs. 16 Lakh per MW which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for non-fossil fuel based co-generation as Rs. 19.99 lakhs/MW for FY 2016-17.

**(e) Solar PV:** As per CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Fifth amendment) Regulations, 2016 the "*Normative O&M expenses for the last year of the Control Period (i.e. FY2016-17) shall be Rs 7 Lakh per MW*". Accordingly, O&M expense norm for solar PV power projects for FY 2016-17 has been considered as Rs. 7.00 lakhs/MW.

**(f) Solar Thermal:** Regulation 63 of the RE Tariff Regulations specified the normative O&M expenses for solar thermal power projects shall be Rs. 15 lakhs/MW for the first year of operation, which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, O&M expense norm for solar thermal power project as Rs. 18.74 lakhs/MW for FY 2016-17, has been considered.

**(g) Biomass Gasifier:** Regulation 71 of the RE Tariff Regulations specified the normative O&M expenses for solar thermal power projects shall be Rs. 40 lakhs/MW for the first year of operation, which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for biomass gasifier based power plant as Rs. 49.97lakhs/MW for FY 2016-17.

**(h) Biogas:** Regulation 80 of the RE Tariff Regulations specified the normative O&M expenses for biogas shall be Rs. 40 lakhs/MW for the first year of operation, which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for biogas based power plant as Rs. 49.97 lakhs/MW for FY 2016-17.

48. The normative O&M expenses have been worked out as specified above for determination of tariff for the renewable energy generating stations.

## CAPACITY UTILISATION FACTOR

49. Regulations 26, 30, 58 and 62 of the RE Tariff Regulations specify the norms for Capacity Utilization Factor (CUF)/Plant Load Factor (PLF) in respect of the Wind Energy, Small Hydro, Solar PV and Solar Thermal based power generating stations as per the details given in the table below which has been considered for determination of tariff.

<b>Renewable Energy Projects</b>	<b>CUF</b>
(A) Wind Energy: Annual Mean Wind Power Density (W/m <sup>2</sup> ) Wind zone - 1 (Upto 200) Wind zone - 2 (201 - 250) Wind zone - 3 (251 - 300) Wind zone - 4 (301 - 400) Wind zone - 5 (Above 400)	20 % 22 % 25 % 30 % 32 %
(B) Small Hydro (i) Himachal, Uttarakhand and North Eastern States (ii) Other States	45 % 30 %
(C) Solar PV	19 %
(D) Solar Thermal	23 %

## PLANT LOAD FACTOR (PLF)

50. Regulations 36, 68 and 78 of the RE Tariff Regulations specify the plant load factor for Biomass, Biomass Gasifier and Biogas based renewable energy generating stations as given in the table below which has been considered for determination of fixed charges component of tariff.

<b>Renewable Energy Projects</b>	<b>PLF</b>
(A) Biomass (a) During stabilization (6 months) (b) During remaining period of the first year (after stabilization) (c) Second year onwards	60 % 70 % 80 %
(B) Biomass Gasifier	85 %
(C) Biogas	90 %

51. Regulation 49 of the RE Tariff Regulations stipulates the plant load factor for Non-fossil Fuel based Co-generation projects as under, computed on the basis of plant availability for number of operating days considering the operations during crushing season and off-season and load factor of 92%. The number of Operating days for different States as specified in the Regulation 49(2) is as under:

<b>States</b>	<b>Operating days</b>	<b>PLF</b>
Uttar Pradesh and Andhra Pradesh	120 days (crushing)+ 60 days (off-season) = 180 days	45 %
Tamil Nadu and Maharashtra	180 days (crushing)+ 60 days (off-season) = 240 days	60 %
Other States	150 days (crushing) + 60 days (off-season) = 210 days	53 %

#### **AUXILIARY POWER CONSUMPTION**

52. Regulations 31, 37, 50, 64, 69 and 79 of the RE Tariff Regulations as amended from time to time, stipulate the auxiliary power consumption factor as under which has been considered for determination of tariff of the RE projects :

<b>Renewable Energy Projects</b>	<b>Auxiliary Consumption Factor</b>
Small Hydro	1 %
Biomass a) the project using water cooled condenser	i. During first year of operation: 11%; ii. From 2 <sup>nd</sup> year onwards: 10%.
b) project using air cooled condenser	i. During first year of operation: 13%; ii. From 2 <sup>nd</sup> year onwards: 12%.
Non-fossil fuel co-generation	8.5 %
Solar Thermal	10 %
Biomass Gasifier	10 %
Biogas	12 %

## STATION HEAT RATE

53. The Station Heat Rates (SHR) specified under Regulations 33, 38 (Third Amendment) and 51 of the RE Tariff Regulations as amended from time to time for biomass and non-fossil fuel based co-generation projects are as under:

Renewable Energy Projects	SHR (kCal / kWh)
Biomass	a. 4126 : for project using travelling grate boilers; b. 4063 : for project using AFBC boilers.
Non-fossil fuel co-generation (for power component)	3600

## FUEL

### (a) Fuel Mix

54. Sub-Regulation (1) of Regulation 40 of the RE Tariff Regulations stipulates that the Biomass based power generating stations are to be designed in a way that it uses different types of non-fossil fuels available within the vicinity of biomass power project such as crop residues, agro-industrial residues, forest residues etc. and other biomass fuels as may be approved by the Ministry of Non-Renewable Energy (MNRE). Sub-Regulation (2) of the said Regulations stipulates that the biomass power generating companies are to ensure fuel management plan to ensure adequate availability of fuel to meet the respective project requirements.

55. Regulation 70 of the RE Tariff Regulations stipulates that the normative specific fuel consumption shall be 1.25 kg per kWh for Biomass Gasifier based power generating stations.

56. Regulation 81 of the RE Tariff Regulations stipulates that the normative specific fuel consumption shall be 3 kg of substrate mix per kWh for Biogas based power generating stations.

### (b) Calorific value

57. Regulation 43 of the RE Tariff (Third Amendment) Regulations, provides the calorific value of biomass fuel used for determination of tariff shall be at 3174 kCal/kg.



58. Regulation 52 of the of the RE Tariff Regulations provides the gross calorific value for bagasse to be considered in case of non-fossil fuel co-generation projects is 2250 kCal/kg and for the use of biomass fuels other than bagasse, the calorific value as specified above shall be applicable.

**(c) Fuel cost**

59. The Commission, in terms of Regulation 44 of the RE Tariff Regulations, has specified the biomass fuel price applicable during the period 2012-13 and has specified fuel price indexation mechanism, in case developer wishes to opt, for the remaining years of the control period. The data for Pd and WPI, as per regulations, latest figures for April, 2015 and April, 2014 corresponding to nth and (n-1)th year has been considered while calculating the fuel price indexation for biomass and also non-fossil fuel based co-generation power projects. The detailed computations of the fuel price indexation mechanism and the determination of the biomass fuel prices for FY 2016-17 thereof, has been enclosed as Appendix-7 to this order. Accordingly, the biomass fuel price applicable for FY 2016-17 is as under:

State	Biomass price (Rs./tonne)
Andhra Pradesh	2807.74
Haryana	3195.86
Maharashtra	3268.62
Punjab	3342.60
Rajasthan	2789.54
Tamil Nadu	2761.64
Uttar Pradesh	2856.25
Other States	3003.01

60. The Commission, in terms of Regulation 53 of the RE Tariff Regulations, has specified the price of bagasse applicable during the period 2012-13 and has specified fuel price indexation mechanism, in case developer wishes to opt, for the remaining years of the control period. The detailed computations of the fuel price indexation mechanism and the determination of the bagasse fuel prices for FY 2016-17 thereof, has been enclosed as **Appendix-8** of this Order. The price of bagasse (for non-fossil fuel based co-generation projects) applicable for FY 2016-17 shall be as in the table below;

State	Bagasse Price (Rs./tonne)
Andhra Pradesh	1585.19
Haryana	2254.67
Maharashtra	2221.93
Punjab	1984.22
Tamil Nadu	1707.69
Uttar Pradesh	1768.33
Other States	1919.93

61. The Commission, in terms of Regulation 73 of the RE Tariff Regulations, has specified the biomass fuel price during first year of the Control Period (i.e. FY 2012-13) as per Regulation 44 and has specified fuel price indexation mechanism for the Biomass Gasifier project developer. Accordingly, the biomass fuel price for the Biomass gasifier based power project applicable for FY 2016-17 shall be the same as for the biomass based power project (Rankine cycle) as mentioned above. The detailed computations of the fuel price indexation mechanism and the determination of the biomass fuel prices for FY 2016-17 thereof, has been enclosed as **Appendix-9** of this Order.
62. The Commission, in terms of Regulation 82 of the RE Tariff Regulations, has specified the feed stock price during first year of the Control Period (i.e. FY 2012-13) at Rs. 990/MT (net of any cost recovery from digester effluent) and has specified fuel price indexation mechanism for the Biogas project developer. The detailed computations of the fuel price indexation mechanism and the determination of the bagasse fuel prices for FY 2016-17 thereof, has been enclosed as Appendix-10 of this Order. The price of fuel applicable for the biogas based power plant for FY 2016-17 shall be at Rs. 1200.72/MT (net of any cost recovery from digester effluent).
63. In case of Biomass Power Projects, non-fossil fuel based co-generation projects, Biomass Gasifier based power Projects and Biogas based power projects, variable component of tariff is calculated based on the fuel cost for FY 2016-17. This variable component will change each year based on whether a Renewable Energy Power Project developer opts for fuel price indexation or escalation factor of 5%. Hence, while calculating the total applicable tariff for Biomass Power Projects, non-fossil fuel based co-generation projects, Biomass Gasifier based power Projects and Biogas

based power projects, levellisation of only fixed component is considered and the variable component for the first year of operation (i.e. 2015-16) is specified.

### **Subsidy or incentive by the Central / State Government**

64. Regulation 22 of the RE Tariff Regulations provides as under:

*“The Commission shall take into consideration any incentive or subsidy offered by the Central or State Government, including accelerated depreciation benefit if availed by the generating company, for the renewable energy power plants while determining the tariff under these Regulations.*

*Provided that the following principles shall be considered for ascertaining income tax benefit on account of accelerated depreciation, if availed, for the purpose of tariff determination:*

- 1) Assessment of benefit shall be based on normative capital cost, accelerated depreciation rate as per relevant provisions under Income Tax Act and corporate income tax rate.*
- ii) Capitalization of RE projects during second half of the fiscal year. Per unit benefit shall be derived on levellised basis at discount factor equivalent to Post Tax weighted average cost of capital”.*

65. In terms of the above regulation, for the projects availing the benefit of accelerated depreciation as per applicable Income tax rate @ 33.99% (30% IT rate+ 10% surcharge +3% Education cess) has been considered. For the purpose of determining net depreciation benefits, depreciation @ 5.28% as per straight line method (Book depreciation as per Companies Act, 1956) has been compared with depreciation as per Income Tax rate i.e. 80% of the written down value method. Moreover, additional 20% depreciation in the initial year is proposed to be extended to new assets acquired by power generation companies vide amendment in the section 32, sub-section (1) clause (iia) of the Income Tax Act.

66. Depreciation for the first year has been calculated at the rate of 50% of accelerated depreciation 80% and 50% of additional depreciation 20% (as project is capitalized during the second half of the financial year as per proviso to Regulation 22). Income tax benefits of accelerated depreciation and additional depreciation, has been worked out as per normal tax rate on the net depreciation benefit. Per unit levellised

accelerated depreciation benefit has been computed considering the post tax weighted average cost of capital as discount factor. Accelerated depreciation benefit has been computed as per existing provisions of Income Tax Act. The provisions related to Accelerated Depreciation announced in Union Budget of India presented on February 29, 2016 would be applied once the same are notified.

67. In the light of the discussion made in the preceding paragraphs, the generic tariffs of the following RE projects for the financial year 2016-17 have been arrived at and are proposed as under:

**Generic Tariff for RE Technologies for FY 2016-17**

Particular	Levellised Total Tariff (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Wind Energy</b>			
Wind Zone -1 (CUF 20%)	6.61	0.70	5.90
Wind Zone -2 (CUF 22%)	6.01	0.64	5.37
Wind Zone -3 (CUF 25%)	5.29	0.56	4.72
Wind Zone -4 (CUF 30%)	4.40	0.47	3.94
Wind Zone -5 (CUF 32%)	4.13	0.44	3.69
<b>Small Hydro Power Project</b>			
HP, Uttarakhand and NE States (Below 5MW)	4.70	-	-
HP, Uttarakhand and NE States (5MW to 25 MW)	3.99	-	-
Other States (Below 5 MW)	5.54	-	-
Other States (5 MW to 25 MW)	4.69	-	-

State	Levellised Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and travelling grate boiler</b>					
Andhra Pradesh	3.07	4.10	7.17	0.18	7.00
Haryana	3.13	4.67	7.79	0.18	7.62
Maharashtra	3.14	4.77	7.91	0.18	7.73
Punjab	3.15	4.88	8.03	0.18	7.85
Rajasthan	3.07	4.07	7.14	0.18	6.97

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
Tamil Nadu	3.07	4.03	7.10	0.18	6.92
Uttar Pradesh	3.08	4.17	7.254	0.18	7.07
Others	3.10	4.39	7.49	0.18	7.31

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and travelling grate boiler</b>					
Andhra Pradesh	3.25	4.20	7.45	0.20	7.25
Haryana	3.31	4.78	8.08	0.20	7.89
Maharashtra	3.32	4.88	8.20	0.20	8.01
Punjab	3.33	4.99	8.32	0.20	8.13
Rajasthan	3.25	4.17	7.42	0.20	7.22
Tamil Nadu	3.25	4.13	7.37	0.20	7.18
Uttar Pradesh	3.26	4.27	7.53	0.20	7.33
Others	3.28	4.49	7.77	0.20	7.57

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and travelling grate boiler</b>					
Andhra Pradesh	3.21	4.10	7.31	0.19	7.12
Haryana	3.26	4.67	7.93	0.19	7.74
Maharashtra	3.27	4.77	8.05	0.19	7.85
Punjab	3.28	4.88	8.17	0.19	7.97
Rajasthan	3.21	4.07	7.28	0.19	7.09
Tamil Nadu	3.20	4.03	7.24	0.19	7.04
Uttar Pradesh	3.22	4.17	7.39	0.19	7.19
Others	3.24	4.39	7.62	0.19	7.43

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and travelling grate boiler</b>					
Andhra Pradesh	3.40	4.20	7.59	0.21	7.38
Haryana	3.45	4.78	8.23	0.21	8.01
Maharashtra	3.46	4.88	8.34	0.21	8.13
Punjab	3.47	4.99	8.47	0.21	8.25
Rajasthan	3.39	4.17	7.56	0.21	7.35

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
Tamil Nadu	3.39	4.13	7.52	0.21	7.30
Uttar Pradesh	3.40	4.27	7.67	0.21	7.46
Others	3.42	4.49	7.91	0.21	7.70

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and AFBC boiler</b>					
Andhra Pradesh	3.07	4.04	7.10	0.18	6.93
Haryana	3.12	4.60	7.72	0.18	7.54
Maharashtra	3.13	4.70	7.83	0.18	7.65
Punjab	3.14	4.81	7.95	0.18	7.77
Rajasthan	3.06	4.01	7.08	0.18	6.90
Tamil Nadu	3.06	3.97	7.03	0.18	6.85
Uttar Pradesh	3.07	4.11	7.18	0.18	7.00
Others	3.09	4.32	7.41	0.18	7.23

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and AFBC boiler</b>					



State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if available)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if available)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
Andhra Pradesh	3.25	4.13	7.38	0.20	7.18
Haryana	3.30	4.70	8.00	0.20	7.81
Maharashtra	3.31	4.81	8.12	0.20	7.93
Punjab	3.32	4.92	8.24	0.20	8.04
Rajasthan	3.24	4.10	7.35	0.20	7.15
Tamil Nadu	3.24	4.06	7.30	0.20	7.11
Uttar Pradesh	3.25	4.20	7.46	0.20	7.26
Others	3.27	4.42	7.69	0.20	7.50

State	Levelling Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if available)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if available)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and AFBC boiler</b>					
Andhra Pradesh	3.20	4.04	7.24	0.19	7.05
Haryana	3.26	4.60	7.85	0.19	7.66
Maharashtra	3.27	4.70	7.97	0.19	7.77
Punjab	3.28	4.81	8.08	0.19	7.89
Rajasthan	3.20	4.01	7.21	0.19	7.02
Tamil Nadu	3.20	3.97	7.17	0.19	6.98
Uttar Pradesh	3.21	4.11	7.32	0.19	7.12

State	Levellised Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
Others	3.23	4.32	7.55	0.19	7.36

State	Levellised Fixed Cost	Variable Cost (FY 2016-17)	Applicable Tariff Rate (FY 2016-17)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and AFBC boiler</b>					
Andhra Pradesh	3.39	4.13	7.52	0.21	7.31
Haryana	3.44	4.70	8.15	0.21	7.93
Maharashtra	3.45	4.81	8.26	0.21	8.05
Punjab	3.46	4.92	8.38	0.21	8.17
Rajasthan	3.39	4.10	7.49	0.21	7.28
Tamil Nadu	3.38	4.06	7.45	0.21	7.23
Uttar Pradesh	3.40	4.20	7.60	0.21	7.39
Others	3.42	4.42	7.84	0.21	7.62

<b>Bagasse Based Co-generation Project</b>					
Andhra Pradesh	3.17	2.77	5.94	0.24	5.70
Haryana	2.84	3.94	6.79	0.21	6.58
Maharashtra	2.55	3.89	6.43	0.18	6.25

Punjab	2.80	3.47	6.27	0.21	6.06
Tamil Nadu	2.46	2.99	5.45	0.18	5.27
Uttar Pradesh	3.20	3.09	6.29	0.24	6.05
Others	2.79	3.36	6.14	0.21	5.94
<b>Solar PV and Solar Thermal</b>					
<b>Particular</b>	<b>Levelling Total Tariff (FY 2016-17)</b>		<b>Benefit of Accelerated Depreciation (if availed)</b>	<b>Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)</b>	
	(₹/kWh)		(₹/kWh)	(₹/kWh)	
Solar PV	5.68		0.59	5.09	
Solar Thermal	12.08		1.24	10.84	
<b>State</b>	<b>Levelling Fixed Cost</b>	<b>Variable Cost (FY 2016-17)</b>	<b>Applicable Tariff Rate (FY 2016- 17)</b>	<b>Benefit of Accelerated Depreciation (if availed)</b>	<b>Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)</b>
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
<b>Biomass Gasifier Power Project</b>					
Andhra Pradesh	2.61	3.90	6.51	0.13	6.38
Haryana	2.67	4.44	7.10	0.13	6.97
Maharashtra	2.67	4.54	7.21	0.13	7.08
Punjab	2.68	4.64	7.33	0.13	7.20
Rajasthan	2.61	3.87	6.49	0.13	6.35
Tamil Nadu	2.61	3.84	6.44	0.13	6.31
Uttar Pradesh	2.62	3.97	6.59	0.13	6.46

Others	2.64	4.17	6.81	0.13	6.68
<b>Biogas based Generation</b>					
Biogas	4.09	3.59	7.68	0.26	7.42

1. The detailed computations for the generic tariff for various RE technologies have been enclosed to this Order as per the details given hereunder:

<b>S.No</b>	<b>Renewable Energy Projects</b>	<b>Annexure</b>
<b>A</b>	<b>Wind Power Projects</b>	
	Wind Zone-I	Annexure 1A
	Wind Zone-II	Annexure 1B
	Wind Zone III	Annexure 1C
	Wind Zone IV	Annexure 1D
	Wind Zone V	Annexure 1E
<b>B</b>	<b>Small Hydro Power Projects</b>	
	Projects Less than 5 MW for HP, Uttarakhand and NE States	Annexure 2A
	Projects between 5 MW and 25 MW for HP, Uttarakhand and NE States	Annexure 2B
	Projects less than 5 MW for other States	Annexure 2C
	Projects between 5 MW and 25 MW for other states	Annexure 2D
<b>C.1</b>	<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and using Travelling Grate boiler</b>	
	Andhra Pradesh	Annexure 3.1A
	Haryana	Annexure 3.1B
	Maharashtra	Annexure 3.1C
	Punjab	Annexure 3.1D
	Rajasthan	Annexure 3.1E
	Tamil Nadu	Annexure 3.1F
	Uttar Pradesh	Annexure 3.1G
	Others	Annexure 3.1H
<b>C.2</b>	<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using Travelling Grate boiler</b>	
	Andhra Pradesh	Annexure 3.2A
	Haryana	Annexure 3.2B
	Maharashtra	Annexure 3.2C
	Punjab	Annexure 3.2D

<b>S.No</b>	<b>Renewable Energy Projects</b>	<b>Annexure</b>
	Rajasthan	Annexure 3.2E
	Tamil Nadu	Annexure 3.2F
	Uttar Pradesh	Annexure 3.2G
	Others	Annexure 3.2H
<b>C.3</b>	<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and using Travelling Grate boiler</b>	
	Andhra Pradesh	Annexure 3.3A
	Haryana	Annexure 3.3B
	Maharashtra	Annexure 3.3C
	Punjab	Annexure 3.3D
	Rajasthan	Annexure 3.3E
	Tamil Nadu	Annexure 3.3F
	Uttar Pradesh	Annexure 3.3G
	Others	Annexure 3.3H
<b>C.4</b>	<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using Travelling Grate boiler</b>	
	Andhra Pradesh	Annexure 3.4A
	Haryana	Annexure 3.4B
	Maharashtra	Annexure 3.4C
	Punjab	Annexure 3.4D
	Rajasthan	Annexure 3.4E
	Tamil Nadu	Annexure 3.4F
	Uttar Pradesh	Annexure 3.4G
	Others	Annexure 3.4H
<b>C.5</b>	<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and using AFBC boiler</b>	
	Andhra Pradesh	Annexure 3.5A
	Haryana	Annexure 3.5B
	Maharashtra	Annexure 3.5C
	Punjab	Annexure 3.5D
	Rajasthan	Annexure 3.5E

<b>S.No</b>	<b>Renewable Energy Projects</b>	<b>Annexure</b>
	Tamil Nadu	Annexure 3.5F
	Uttar Pradesh	Annexure 3.5G
	Others	Annexure 3.5H
<b>C.6</b>	<b>Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using AFBC boiler</b>	
	Andhra Pradesh	Annexure 3.6A
	Haryana	Annexure 3.6B
	Maharashtra	Annexure 3.6C
	Punjab	Annexure 3.6D
	Rajasthan	Annexure 3.6E
	Tamil Nadu	Annexure 3.6F
	Uttar Pradesh	Annexure 3.6G
	Others	Annexure 3.6H
<b>C.7</b>	<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and using AFBC boiler</b>	
	Andhra Pradesh	Annexure 3.7A
	Haryana	Annexure 3.7B
	Maharashtra	Annexure 3.7C
	Punjab	Annexure 3.7D
	Rajasthan	Annexure 3.7E
	Tamil Nadu	Annexure 3.7F
	Uttar Pradesh	Annexure 3.7G
	Others	Annexure 3.7H
<b>C.8</b>	<b>Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using AFBC boiler</b>	
	Andhra Pradesh	Annexure 3.8A
	Haryana	Annexure 3.8B
	Maharashtra	Annexure 3.8C
	Punjab	Annexure 3.8D
	Rajasthan	Annexure 3.8E
	Tamil Nadu	Annexure 3.8F

<b>S.No</b>	<b>Renewable Energy Projects</b>	<b>Annexure</b>
	Uttar Pradesh	Annexure 3.8G
	Others	Annexure 3.8H
<b>D</b>	<b>Non-Fossil Fuel Based Cogeneration</b>	
	Andhra Pradesh	Annexure 4A
	Haryana	Annexure 4B
	Maharashtra	Annexure 4C
	Punjab	Annexure 4D
	Tamil Nadu	Annexure 4E
	Uttar Pradesh	Annexure 4F
	Others	Annexure 4G
<b>E</b>	<b>Solar Projects</b>	
	Solar PV Projects	Annexure 5A
	Solar Thermal Projects	Annexure 6A
<b>F</b>	<b>Biomass Gasifier Power Projects</b>	
	Andhra Pradesh	Annexure 7A
	Haryana	Annexure 7B
	Maharashtra	Annexure 7C
	Punjab	Annexure 7D
	Rajasthan	Annexure 7E
	Tamil Nadu	Annexure 7F
	Uttar Pradesh	Annexure 7G
	Others	Annexure 7H
<b>G</b>	<b>Biogas based Power Projects</b>	Annexure 8A

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

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

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

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

New Delhi  
Dated the



## Appendix-1

### Capital cost of Indexation for Wind Power Projects (FY 2016-17)

#### Indexation Formulation

$$CC(n) = P\&M(n) * [1 + F1 + F2 + F3]$$

$$d(n) = (a * (SI_{(n-1)}/SI_{(0)}) - 1) + b * (EI_{(n-1)}/EI_{(0)}) - 1) /$$

$$(a+b) \quad P\&M(n) = P\&M(0) * (1 + d(n))$$

Month/Year	Electrical Machinery		Steel	
	2015	2011	2015	2011
January	139.00	125.10	129.40	118.60
February	139.00	125.10	130.10	113.00
March	138.20	126.40	130.10	113.00
April	137.90	127.20	130.10	113.00
May	137.90	127.60	130.10	113.00
June	138.20	128.00	130.10	119.60
July	138.30	128.70	130.10	126.20
August	138.40	129.20	130.10	126.20
September	138.40	130.90	130.10	126.20
October	138.30	130.60	130.10	126.20
November	138.30	130.80	130.10	126.20
December		131.00		126.20
Average	138.355	128.383	130.036	120.617

Parameters	Description	Value
CC(0) (₹ L/MW)	Capital Cost for the Base Year	575
P&M(0) (₹ L/MW)	Plant & Machinery Cost for the Base Year	460
d(n)	Capital Cost escalation Factor	7.792%
P&M(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2016-17)	495.85
CC(n) (₹ L/MW)	Capital Cost for the nth Year (FY 2016-17)	619.81

Source of WPI (Steel and Electrical Machinery): Office of Economic Advisor, Ministry of Commerce and Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in))

## Appendix-2

### Capital cost of Indexation for Small Hydro Power Projects (FY 2016-17)

Indexation Formulation
$CC_{(n)} = P\&M_{(n)} * [1 + F1 + F2 + F3]$
$d_{(n)} = (a * (SI_{(n-1)}/SI_{(0)})-1) + b * (EI_{(n-1)}/EI_{(0)})-1) / (a+b)$
$P\&M_{(n)} = P\&M_{(0)} * (1 + d_{(n)})$

Variable	Description	Value
a	Weightage for Steel Index	0.6
b	Weightage for Electrical Machinery Index	0.4
F1	Factor for Land and Civil Work	0.16
F2	Factor for Erection and Commissioning	0.1
F3	Factor for IDC and Financing	0.14

Month/Year	Electrical Machinery		Steel	
	2015	2011	2015	2011
January	139.00	125.10	129.40	118.60
February	139.00	125.10	130.10	113.00
March	138.20	126.40	130.10	113.00
April	137.90	127.20	130.10	113.00
May	137.90	127.60	130.10	113.00
June	138.20	128.00	130.10	119.60
July	138.30	128.70	130.10	126.20
August	138.40	129.20	130.10	126.20
September	138.40	130.90	130.10	126.20
October	138.30	130.60	130.10	126.20
November	138.30	130.80	130.10	126.20
December		131.00		126.20
Average	138.355	128.383	130.036	120.617

Parameters	Description	HP/Uttarakhand/NE		Other States	
		SHP <5 MW	5MW-25 MW	SHP<5 MW	5MW-25 MW
CC(0) (₹ L/MW)	Capital Cost for the Base Year	770	700	600	550
P&M(0) (₹ L/MW)	Plant & Machinery Cost for the Base Year	550	500	428.57	392.86
d(n)	Capital Cost escalation Factor	7.792%	7.792%	7.792%	7.792%
P&M(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 16-17)	592.86	538.96	461.97	423.47
CC(n) (₹ L/MW)	Capital Cost for the nth Year (FY 2016-17)	830.00	754.55	646.75	592.86

Capital cost of Indexation for Biomass Power Projects (FY 2016-17)

<p>Indexation Formulation  <math>CC(n) = P\&amp;M(n) * [1 + F1 + F2 + F3]</math>  <math>d(n) = (a * (SI(n-1)/SI(0))-1) + b * (EI(n-1)/EI(0))-1) / (a+b)</math>  <math>P\&amp;M(n) = P\&amp;M(0) * (1 + d(n))</math></p>
---

Variable	Description	Value
A	Weightage for Steel Index	0.7
B	Weightage for Electrical Machinery Index	0.3
F1	Factor for Land and Civil Work	0.1
F2	Factor for Erection and Commissioning	0.09
F3	Factor for IDC and Financing	0.14

Month/Year	Electrical Machinery		Steel	
	2015	2011	2015	2011
January	139.00	125.10	129.40	118.60
February	139.00	125.10	130.10	113.00
March	138.20	126.40	130.10	113.00
April	137.90	127.20	130.10	113.00
May	137.90	127.60	130.10	113.00
June	138.20	128.00	130.10	119.60
July	138.30	128.70	130.10	126.20
August	138.40	129.20	130.10	126.20
September	138.40	130.90	130.10	126.20
October	138.30	130.60	130.10	126.20
November	138.30	130.80	130.10	126.20
December		131.00		126.20
Average	138.355	128.383	130.036	120.617

Parameters	Description	Biomass Power Projects (Rankine Cycle)			
		a*	b*	c*	d*
CC(0) (₹ L/MW)	Capital Cost for the Base Year : (FY 13-14)	540.00	580.00	590.00	630.00
P&M(0) (₹ L/MW)	Plant & Machinery Cost for the Base Year: (FY 13- 14)	406.02	436.09	443.61	473.68
d(n)	Capital Cost escalation Factor	3.52%	3.52%	3.52%	3.52%
P&M(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 16-17)	420.33	451.46	459.24	490.38
CC(n) (₹ L/MW)	Capital Cost for the nth Year (FY 2016-17)	<b>559.03</b>	<b>600.44</b>	<b>610.80</b>	<b>652.20</b>

Source of WPI (Steel and Electrical Machinery): Office of Economic Advisor, Ministry of Commerce and Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in))

- \* a. Project [other than rice straw and juliflora (plantation) based project] with water cooled condenser;
- \* b. Project [other than rice straw and Juliflora (plantation) based project] with air cooled condenser;
- \* c. For rice straw and juliflora (plantation) based project with water cooled condenser;
- \* d. For rice straw and juliflora (plantation) based project with air cooled condenser.

#### Appendix-4

#### Capital cost of Indexation for Non-fossil fuel based Cogeneration Power Projects (FY 16-17)

<p>Indexation Formulation</p> $CC(n) = P\&M(n) * [1 + F1 + F2 + F3]$ $d(n) = (a * (SI_{(n-1)}/SI_{(0)}-1) + b * (EI_{(n-1)}/EI_{(0)}-1)) / (a+b)$ $P\&M(n) = P\&M(0) * (1 + d(n))$
--

Variable	Description	Value
a	Weightage for Steel Index	0.70
b	Weightage for Electrical Machinery Index	0.30
F1	Factor for Land and Civil Work	0.10
F2	Factor for Erection and Commissioning	0.09
F3	Factor for IDC and Financing	0.14

Month/Year	Electrical Machinery		Steel	
	2015	2011	2015	2011
January	139.00	125.10	129.40	118.60
February	139.00	125.10	130.10	113.00
March	138.20	126.40	130.10	113.00
April	137.90	127.20	130.10	113.00
May	137.90	127.60	130.10	113.00
June	138.20	128.00	130.10	119.60
July	138.30	128.70	130.10	126.20
August	138.40	129.20	130.10	126.20
September	138.40	130.90	130.10	126.20
October	138.30	130.60	130.10	126.20
November	138.30	130.80	130.10	126.20
December		131.00		126.20
Average	138.355	128.383	130.036	120.617

Parameters	Description	Value
CC <sub>(0)</sub> (₹ L/MW)	Capital Cost for the Base Year	420.00
P&M <sub>(0)</sub> (₹ L/MW)	Plant & Machinery Cost for the Base Year	315.79
d(n)	Capital Cost escalation Factor	7.7
P&M <sub>(n)</sub> (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2016-17)	340.41
CC <sub>(n)</sub> (₹ L/MW)	Capital Cost for the nth Year (FY2016-17)	<b>452.75</b>

Source of WPI (Steel and Electrical Machinery): Office of Economic Advisor, Ministry of Commerce and Industry ([www.eaindstry.nic.in](http://www.eaindstry.nic.in))

## Capital cost of Indexation for Biomass Gasifier Power Projects (FY 2016-17)

<p>Indexation Formulation</p> $CC(n) = P\&M(n) * [1 + F1 + F2 + F3]$ $d(n) = (a * (SI_{(n-1)}/SI_{(0)} - 1) + b * (EI_{(n-1)}/EI_{(0)} - 1)) / (a+b)$ $P\&M(n) = P\&M(0) * (1 + d(n))$
--

Variable	Description	Value
a	Weightage for Steel Index	0.70
b	Weightage for Electrical Machinery Index	0.30
F1	Factor for Land and Civil Work	0.10
F2	Factor for Erection and Commissioning	0.09
F3	Factor for IDC and Financing	0.14

Month/Year	Electrical Machinery		Steel	
	2015	2011	2015	2011
January	139.00	125.10	129.40	118.60
February	139.00	125.10	130.10	113.00
March	138.20	126.40	130.10	113.00
April	137.90	127.20	130.10	113.00
May	137.90	127.60	130.10	113.00
June	138.20	128.00	130.10	119.60
July	138.30	128.70	130.10	126.20
August	138.40	129.20	130.10	126.20
September	138.40	130.90	130.10	126.20
October	138.30	130.60	130.10	126.20
November	138.30	130.80	130.10	126.20
December		131.00		126.20
Average	138.355	128.383	130.036	120.617

Parameters	Description	Value
CC <sub>(0)</sub> (₹ L/MW)	Capital Cost for the Base Year	550.00
P&M <sub>(0)</sub> (₹ L/MW)	Plant & Machinery Cost for the Base Year	413.53
d(n)	Capital Cost escalation Factor	7.797%
P&M <sub>(n)</sub> (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2016-17)	445.78
CC <sub>(n)</sub> (₹ L/MW)	Capital Cost for the nth Year (FY2016-17)	592.88

Source of WPI (Steel and Electrical Machinery): Office of Economic Advisor, Ministry of Commerce and Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in))

## Capital cost of Indexation for Biogas based Power Projects (FY 2016-17)

<p>Indexation Formulation</p> $CC_{(n)} = P\&M_{(n)} * [1 + F1 + F2 + F3]$ $d_{(n)} = (a * (SI_{(n-1)}/SI_{(0)})-1) + b * (EI_{(n-1)}/EI_{(0)})-1) / (a+b)$ $P\&M_{(n)} = P\&M_{(0)} * (1 + d_{(n)})$
---

Variable	Description	Value
A	Weightage for Steel Index	0.70
B	Weightage for Electrical Machinery Index	0.30
F1	Factor for Land and Civil Work	0.10
F2	Factor for Erection and Commissioning	0.09
F3	Factor for IDC and Financing	0.14

Month/Year	Electrical Machinery		Steel	
	2015	2011	2015	2011
January	139.00	125.10	129.40	118.60
February	139.00	125.10	130.10	113.00
March	138.20	126.40	130.10	113.00
April	137.90	127.20	130.10	113.00
May	137.90	127.60	130.10	113.00
June	138.20	128.00	130.10	119.60
July	138.30	128.70	130.10	126.20
August	138.40	129.20	130.10	126.20
September	138.40	130.90	130.10	126.20
October	138.30	130.60	130.10	126.20
November	138.30	130.80	130.10	126.20
December		131.00		126.20
Average	138.355	128.383	130.036	120.617

Parameters	Description	Value
CC <sub>(0)</sub> (₹ L/MW)	Capital Cost for the Base Year	1100.00
P&M <sub>(0)</sub> (₹ L/MW)	Plant & Machinery Cost for the Base Year	827.07
d(n)	Capital Cost escalation Factor	7.797%
P&M <sub>(n)</sub> (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2016-17)	891.55
CC <sub>(n)</sub> (₹ L/MW)	Capital Cost for the nth Year (FY2016-17)	1185.76

Source of WPI (Steel and Electrical Machinery): Office of Economic Advisor, Ministry of Commerce and Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in))

**Biomass Fuel Price across States for FY 2016-17**

As per fuel price Index Mechanism outlined under Regulation 45 and the availability of required information

Fuel Price indexation for Biomass Power Projects (FY2016-17)

Indexation Formulation:

$$P(n) = P(n-1) * \{a * (WPI(n)/WPI(n-1)) + b * (1 + IRC(n-1)) + c * (Pd(n)/Pd(n-1))\}$$

Parameter	Value
WPI n-1	<b>180.800</b>
WPI n	<b>176.400</b>
IRC n-1	<b>-1.91%</b>
Pd n-1	<b>223.267</b>
Pd n	<b>191.163</b>
a	<b>0.2</b>
b	<b>0.6</b>
c	<b>0.2</b>

State	Biomass price	Biomass price
	(Rs/MT)	(Rs/MT)
	2015-16	2016-17
Andhra Pradesh	2940.31	2807.74
Haryana	3346.75	3195.86
Maharashtra	3422.95	3268.62
Punjab	3500.42	3342.60
Rajasthan	2921.25	2789.54
Tamil Nadu	2892.03	2761.64
Uttar Pradesh	2991.10	2856.25
Other States	3144.80	3003.01

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2015 and April 2014 respectively.
2. The Calculation of Pd (n) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2015 to November 2015.
3. The Calculation of Pd (n-1) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2014 to March 2015.



4. The Calculation of Pd (n) and Pd (n-1) are shown as under:

**WPI (Price of HSD) change as 2014-15 and 2015-16**

Month	2015-16	2014-15
Apr	195.60	230.10
May	209.60	232.30
Jun	212.00	235.20
Jul	200.80	238.80
Aug	179.40	240.40
Sep	174.00	242.00
Oct	176.50	239.20
Nov	181.40	218.10
Dec		210.80
Jan		200.70
Feb		188.40
Mar		203.20
<b>Average</b>	<b>191.163</b>	<b>223.267</b>

Source of WPI and WPI (Price of HSD): Office of Economic Advisor, Ministry of Commerce and Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in)),

From	To	IRC	Days	Average IRC
4/1/2015	9/30/2015	3.83%	183	-1.91%
10/1/2015	3/31/2016	-7.65%	183	
		Total	366	

Source of IRC: CERC ([www.cercind.gov.in](http://www.cercind.gov.in))

**Bagasse Fuel Price across States for FY 2016-17**

As per fuel price Index Mechanism outlined under Regulation 54 and the availability of required information comparison to be 2015-16 and projection for 2016-17

Fuel Price indexation for Bagasse Power Projects (FY2016-17)

<p>Indexation Formulation</p> $P_n = P_{n-1} * \{a * (WPI_n / WPI_{n-1}) + b * (1 + IRC_{n-1}) + c * (P_{dn} / P_{dn-1})\}$
---

Parameter	Value
WPI n-1	180.800
WPI n	176.400
IRC n-1	-1.91%
Pd n-1	223.267
Pd n	191.163
a	0.2
b	0.6
c	0.2

State	Biomass price (Rs/MT) 2015-16	Biomass price (Rs/MT) 2016-17
Andhra Pradesh	1660.04	1585.19
Haryana	2361.13	2254.67
Maharashtra	2326.84	2221.93
Punjab	2077.90	1984.22
Tamil Nadu	1788.32	1707.69
Uttar Pradesh	1851.82	1768.33
Other States	2010.58	1919.93

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2015 and April 2014 respectively.
2. The Calculation of Pd (n) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2015 to November 2015.
3. The Calculation of Pd (n-1) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2014 to March 2015.

4. The Calculation of Pd (n) and Pd (n-1) are shown as under:

<b>Month</b>	<b>2015-16</b>	<b>2014-15</b>
Apr	195.60	230.10
May	209.60	232.30
Jun	212.00	235.20
Jul	200.80	238.80
Aug	179.40	240.40
Sep	174.00	242.00
Oct	176.50	239.20
Nov	181.40	218.10
Dec		210.80
Jan		200.70
Feb		188.40
Mar		203.20
<b>Average</b>	<b>191.163</b>	<b>223.267</b>

Source of WPI and WPI (Price of HSD): Office of Economic Advisor, Ministry of Commerce and Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in)),

From	To	IRC	Days	Average IRC
4/1/2015	9/30/2015	3.83%	183	-1.91%
10/1/2015	3/31/2016	-7.65%	183	
		Total	366	

Source of IRC: CERC ([www.cercind.gov.in](http://www.cercind.gov.in))

**Biomass Gasifier Fuel Price across States for FY 2016-17**

As per fuel price Index Mechanism outlined under Regulation 74 and the availability of required information

Fuel Price indexation for Biomass gasifier Power Projects (FY2016-17)

<p>Indexation Formulation</p> $P_n = P_{n-1} * \{a * (WPI_n / WPI_{n-1}) + b * (1 + IRC_{n-1}) + c * (P_{dn} / P_{dn-1})\}$
---

Parameter	Value
WPI n-1	<b>180.800</b>
WPI n	<b>176.400</b>
IRC n-1	<b>-1.91%</b>
Pd n-1	<b>223.267</b>
Pd n	<b>191.163</b>
a	<b>0.2</b>
b	<b>0.6</b>
c	<b>0.2</b>

State	Biomass Price (Rs/MT) 2015-16	Biomass Price (Rs/MT) 2016-17
Andhra Pradesh	2940.31	2807.74
Haryana	3346.75	3195.86
Maharashtra	3422.95	3268.62
Punjab	3500.42	3342.60
Rajasthan	2921.25	2789.54
Tamil Nadu	2892.03	2761.64
Uttar Pradesh	2991.10	2856.25
Other States	3144.80	3003.01

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2015 and April 2014 respectively.
2. The Calculation of Pd (n) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2015 to November 2015.
3. The Calculation of Pd (n-1) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2014 to March 2015.

4. The Calculation of Pd (n) and Pd (n-1) are shown as under:

WPI (Price of HSD)

Month	2015-16	2014-15
Apr	195.60	230.10
May	209.60	232.30
Jun	212.00	235.20
Jul	200.80	238.80
Aug	179.40	240.40
Sep	174.00	242.00
Oct	176.50	239.20
Nov	181.40	218.10
Dec		210.80
Jan		200.70
Feb		188.40
Mar		203.20
<b>Average</b>	<b>191.163</b>	<b>223.267</b>

Source of WPI and WPI (Price of HSD): Office of Economic Advisor,  
Ministry of Commerce and Industry ([www.eaindustry.nic.in](http://www.eaindustry.nic.in)),

From	To	IRC	Days	Average IRC
4/1/2015	9/30/2015	3.83%	183	-1.91%
10/1/2015	3/31/2016	-7.65%	183	
		Total	366	

Source of IRC: CERC ([www.cercind.gov.in](http://www.cercind.gov.in))

**Fuel Price for Biogas based power plant for FY 2016-17**

As per fuel price Index Mechanism outlined under Regulation 83 and the availability of required information

Fuel Price indexation for Biogas based power projects (FY2016-17)

<p>Indexation Formulation</p> $P_n = P_{n-1} * \{a * (WPI_n / WPI_{n-1}) + b * (1 + IRC_{n-1}) + c * (P_{dn} / P_{dn-1})\}$
---

Parameter	Value
WPI n-1	<b>180.800</b>
WPI n	<b>176.400</b>
IRC n-1	<b>-1.91%</b>
Pd n-1	<b>223.267</b>
Pd n	<b>191.163</b>
a	<b>0.2</b>
b	<b>0.6</b>
c	<b>0.2</b>

Biogas price (Rs/MT) 2015-16	Biogas price (Rs/MT) 2016-17
1257.41	1200.72

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2014 and April 2015 respectively.
2. The Calculation of Pd (n) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2015 to November 2015.
3. The Calculation of Pd (n-1) is based on the weighted average of the WPI (Price of HSD) figures available for the months from April 2014 to March 2015.

The Calculation of Pd (n) and Pd (n-1) are shown as under:

WPI (Price of HSD)

Month	2015-16	2014-15
Apr	195.60	230.10
May	209.60	232.30
Jun	212.00	235.20
Jul	200.80	238.80
Aug	179.40	240.40
Sep	174.00	242.00
Oct	176.50	239.20
Nov	181.40	218.10
Dec		210.80
Jan		200.70
Feb		188.40
Mar		203.20
<b>Average</b>	<b>191.163</b>	<b>223.267</b>

Source of WPI and WPI (Price of HSD): Office of Economic Advisor,  
Ministry of Commerce and Industry ([www.eaindstry.nic.in](http://www.eaindstry.nic.in)),

From	To	IRC	Days	Average IRC
4/1/2015	9/30/2015	3.83%	183	-1.91%
10/1/2015	3/31/2016	-7.65%	183	
		Total	366	

Source of IRC: CERC ([www.cercind.gov.in](http://www.cercind.gov.in))

Wind Energy Projects

<b>Assumptions: Wind Energy Projects</b>						
<b>S. No.</b>	<b>Assumption Head</b>	<b>Sub-Head</b>	<b>Sub-Head (2)</b>	<b>Unit</b>	<b>Wind Zone 1</b>	
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1	
			Capacity Utilization Factor	%	20%	
			Useful Life	Years	25	
2	Project Cost	<u>Capital Cost/MW</u>	Power Plant Cost	Rs Lacs/MW	619.807	
3	Sources of Fund	<u>Debt: Equity</u>	Tariff Period	Years	13	
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	433.865	
			Total Equity Amount	Rs Lacs	185.942	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	433.86
			Moratorium Period	years	0	
			Repayment Period(incld Moratorium)	years	12	
			Interest Rate	%	12.76%	
			<u>Equity Component</u>	Equity amount	Rs Lacs	185.94
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity 11th year onwards	% p.a	24.00%	
			Weighted average of ROE		22.40%	
Discount Rate		10.70%				
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%	
			<u>Depreciation</u>	Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%	
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			<u>For Variable Charges</u>			
			Interest On Working Capital	%	13.26%	
6	Operation & Maintenance	<u>O &amp;M (FY16-17)</u>		Rs Lacs/MW	11.24	
			<u>Total O &amp; M Expenses Escalation</u>	%	5.72%	
			<u>O &amp;M (FY12-13)</u>	Rs Lacs/MW	9.00	



Determination of Tariff																													
Units Generation		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Installed Capacity		MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross/Net Generation		MU		1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	
Fixed Cost		Unit	Year-->	1	2	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
O&M Expenses		Rs Lakh		11.24	11.89	12.57	13.28	14.04	14.85	15.70	16.59	17.54	18.55	19.61	20.73	21.92	23.17	24.49	25.90	27.38	28.94	30.60	32.35	34.20	36.16	38.22	40.41	42.72	
Depreciation		Rs Lakh		36.13	36.13	36.13	36.13	36.13	36.13	36.13	36.13	36.13	36.13	36.13	36.13	36.13	36.13	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55	
Interest on term loan		Rs Lakh		53.06	48.45	43.83	39.22	34.61	29.99	25.38	20.76	16.15	11.54	6.92	2.31	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	
Interest on working Capital		Rs Lakh		3.47	3.40	3.33	3.26	3.20	3.14	3.08	3.03	2.97	2.92	3.05	3.00	2.41	2.48	2.55	2.63	2.71	2.79	2.88	2.98	3.08	3.19	3.30	3.42	3.54	
Return on Equity		Rs Lakh		37.19	37.19	37.19	37.19	37.19	37.19	37.19	37.19	37.19	37.19	37.19	44.63	44.63	44.63	44.63	44.63	44.63	44.63	44.63	44.63	44.63	44.63	44.63	44.63	44.63	
<b>Total Fixed Cost</b>		<b>Rs Lakh</b>		<b>141.09</b>	<b>137.05</b>	<b>133.05</b>	<b>129.09</b>	<b>125.17</b>	<b>121.30</b>	<b>117.48</b>	<b>113.71</b>	<b>109.99</b>	<b>106.33</b>	<b>110.34</b>	<b>106.80</b>	<b>78.51</b>	<b>79.83</b>	<b>81.23</b>	<b>82.71</b>	<b>84.27</b>	<b>85.92</b>	<b>87.66</b>	<b>89.51</b>	<b>91.46</b>	<b>93.52</b>	<b>95.70</b>	<b>98.01</b>	<b>100.44</b>	
Levillised tariff corresponding to Useful life																													
Per Unit Cost of Generation		Unit	Levillised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
O&M expn		Rs/kWh	<b>1.02</b>	0.64	0.68	0.72	0.76	0.80	0.85	0.90	0.95	1.00	1.06	1.12	1.18	1.25	1.32	1.40	1.48	1.56	1.65	1.75	1.85	1.95	2.06	2.18	2.31	2.44	
Depreciation		Rs/kWh	<b>1.71</b>	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	
Int. on term loan		Rs/kWh	<b>1.45</b>	3.03	2.77	2.50	2.24	1.98	1.71	1.45	1.19	0.92	0.66	0.40	0.13	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	
Int. on working capital		Rs/kWh	<b>0.18</b>	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.14	0.14	0.15	0.15	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.20	
RoE		Rs/kWh	<b>2.25</b>	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	
<b>Total COG</b>		<b>Rs/kWh</b>	<b>6.61</b>	<b>8.05</b>	<b>7.82</b>	<b>7.59</b>	<b>7.37</b>	<b>7.14</b>	<b>6.92</b>	<b>6.71</b>	<b>6.49</b>	<b>6.28</b>	<b>6.07</b>	<b>6.30</b>	<b>6.10</b>	<b>4.48</b>	<b>4.56</b>	<b>4.64</b>	<b>4.72</b>	<b>4.81</b>	<b>4.90</b>	<b>5.00</b>	<b>5.11</b>	<b>5.22</b>	<b>5.34</b>	<b>5.46</b>	<b>5.59</b>	<b>5.73</b>	
<b>COG excl. RoE</b>				<b>5.93</b>	<b>5.70</b>	<b>5.47</b>	<b>5.25</b>	<b>5.02</b>	<b>4.80</b>	<b>4.58</b>	<b>4.37</b>	<b>4.16</b>	<b>3.95</b>	<b>3.75</b>	<b>3.55</b>	<b>1.93</b>	<b>2.01</b>	<b>2.09</b>	<b>2.17</b>	<b>2.26</b>	<b>2.36</b>	<b>2.46</b>	<b>2.56</b>	<b>2.67</b>	<b>2.79</b>	<b>2.92</b>	<b>3.05</b>	<b>3.19</b>	
Discount Factor					1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145	0.131	0.118	0.107	0.097	0.087
<b>Levillised Tariff</b>		<b>Rs/Unit</b>	<b>6.61</b>																										

Determination of Accelerated Depreciation for Wind Power Projects																										
Depreciation amount		90%																								
Book Depreciation rate		5.28%																								
Tax Depreciation rate		80%																								
Additional Depreciation		20.00%																								
Income Tax (Normal Rates)		33.990%																								
Capital Cost Rs. Lakh		619.807																								
Years	----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
Book Depreciation		%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	
Book Depreciation		Rs Lakh	16.36	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	17.85	0.00	0.00	
Accelerated Depreciation																										
Opening		%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%	0.00%	
Allowed during the year		%	50.00%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%	0.00%	0.00%	
Closing		%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%	0.00%	0.00%	
Accelerated Depn.		Rs Lakh	309.90	278.91	24.79	4.96	0.99	0.20	0.04	0.01	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	0.00	0.00	
Net Depreciation Benefit		Rs Lakh	293.54	246.19	-7.93	-27.77	-31.73	-32.53	-32.69	-32.72	-32.72	-32.73	-32.73	-32.73	-32.73	-32.73	-32.73	-32.73	-32.73	-32.73	-32.73	-32.73	-17.85	0.00	0.00	
Tax Benefit		Rs Lakh	99.77	83.68	-2.70	-9.44	-10.79	-11.06	-11.11	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-11.12	-6.07	0.00	0.00
Energy generation		MU	0.88	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	
Per unit benefit		Rs/Unit	11.39	4.78	-0.15	-0.54	-0.62	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.63	-0.35	0.00	0.00	
Discounting Factor			1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15				
Tax Benefit Levillised		11.66	5.34																							
Electricity Generation (Levillised)		1.66																								
<b>Levillised benefit</b>		<b>Rs/Unit</b>	<b>0.70</b>																							

Assumptions: Wind Energy Projects							
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 2		
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1		
			Capacity Utilization Factor	%	22%		
			Useful Life	Years	25		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	619.807		
3	Sources of Fund	Debt: Equity	Tariff Period	Years	13		
			Debt	%	70%		
			Equity	%	30%		
			Total Debt Amount	Rs Lacs	433.865		
			Total Equity Amount	Rs Lacs	185.942		
			Debt Component	Loan Amount	Rs Lacs	433.86	
				Moratorium Period	years	0	
				Repayment Period(incl'd Moratorium)	years	12	
				Interest Rate	%	12.76%	
			Equity Component	Equity amount	Rs Lacs	185.94	
				Return on Equity for first 10 years	% p.a	20.00%	
				Return on Equity 11th year onwards	% p.a	24.00%	
Weighted average of ROE		22.40%					
Discount Rate		10.70%					
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%		
			Depreciation	Depreciation Rate for first 12 years	%	5.83%	
				Depreciation Rate 13th year onwards	%	1.54%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1		
			Maintenance Spare	(% of O&M exepenses)	15%		
			Receivables for Debtors	Months	2		
			For Variable Charges	Interest On Working Capital		%	13.26%
6	Operation & Maintenance	O & M (FY16-17)		Rs Lacs/MW	11.24		
			Total O & M Expenses Escalation	%	5.72%		
			O & M (FY12-13)	Rs Lacs/MW	9.00		



Assumptions: Wind Energy Projects						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 3	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Capacity Utilization Factor	%	25%	
			Useful Life	Years	25	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	619.807	
3	Sources of Fund	Debt: Equity	Tariff Period	Years	13	
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	433.865	
			Total Equity Amount	Rs Lacs	185.942	
			Debt Component	Loan Amount	Rs Lacs	433.86
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	12.76%
			Equity Component	Equity amount	Rs Lacs	185.94
				Return on Equity for first 10 years	% p.a	20.00%
				Return on Equity 11th year onwards	% p.a	24.00%
Weighted average of ROE		22.40%				
Discount Rate		10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate for first 12 years	%	5.83%
				Depreciation Rate 13th year onwards	%	1.54%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Interest On Working Capital	%	13.26%
6	Operation & Maintenance	O & M (FY16-17)		Rs Lacs/MW	11.24	
			Total O & M Expenses Escalation	%	5.72%	
			O & M (FY12-13)	Rs Lacs/MW	9.00	



Assumptions: Wind Energy Projects							
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 4		
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1		
			Capacity Utilization Factor	%	30%		
			Useful Life	Years	25		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	619.807		
3	Sources of Fund	Debt: Equity	Tariff Period	Years	13		
			Debt	%	70%		
			Equity	%	30%		
			Total Debt Amount	Rs Lacs	433.865		
			Total Equity Amount	Rs Lacs	185.942		
			Debt Component	Loan Amount	Rs Lacs	433.86	
				Moratorium Period	years	0	
				Repayment Period(incl'd Moratorium)	years	12	
				Interest Rate	%	12.76%	
			Equity Component	Equity amount	Rs Lacs	185.94	
				Return on Equity for first 10 years	% p.a	20.00%	
				Return on Equity 11th year onwards	% p.a	24.00%	
Weighted average of ROE		22.40%					
Discount Rate		10.70%					
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%		
			Depreciation	Depreciation Rate for first 12 years	%	5.83%	
				Depreciation Rate 13th year onwards	%	1.54%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1		
			Maintenance Spare	(% of O&M exepenses)	15%		
			Receivables for Debtors	Months	2		
			For Variable Charges	Interest On Working Capital		%	13.26%
6	Operation & Maintenance	O & M (FY16-17)		Rs Lacs/MW	11.24		
			Total O & M Expenses Escalation	%	5.72%		
			O & M (FY12-13)	Rs Lacs/MW	9.00		



Assumptions: Wind Energy Projects						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 5	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Capacity Utilization Factor	%	32%	
			Useful Life	Years	25	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	619.807	
3	Sources of Fund	Debt: Equity	Tariff Period	Years	13	
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	433.865	
			Total Equity Amount	Rs Lacs	185.942	
			Debt Component	Loan Amount	Rs Lacs	433.86
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	12.76%
			Equity Component	Equity amount	Rs Lacs	185.94
				Return on Equity for first 10 years	% p.a	20.00%
Return on Equity 11th year onwards	% p.a	24.00%				
Weighted average of ROE		22.40%				
Discount Rate		10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate for first 12 years	%	5.83%
				Depreciation Rate 13th year onwards	%	1.54%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Interest On Working Capital	%	13.26%
6	Operation & Maintenance	O &M (FY16-17)	Total O & M Expenses	Rs Lacs/MW	11.24	
			Escalation	%	5.72%	
			O &M (FY12-13)	Rs Lacs/MW	9.00	





## Small Hydro Projects

Small Hydro: Assumptions Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	HP, Uttarakhand, NE States
					Less than 5 MW
1	Power Generation	Capacity	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Useful Life	MW % % Years	1 45% 1% 35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	830.002
3	Sources of Fund	<u>Debt: Equity</u>  <u>Debt Component</u>  <u>Equity Component</u>	Tariff Period  Debt Equity Total Debt Amount Total Equity Amount  Loan Amount Moratorium Period Repayment Period(incld Moratorium) Intrest Rate  Equity amount Normative ROE (Post-tax) Return on Equity for first 10 years  Return on Equity 11th year onwards Weighted average of ROE Discount Rate	Years  % % Rs Lacs Rs Lacs  Rs Lacs years years %  Rs Lacs % % p.a  % p.a % %	35  70% 30% 581.001 249.001  581.00 0 12 12.76%  249.00 16% 20%  24.00% 22.86% 10.70%
4	Financial Assumptions	<u>Depreciation</u>	Income Tax  Depreciation Rate for first 12 years Depreciation Rate 13th year onwards	%  % %	33.990%  5.83% 0.87%
5	Working Capital	<u>For Fixed Charges</u> O&M Charges Maintenance Spare Receivables for Debtors  Intrest On Working Capital	(% of O&M exepenses)	Months  Months  %	1 15% 2  13.26%
6	Operation & Maintenance	O&M Expenses (2016-17) Total O & M Expenses Escalation O&M Expenses (2012-13)		Rs Lacs %	31.23 5.72% 25.00



Small Hydro: Assumptions Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	HP, Uttarakhand, NE States
					5 MW to 25 MW
1	Power Generation	Capacity	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Useful Life	MW % % Years	1 45% 1% 35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	754.547
3	Sources of Fund	Debt: Equity	Tariff Period	Years	13
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	528.183
			Total Equity Amount	Rs Lacs	226.364
		Debt Component	Loan Amount	Rs Lacs	528.18
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Intrest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	226.36
			Normative ROE (Post-tax)		16%
			Return on Equity for first 10 years	% p.a	20%
			Return on Equity 11th year onwards	% p.a	24.00%
			Weighted average of ROE		22.86%
			Discount Rate		10.70%
4	Financial Assumptions		Income Tax	%	33.990%
		Depreciation	Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	0.87%
5	Working Capital	For Fixed Charges		Months	1
		O&M Charges			
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		Intrest On Working Capital		%	13.26%
6	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	22.49
		Total O & M Expenses Escalation		%	5.72%
		O&M Expenses (2012-13)			18.00



Small Hydro: Assumptions Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Other States
					Less than 5 MW
1	Power Generation	Capacity	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Useful Life	MW % % Years	1 30% 1% 35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	646.755
3	Sources of Fund	Debt: Equity	Tariff Period Debt Equity Total Debt Amount Total Equity Amount	Years % % Rs Lacs Rs Lacs	35  70% 30% 452.728 194.026
		Debt Component	Loan Amount Moratorium Period Repayment Period(incl'd Moratorium) Intrest Rate	Rs Lacs years years %	452.73 0 12 12.76%
		Equity Component	Equity amount Normative ROE (Post-tax) Return on Equity for first 10 years Return on Equity 11th year onwards Weighted average of ROE Discount Rate	Rs Lacs  % p.a % p.a  %	194.03 16% 20% 24.00% 22.86% 10.70%
4	Financial Assumptions	Depreciation	Income Tax Depreciation Rate for first 12 years Depreciation Rate 13th year onwards	% % %	33.990%  5.83% 0.87%
5	Working Capital	For Fixed Charges O&M Charges Maintenance Spare Receivables for Debtors Intrest On Working Capital	(% of O&M exepenses)	Months Months %	1 15% 2 13.26%
6	Operation & Maintenance	O&M Expenses (2016-17) Total O & M Expenses Escalation O&M Expenses (2012-13)		Rs Lacs %	24.98 5.72% 20.00



Small Hydro: Assumptions Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Other States
					5 MW to 25 MW
1	Power Generation	Capacity	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Useful Life	MW % % Years	1 30% 1% 35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	592.859
3	Sources of Fund	<u>Debt: Equity</u>  <u>Debt Component</u>  <u>Equity Component</u>	Tariff Period  Debt Equity Total Debt Amount Total Equity Amount  Loan Amount Moratorium Period Repayment Period(incld Moratorium) Intrest Rate  Equity amount Normative ROE (Post-tax) Return on Equity for first 10 years  Return on Equity 11th year onwards Weighted average of ROE Discount Rate	Years  % % Rs Lacs Rs Lacs  Rs Lacs years years %  Rs Lacs % p.a % p.a % p.a %	13  70% 30% 415.001 177.858  415.00 0 12 12.76%  177.86 16% 20%  24.00% 22.86% 10.70%
4	Financial Assumptions	<u>Depreciation</u>	Income Tax  Depreciation Rate for first 12 years Depreciation Rate 13th year onwards	%  % %	33.990%  5.83% 0.87%
5	Working Capital	<u>For Fixed Charges</u> O&M Charges Maintenance Spare Receivables for Debtors  Intrest On Working Capital	(% of O&M exepenses)	Months  Months  %	1 15% 2  13.26%
6	Operation & Maintenance	O&M Expenses (2016-17) Total O & M Expenses Escalation O&M Expenses (2012-13)		Rs Lacs %	17.49 5.72% 14.00





**Biomass Power Projects (Other than Rice Straw & Juliflore (plantation) based projects) with water cooled condenser and using Travelling Grate Boiler**

			Select State	AP	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		Debt Component	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation	Depreciation Rate (power plant)	%
		Depreciation Rate 13th year onwards		%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( % of O&M expenses)		15%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2807.74
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2014-15)	Rs Lacs	40.00	



Assumption for Biomass Power Project Parameters			Select State	Harayana	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity Auxillary Consumption during stabilisation Auxillary Consumption after stabilisation PLF(Stablization for 6 months) PLF(during first year after Stabilization) PLF(second year onwards) Useful Life	MW % % % % % Years	1 11% 10% 60% 70% 80% 20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt Equity Total Debt Amount Total Equity Amount	% % Rs Lacs Rs Lacs	70% 30% 391.323 167.710
		Debt Component	Loan Amount Moratorium Period Repayment Period(incl. Moratorium) Interest Rate	Rs Lacs years years %	391.323 0 12 12.76%
		Equity Component	Equity amount Return on Equity for first 10 years Return on Equity after 10 years Weighted average of ROE Discount Rate (equiv. to WACC)	Rs Lacs % p.a % % %	167.710 20.00% 24.00% 22.00% 10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant) Depreciation Rate 13th year onwards	% %	5.830% 2.505%
5	Working Capital	For Fixed Charges O&M Charges Maintenance Spare Receivables for Debtors For Variable Charges Biomass Stock Interest On Working Capital	(% of O&M exepenses)	Months % Months Months %	1 15% 2 4 13.26%
6	Fuel Related Assumptions	Heat Rate Biomass	After Stabilisation period During Stablization Period Base Price GCV - Biomass Biomass Price Escalation Factor	Kcal/kwh Kcal/kwh Rs/T Kcal/kg %	4126 4126 3195.86 3174 5.00%
7	Operation & Maintenance	O&M Expenses (2016-17) O & M Expenses Escalation O&M Expenses (2014-15)		Rs Lacs % Rs Lacs	47.26 5.72% 40.00



Assumption for Biomass Power Project Parameters			Select State	Maharashtra		
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilis	%	11%	
			Auxillary Consumption after stabilis	%	10%	
			PLF (Stablization for 6 months)	%	60%	
			PLF (during first year after Stablizat	%	70%	
			PLF (second year onwards)	%	80%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	391.323	
			Total Equity Amount	Rs Lacs	167.710	
			Debt Component	Loan Amount	Rs Lacs	391.323
				Moratorium Period	years	0
				Repayment Period (incl'd Moratorium)	years	12
				Interest Rate	%	12.76%
			Equity Component	Equity amount	Rs Lacs	167.710
				Return on Equity for first 10 years	% p.a	20.00%
				Return on Equity after 10 years	%	24.00%
Weighted average of ROE	%	22.00%				
Discount Rate (equiv. to WACC)	%	10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate (power plant)	%	5.830%
				Depreciation Rate 13th year onward	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126	
			During Stablization Period	Kcal/kwh	4126	
		Biomass	Base Price	Rs/T	3268.62	
			GCV - Biomass	Kcal/kg	3174	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O&M Expenses (2016-17)	O & M Expenses Escalation	Rs Lacs	47.26	
			O&M Expenses (2014-15)	%	5.72%	
				Rs Lacs	40.00	



Assumption for Biomass Power Project Parameters			Select State	Punjab	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		Debt Component	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( % of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3342.60
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2014-15)		Rs Lacs	40.00





Assumption for Biomass Power Project Parameters			Select State	Rajasthan	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		<u>Debt Component</u>	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate (power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M expenses)		15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		<u>Biomass</u>	Base Price	Rs/T	2789.54
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance				
		O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2014-15)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	TN	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		Debt Component	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( % of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2761.64
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2014-15)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	UP	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		<u>Debt Component</u>	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate (power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M expenses)		15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		<u>Biomass</u>	Base Price	Rs/T	2856.25
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance				
		O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2014-15)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	Others			
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions		
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1		
			Auxillary Consumption during stabilisation	%	11%		
			Auxillary Consumption after stabilisation	%	10%		
			PLF (Stabilization for 6 months)	%	60%		
			PLF (during first year after Stabilization)	%	70%		
			PLF (second year onwards)	%	80%		
			Useful Life	Years	20		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03		
3	Financial Assumptions	Debt: Equity	Debt	%	70%		
			Equity	%	30%		
			Total Debt Amount	Rs Lacs	391.323		
			Total Equity Amount	Rs Lacs	167.710		
		Debt Component	Loan Amount	Rs Lacs	391.323		
			Moratorium Period	years	0		
			Repayment Period (incl. Moratorium)	years	12		
			Interest Rate	%	12.76%		
		Equity Component	Equity amount	Rs Lacs	167.710		
			Return on Equity for first 10 years	% p.a	20.00%		
Return on Equity after 10 years	%		24.00%				
Weighted average of ROE	%		22.00%				
			Discount Rate (equiv. to WACC)	%	10.70%		
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%		
			Depreciation	Depreciation Rate (power plant)	%	5.830%	
						Depreciation Rate 13th year onwards	%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1		
			Maintenance Spare	(% of O&M expenses)	15%		
		For Variable Charges	Receivables for Debtors	Months	2		
			Biomass Stock	Months	4		
					Interest On Working Capital	%	13.26%
		6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
During Stabilization Period	Kcal/kwh				4126		
Biomass	Base Price			Rs/T	3003.01		
	GCV - Biomass			Kcal/kg	3174		
	Biomass Price Escalation Factor				5.00%		
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26		
			O & M Expenses Escalation	%	5.72%		
			O&M Expenses (2014-15)	Rs Lacs	40.00		





**Biomass Power Projects (Other than Rice Straw & Juliflore (plantation) based projects) with air cooled  
condenser and using Travelling Grate Boiler**

		Select State		AP	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
			2	Project Cost	Capital Cost/MW
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
Discount Rate (equiv. to WACC)	%	10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
		Depreciation Rate(power plant)	%	5.830%	
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare (% of O&M expenses)			15%
		Receivables for Debtors		Months	2
		For Variable Charges			
Biomass Stock		Months	4		
Interest On Working Capital		%	13.26%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2807.74
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



		Select State		Harayana	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		<u>Debt Component</u>	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate (power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1
		Maintenance Spare ( % of O&M expenses)			15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		<u>Biomass</u>	Base Price	Rs/T	3195.86
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance				
		O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Select State

Maharashtra

## Assumption for Biomass Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate (power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( % of O&M expenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3268.62
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



		Select State		Punjab	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	<b>Power Generation</b>	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	<b>Project Cost</b>	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	<b>Financial Assumptions</b>	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		<u>Debt Component</u>	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	<b>Financial Assumptions</b>	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	<b>Working Capital</b>	<u>For Fixed Charges</u>			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	<b>Fuel Related Assumptions</b>	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		<u>Biomass</u>	Base Price	Rs/T	3342.60
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	<b>Operation &amp; Maintenance</b>				
		O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00





		Select State		Rajasthan	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2789.54
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	TN	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate (power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M expenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2761.64
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	UP		
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	13%	
			Auxillary Consumption after stabilisation	%	12%	
			PLF (Stabilization for 6 months)	%	60%	
			PLF (during first year after Stabilization)	%	70%	
			PLF (second year onwards)	%	80%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	420.310	
			Total Equity Amount	Rs Lacs	180.133	
		Debt Component	Loan Amount	Rs Lacs	420.310	
			Moratorium Period	years	0	
			Repayment Period (incl. Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	180.133	
			Return on Equity for first 10 years	% p.a	20.00%	
Return on Equity after 10 years	%		24.00%			
Weighted average of ROE	%		22.00%			
Discount Rate (equiv. to WACC)	%	10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate (power plant)	%	5.830%
				Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare ( (% of O&M expenses)		15%	
		Receivables for Debtors	Months	2		
		For Variable Charges	Biomass Stock	Months	4	
			Interest On Working Capital	%	13.26%	
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126	
			During Stabilization Period	Kcal/kwh	4126	
		Biomass	Base Price	Rs/T	2856.25	
			GCV - Biomass	Kcal/kg	3174	
Biomass Price Escalation Factor		5.00%				
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26		
		O & M Expenses Escalation	%	5.72%		
		O&M Expenses (2013-14)	Rs Lacs	40.00		



Assumption for Biomass Power Project Parameters			Select State	Others	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
	Return on Equity after 10 years	%	24.00%		
	Weighted average of ROE	%	22.00%		
	Discount Rate (equiv. to WACC)	%	10.70%		
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
		Depreciation Rate(power plant)	%	5.830%	
	Depreciation Rate 13th year onwards	%	2.505%		
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		Receivables for Debtors	Months	2	
		For Variable Charges			
		Biomass Stock	Months	4	
	Interest On Working Capital	%	13.26%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3003.01
			GCV - Biomass	Kcal/kg	3174
	Biomass Price Escalation Factor		5.00%		
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	





**Biomass Power Projects (Rice Straw & Juliflore (plantation) based projects) with water cooled condenser and using Travelling Grate Boiler**

Assumption for Biomass Power Project Parameters			Select State	AP		
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	11%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF (Stabilization for 6 months)	%	60%	
			PLF (during first year after Stabilization)	%	70%	
			PLF (second year onwards)	%	80%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	427.557	
			Total Equity Amount	Rs Lacs	183.239	
		Debt Component	Loan Amount	Rs Lacs	427.557	
			Moratorium Period	years	0	
			Repayment Period (incl. Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	183.239	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years	%	24.00%	
			Weighted average of ROE	%	22.00%	
			Discount Rate (equiv. to WACC)	%	10.70%	
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate (power plant)	%	5.830%
				Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare ( % of O&M exepenses)		15%	
		Receivables for Debtors	Months	2		
		For Variable Charges	Biomass Stock	Months	4	
			Interest On Working Capital	%	13.26%	
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126	
			During Stabilization Period	Kcal/kwh	4126	
		Biomass	Base Price	Rs/T	2807.74	
			GCV - Biomass	Kcal/kg	3174	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26	
			O & M Expenses Escalation	%	5.72%	
			O&M Expenses (2013-14)	Rs Lacs	40.00	



Assumption for Biomass Power Project Parameters			Select State	Harayana	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilis	%	11%
			Auxillary Consumption after stabilis	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablizat	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(inclcd Moratorium	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onward	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stablization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3195.86
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	Maharashtra	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
		Equity Component	Interest Rate	%	12.76%
			Equity amount	Rs Lacs	183.239
Return on Equity for first 10 years	% p.a		20.00%		
Return on Equity after 10 years	%		24.00%		
	Weighted average of ROE	%	22.00%		
	Discount Rate (equiv. to WACC)	%	10.70%		
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
		Depreciation Rate (power plant)	%	5.830%	
	Depreciation Rate 13th year onwards	%	2.505%		
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M expenses)	15%
		Receivables for Debtors	Months	2	
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3268.62
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



## Annexure 3.3. D

Assumption for Biomass Power Project Parameters			Select State	Punjab	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		<u>Debt Component</u>	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate (power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M expenses)		15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		<u>Biomass</u>	Base Price	Rs/T	3342.60
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00





Assumption for Biomass Power Project Parameters			Select State	Rajasthan		
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	11%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF (Stabilisation for 6 months)	%	60%	
			PLF (during first year after Stabilisation)	%	70%	
			PLF (second year onwards)	%	80%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	427.557	
			Total Equity Amount	Rs Lacs	183.239	
		Debt Component	Loan Amount	Rs Lacs	427.557	
			Moratorium Period	years	0	
			Repayment Period (incl. Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	183.239	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years	%	24.00%	
Weighted average of ROE	%	22.00%				
Discount Rate (equiv. to WACC)	%	10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate (power plant)	%	5.830%
				Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M expenses)	15%	
		Receivables for Debtors	Months	2		
		For Variable Charges	Biomass Stock	Months	4	
			Interest On Working Capital	%	13.26%	
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126	
			During Stabilisation Period	Kcal/kwh	4126	
		Biomass	Base Price	Rs/T	2789.54	
			GCV - Biomass	Kcal/kg	3174	
Biomass Price Escalation Factor	%	5.00%				
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26		
		O & M Expenses Escalation	%	5.72%		
		O&M Expenses (2013-14)	Rs Lacs	40.00		



Assumption for Biomass Power Project Parameters			Select State	TN	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		<u>Debt Component</u>	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate (power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M expenses)		15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		<u>Biomass</u>	Base Price	Rs/T	2761.64
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	UP	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilis	%	11%
			Auxillary Consumption after stabilis	%	10%
			PLF (Stablization for 6 months)	%	60%
			PLF (during first year after Stablizat	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period (incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
Return on Equity after 10 years	%		24.00%		
Weighted average of ROE	%		22.00%		
Discount Rate (equiv. to WACC)	%	10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation	Depreciation Rate (power plant)	%
		Depreciation Rate 13th year onward		%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( % of O&M exepenses)		15%
		Receivables for Debtors	Months	2	
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stablization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2856.25
			GCV - Biomass	Kcal/kg	3174
Biomass Price Escalation Factor		5.00%			
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



Assumption for Biomass Power Project Parameters			Select State	Others	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF (Stabilisation for 6 months)	%	60%
			PLF (during first year after Stabilisation)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
			Depreciation Rate (power plant)	%	5.830%
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M expenses)	15%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilisation Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3003.01
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00





**Biomass Power Projects (Rice Straw & Juliflore (plantation) based projects) with air cooled condenser and using Travelling Grate Boiler**

			Select State	AP	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
		Depreciation Rate (power plant)	%	5.830%	
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( (% of O&M expenses)		15%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2807.74
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



Assumption for Biomass Power Project Parameters			Select State	Harayana	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3195.86
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	Maharashtra	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilis	%	13%
			Auxillary Consumption after stabilis	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablizat	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amout	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(inclnd Moratorium	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onward	%	2.505%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stablization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3268.62
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	Punjab	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilis	%	13%
			Auxillary Consumption after stabilis	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablizat	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onward	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stablization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3342.60
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00





Assumption for Biomass Power Project Parameters			Select State	Rajasthan	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stablization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2789.54
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	TN	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation	Depreciation Rate (power plant)	%
					Depreciation Rate 13th year onwards
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M expenses)	15%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
		6	Fuel Related Assumptions	Heat Rate	After Stabilisation period
During Stabilization Period	Kcal/kwh				4126
Biomass	Base Price			Rs/T	2761.64
	GCV - Biomass			Kcal/kg	3174
	Biomass Price Escalation Factor				5.00%
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	UP	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	13%
			Auxillary Consumption after stabilisation	%	12%
			PLF (Stabilization for 6 months)	%	60%
			PLF (during first year after Stabilization)	%	70%
			PLF (second year onwards)	%	80%
			Useful Life	Years	20
			2	Project Cost	Capital Cost/MW
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
			Depreciation Rate (power plant)	%	5.830%
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( % of O&M expenses)		15%
		Receivables for Debtors	Months	2	
		For Variable Charges			
		Biomass Stock	Months	4	
	Interest On Working Capital	%	13.26%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stabilization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	2856.25
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



Assumption for Biomass Power Project Parameters			Select State	Others	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilis	%	13%
			Auxillary Consumption after stabilis	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablizat	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onward	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4126
			During Stablization Period	Kcal/kwh	4126
		Biomass	Base Price	Rs/T	3003.01
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00





## Biomass

		Select State	AP			
Assumption for Biomass Power Project Parameters						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during start up	%	11%	
			Auxillary Consumption after start up	%	10%	
			PLF(Stablization for 6 months)	%	60%	
			PLF(during first year after Stablization)	%	70%	
			PLF(second year onwards)	%	80%	
			Useful Life	Years	20	
			2	Project Cost	Capital Cost/MW	Power Plant Cost
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	391.323	
			Total Equity Amount	Rs Lacs	167.710	
			Debt Component	Loan Amount	Rs Lacs	391.323
				Moratorium Period	years	0
				Repayment Period(incl. Moratorium)	years	12
				Interest Rate	%	12.76%
			Equity Component	Equity amount	Rs Lacs	167.710
				Return on Equity for first 10 years	% p.a	20.00%
				Return on Equity after 10 years	%	24.00%
Weighted average of ROE	%	22.00%				
Discount Rate (equiv. to WACC)	%	10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.830%
				Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
			6	Fuel Related Assumptions	Heat Rate	After Stabilisation period
During Stablization Period	Kcal/kwh	4063				
Biomass	Base Price	Rs/T			2807.74	
	GCV - Biomass	Kcal/kg			3174	
	Biomass Price Escalation Factor	%			5.00%	
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26	
			O & M Expenses Escalation	%	5.72%	
			O&M Expenses (2013-14)	Rs Lacs	40.00	



			Select State	Harayana	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		<u>Debt Component</u>	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		<u>For Variable Charges</u>	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		<u>Biomass</u>	Base Price	Rs/T	3195.86
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	Maharashtra	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity Auxillary Consumption during start up Auxillary Consumption after start up PLF(Stablization for 6 months) PLF(during first year after Stablization) PLF(second year onwards) Useful Life	MW % % % % % Years	1 11% 10% 60% 70% 80% 20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt Equity Total Debt Amount Total Equity Amount	% % Rs Lacs Rs Lacs	70% 30% 391.323 167.710
		Debt Component	Loan Amount Moratorium Period Repayment Period(incl. Moratorium) Interest Rate	Rs Lacs years years %	391.323 0 12 12.76%
		Equity Component	Equity amount Return on Equity for first 10 years Return on Equity after 10 years Weighted average of ROE Discount Rate (equiv. to WACC)	Rs Lacs % p.a % % %	167.710 20.00% 24.00% 22.00% 10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant) Depreciation Rate 13th year onwards	% %	5.830% 2.505%
5	Working Capital	For Fixed Charges O&M Charges Maintenance Spare Receivables for Debtors For Variable Charges Biomass Stock Interest On Working Capital	(% of O&M exepenses)	Months Months Months %	1 15% 2 4 13.26%
6	Fuel Related Assumptions	Heat Rate Biomass	After Stabilisation period During Stablization Period Base Price GCV - Biomass Biomass Price Escalation Factor	Kcal/kwh Kcal/kwh Rs/T Kcal/kg %	4063 4063 3268.62 3174 5.00%
7	Operation & Maintenance	O&M Expenses (2016-17) O & M Expenses Escalation O&M Expenses (2013-14)		Rs Lacs % Rs Lacs	47.26 5.72% 40.00



Assumption for Biomass Power Project Parameters			Select State	Punjab	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		Debt Component	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 year	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3342.60
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00





Assumption for Biomass Power Project Parameters			Select State	Rajasthan	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		Debt Component	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2789.54
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	TN	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stablization	%	11%
			Auxillary Consumption after stablization	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		<u>Debt Component</u>	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period(inclld Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		<u>For Variable Charges</u>	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		<u>Biomass</u>	Base Price	Rs/T	2761.64
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters			Select State	UP	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity Auxillary Consumption during start up Auxillary Consumption after start up PLF(Stablization for 6 months) PLF(during first year after Stablization) PLF(second year onwards) Useful Life	MW % % % % % Years	1 11% 10% 60% 70% 80% 20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt Equity Total Debt Amount Total Equity Amount	% % Rs Lacs Rs Lacs	70% 30% 391.323 167.710
		Debt Component	Loan Amount Moratorium Period Repayment Period(incl. Moratorium) Interest Rate	Rs Lacs years years %	391.323 0 12 12.76%
		Equity Component	Equity amount Return on Equity for first 10 years Return on Equity after 10 years Weighted average of ROE Discount Rate (equiv. to WACC)	Rs Lacs % p.a % % %	167.710 20.00% 24.00% 22.00% 10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant) Depreciation Rate 13th year onwards	% %	5.830% 2.505%
5	Working Capital	For Fixed Charges	O&M Charges Maintenance Spare Receivables for Debtors	Months % of O&M exepenses Months	1 15% 2
		For Variable Charges	Biomass Stock Interest On Working Capital	Months %	4 13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period During Stablization Period	Kcal/kwh Kcal/kwh	4063 4063
		Biomass	Base Price GCV - Biomass Biomass Price Escalation Factor	Rs/T Kcal/kg %	2856.25 3174 5.00%
7	Operation & Maintenance	O&M Expenses (2016-17) O & M Expenses Escalation O&M Expenses (2013-14)		Rs Lacs % Rs Lacs	47.26 5.72% 40.00



Assumption for Biomass Power Project Parameters			Select State	Others	
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	559.03
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	391.323
			Total Equity Amount	Rs Lacs	167.710
		Debt Component	Loan Amount	Rs Lacs	391.323
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	167.710
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3003.01
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00





Assumption for Biomass Power Project Parameters				Select State	AP
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2807.74
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters				Select State	Harayana
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
		Equity Component	Interest Rate	%	12.76%
			Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
	Return on Equity after 10 years	%	24.00%		
	Weighted average of ROE	%	22.00%		
	Discount Rate (equiv. to WACC)	%	10.70%		
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
			Depreciation Rate(power plant)	%	5.830%
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3195.86
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



Select State

## Assumption for Biomass Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
Return on Equity after 10 years	%		24.00%		
Weighted average of ROE	%		22.00%		
Discount Rate (equiv. to WACC)	%	10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation	Depreciation Rate(power plant)	%
		Depreciation Rate 13th year onwards		%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (part of O&M exepenses)	%	15%
		Receivables for Debtors	Months	2	
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3268.62
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



				Select State	Punjab
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity Auxillary Consumption during start up Auxillary Consumption after start up PLF(Stablization for 6 months) PLF(during first year after Stablization) PLF(second year onwards) Useful Life	MW % % % % % Years	1 13% 12% 60% 70% 80% 20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	<u>Debt: Equity</u>	Debt Equity Total Debt Amount Total Equity Amount	% % Rs Lacs Rs Lacs	70% 30% 420.310 180.133
		<u>Debt Component</u>	Loan Amount Moratorium Period Repayment Period(incl. Moratorium) Interest Rate	Rs Lacs years years %	420.310 0 12 12.76%
		<u>Equity Component</u>	Equity amount Return on Equity for first 10 years Return on Equity after 10 years Weighted average of ROE Discount Rate (equiv. to WACC)	Rs Lacs % p.a. % % %	180.133 20.00% 24.00% 22.00% 10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant) Depreciation Rate 13th year onwards	% %	5.830% 2.505%
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges Maintenance Spare (% of O&M expenses) Receivables for Debtors	Months Months	1 15% 2
		<u>For Variable Charges</u>	Biomass Stock Interest On Working Capital	Months %	4 13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period During Stablization Period	Kcal/kwh Kcal/kwh	4063 4063
		<u>Biomass</u>	Base Price GCV - Biomass Biomass Price Escalation Factor	Rs/T Kcal/kg %	3342.60 3174 5.00%
7	Operation & Maintenance	O&M Expenses (2016-17) O & M Expenses Escalation O&M Expenses (2013-14)		Rs Lacs % Rs Lacs	47.26 5.72% 40.00





Assumption for Biomass Power Project Parameters				Select State	Rajasthan
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges		Months	1
		O&M Charges			
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2789.54
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters				Select State	TN
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
		Equity Component	Interest Rate	%	12.76%
		Equity amount	Rs Lacs	180.133	
		Return on Equity for first 10 years	% p.a	20.00%	
		Return on Equity after 10 years	%	24.00%	
		Weighted average of ROE	%	22.00%	
		Discount Rate (equiv. to WACC)	%	10.70%	
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation			
		Depreciation Rate(power plant)	%	5.830%	
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		Receivables for Debtors	Months	2	
		For Variable Charges			
		Biomass Stock	Months	4	
		Interest On Working Capital	%	13.26%	
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2761.64
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



Assumption for Biomass Power Project Parameters				Select State	UP
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M expenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2856.25
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters				Select State	Others
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	600.44
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	420.310
			Total Equity Amount	Rs Lacs	180.133
		Debt Component	Loan Amount	Rs Lacs	420.310
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	180.133
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare (% of O&M exepenses)			15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3003.01
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00





Assumption for Biomass Power Project Parameters				Select State	AP
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
		Equity Component	Interest Rate	%	12.76%
			Equity amount	Rs Lacs	183.239
Return on Equity for first 10 years	% p.a		20.00%		
Return on Equity after 10 years	%		24.00%		
	Weighted average of ROE	%	22.00%		
	Discount Rate (equiv. to WACC)	%	10.70%		
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
			Depreciation Rate(power plant)	%	5.830%
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
			For Variable Charges		
			Biomass Stock	Months	4
	Interest On Working Capital	%	13.26%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2807.74
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	O & M Expenses Escalation	Rs Lacs	47.26
				%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00



		Select State	Harayana		
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(inclld Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 year	% p.a	20.00%
Return on Equity after 10 years	%		24.00%		
Weighted average of ROE	%		22.00%		
Discount Rate (equiv. to WACC)	%	10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
		Depreciation Rate(power plant)	%	5.830%	
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges		Months	1
		O&M Charges	(% of O&M exepenses)		15%
		Maintenance Spare		Months	2
		Receivables for Debtors		Months	2
		For Variable Charges			
Biomass Stock		Months	4		
Interest On Working Capital		%	13.26%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3195.86
			GCV - Biomass	Kcal/kg	3174
		Biomass Price Escalation Factor	%	5.00%	
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



		Select State		Maharashtra	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	<b>Power Generation</b>	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	<b>Project Cost</b>	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	<b>Financial Assumptions</b>	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		<u>Debt Component</u>	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 year	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	<b>Financial Assumptions</b>	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	<b>Working Capital</b>	<u>For Fixed Charges</u>	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		<u>For Variable Charges</u>	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	<b>Fuel Related Assumptions</b>	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		<u>Biomass</u>	Base Price	Rs/T	3268.62
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	<b>Operation &amp; Maintenance</b>		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00



Assumption for Biomass Power Project Parameters				Select State	Punjab
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	11%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stabilisation for 6 months)	%	60%
			PLF(during first year after Stabilisation)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M expenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stabilisation Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3342.60
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00





		Select State		Rajasthan	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 year	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2789.54
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs Lacs	47.26
			O & M Expenses Escalation	%	5.72%
			O&M Expenses (2013-14)	Rs Lacs	40.00



Assumption for Biomass Power Project Parameters				Select State	TN
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2761.64
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



		Select State	UP		
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare(% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2856.25
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters				Select State	Others
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	11%
			Auxillary Consumption after start up	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/M	610.80
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	427.557
			Total Equity Amount	Rs Lacs	183.239
		Debt Component	Loan Amount	Rs Lacs	427.557
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	183.239
			Return on Equity for first 10 year	% p.a	20.00%
Return on Equity after 10 years	%		24.00%		
	Weighted average of ROE	%	22.00%		
	Discount Rate (equiv. to WACC)	%	10.70%		
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
		Depreciation Rate(power plant)	%	5.830%	
	Depreciation Rate 13th year onwards	%	2.505%		
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
		Receivables for Debtors	Months	2	
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3003.01
			GCV - Biomass	Kcal/kg	3174
	Biomass Price Escalation Factor		5.00%		
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	





Assumption for Biomass Power Project Parameters				Select State	AP
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2807.74
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



		Select State	Harayana		
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare (% of O&M exepenses)			15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3195.86
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



		Select State		Maharashtra	
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M expenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stabilization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3268.62
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



Assumption for Biomass Power Project Parameters				Select State	Punjab
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(inclد Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare ( % of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3342.60
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00



**Determination of Tariff Component: Biomass Power Projects**

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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
Auxiliary Consumption	MU		0.74	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Net Generation	MU		4.95	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		243.64	314.85	330.60	347.13	364.48	382.71	401.84	421.93	443.03	465.18	488.44	512.86	538.51	565.43	593.70	623.39	654.56	687.28	721.65	757.73

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		47.26	49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99
Depreciation	Rs Lakh		38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02
Interest on term loan	Rs Lakh		55.83	50.98	46.12	41.27	36.41	31.56	26.70	21.85	16.99	12.14	7.28	2.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		22.09	26.96	28.07	29.24	30.48	31.79	33.17	34.63	36.17	37.79	39.68	41.48	42.94	45.05	47.27	49.61	52.06	54.63	57.34	60.19
Return on Equity	Rs Lakh		39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>202.34</b>	<b>205.06</b>	<b>204.17</b>	<b>203.52</b>	<b>203.10</b>	<b>202.93</b>	<b>203.02</b>	<b>203.40</b>	<b>204.07</b>	<b>205.06</b>	<b>214.38</b>	<b>216.04</b>	<b>198.37</b>	<b>205.75</b>	<b>213.55</b>	<b>221.77</b>	<b>230.45</b>	<b>239.61</b>	<b>249.27</b>	<b>259.48</b>

**Levelling tariff corresponding to Useful life**

Per Unit Cost of Generation	Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	6.86	4.92	5.11	5.36	5.63	5.91	6.21	6.52	6.84	7.18	7.54	7.92	8.32	8.73	9.17	9.63	10.11	10.61	11.14	11.70	12.29
O&M expn	Rs/kWh	1.16	0.95	0.81	0.86	0.91	0.96	1.01	1.07	1.13	1.20	1.26	1.34	1.41	1.49	1.58	1.67	1.77	1.87	1.97	2.09	2.21
Depreciation	Rs/kWh	0.57	0.77	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Int. on term loan	Rs/kWh	0.48	1.13	0.83	0.75	0.67	0.59	0.51	0.43	0.35	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.57	0.45	0.44	0.46	0.47	0.49	0.52	0.54	0.56	0.59	0.61	0.64	0.67	0.70	0.73	0.77	0.80	0.84	0.89	0.93	0.98
RoE	Rs/kWh	0.69	0.79	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
<b>Total COG</b>	<b>Rs/kWh</b>	<b>10.32</b>	<b>9.00</b>	<b>8.43</b>	<b>8.67</b>	<b>8.93</b>	<b>9.20</b>	<b>9.50</b>	<b>9.81</b>	<b>10.14</b>	<b>10.49</b>	<b>10.87</b>	<b>11.40</b>	<b>11.82</b>	<b>11.95</b>	<b>12.50</b>	<b>13.09</b>	<b>13.70</b>	<b>14.35</b>	<b>15.03</b>	<b>15.74</b>	<b>16.49</b>

Levelling Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145

Variable Cost (FY2016-17)	4.92	Rs/kWh
Levelling Tariff (Fixed)	3.46	Rs/kWh
<b>Applicable Tariff (FY2016-17)</b>	<b>8.38</b>	<b>Rs/kWh</b>

**Determination of Accelerated Depreciation for Biomass Power Project**

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Additional depreciation	20.00%
Income Tax (Normal Rates)	33.99%
Capital Cost	652.205

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	17.22	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	18.78	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Depn.	Rs Lakh	326.10	293.49	26.09	5.22	1.04	0.21	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	308.88	259.06	-8.35	-29.22	-33.39	-34.23	-34.39	-34.43	-34.43	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-18.78	0.00	0.00
Tax Benefit	Rs Lakh	104.99	88.05	-2.84	-9.93	-11.35	-11.63	-11.69	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-6.38	0.00	0.00
Net Energy generation	MU	2.48	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	4.24	1.43	-0.05	-0.16	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	

<b>Levelling benefit</b>	<b>0.21</b>	<b>(Rs/kWh)</b>
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		Select State	Rajasthan		
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
Return on Equity after 10 years	%		24.00%		
Weighted average of ROE	%		22.00%		
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation	Depreciation Rate(power plant)	%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M exepenses)		15%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2789.54
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	

**Determination of Tariff Component: Biomass Power Projects**

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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
Auxiliary Consumption	MU		0.74	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Net Generation	MU		4.95	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		203.32	262.76	275.90	289.69	304.18	319.38	335.35	352.12	369.73	388.21	407.62	428.01	449.41	471.88	495.47	520.24	546.26	573.57	602.25	632.36

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		47.26	49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99
Depreciation	Rs Lakh		38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02
Interest on term loan	Rs Lakh		55.83	50.98	46.12	41.27	36.41	31.56	26.70	21.85	16.99	12.14	7.28	2.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		19.36	23.42	24.36	25.35	26.39	27.50	28.67	29.90	31.20	32.57	34.20	35.72	36.90	38.71	40.61	42.61	44.71	46.92	49.25	51.69
Return on Equity	Rs Lakh		39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	46.96	46.96	46.96	46.96	46.96	46.96	46.96	46.96	46.96
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>199.61</b>	<b>201.53</b>	<b>200.47</b>	<b>199.62</b>	<b>199.01</b>	<b>198.63</b>	<b>198.52</b>	<b>198.67</b>	<b>199.10</b>	<b>199.84</b>	<b>208.90</b>	<b>210.28</b>	<b>192.33</b>	<b>199.41</b>	<b>206.88</b>	<b>214.77</b>	<b>223.10</b>	<b>231.89</b>	<b>241.18</b>	<b>250.98</b>

**Levelling tariff corresponding to Useful life**

Per Unit Cost of Generation	Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	5.73	4.10	4.26	4.47	4.70	4.93	5.18	5.44	5.71	6.00	6.29	6.61	6.94	7.29	7.65	8.03	8.44	8.86	9.30	9.77	10.25
O&M expn	Rs/kWh	1.16	0.95	0.81	0.86	0.91	0.96	1.01	1.07	1.13	1.20	1.26	1.34	1.41	1.49	1.58	1.67	1.77	1.87	1.97	2.09	2.21
Depreciation	Rs/kWh	0.57	0.77	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.48	1.13	0.83	0.75	0.67	0.59	0.51	0.43	0.35	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.49	0.39	0.38	0.39	0.41	0.43	0.45	0.46	0.48	0.51	0.53	0.55	0.58	0.60	0.63	0.66	0.69	0.73	0.76	0.80	0.84
RoE	Rs/kWh	0.69	0.79	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
<b>Total COG</b>	<b>Rs/kWh</b>	<b>9.11</b>	<b>8.13</b>	<b>7.53</b>	<b>7.72</b>	<b>7.93</b>	<b>8.16</b>	<b>8.40</b>	<b>8.66</b>	<b>8.93</b>	<b>9.22</b>	<b>9.54</b>	<b>10.00</b>	<b>10.35</b>	<b>10.41</b>	<b>10.89</b>	<b>11.39</b>	<b>11.92</b>	<b>12.48</b>	<b>13.06</b>	<b>13.68</b>	<b>14.32</b>

Levelling Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145

Variable Cost (FY2016-17)	4.10 Rs/kwh
Levelling Tariff (Fixed)	3.39 Rs/kwh
<b>Applicable Tariff (FY2016-17)</b>	<b>7.49 Rs/kwh</b>

**Determination of Accelerated Depreciation for Biomass Power Project**

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Additional depreciation	20.00%
Income Tax (Normal Rates)	33.99%
Capital Cost	652.205

Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	17.22	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	18.78	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Deprn.	Rs Lakh	326.10	293.49	26.09	5.22	1.04	0.21	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	308.88	259.06	-8.35	-29.22	-33.39	-34.23	-34.39	-34.43	-34.43	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-18.78	0.00	0.00
Tax Benefit	Rs Lakh	104.99	88.05	-2.84	-9.93	-11.35	-11.63	-11.69	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-6.38	0.00	0.00
Net Energy generation	MU	2.48	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	4.24	1.43	-0.05	-0.16	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15

<b>Levelling benefit</b>	<b>0.21</b>	<b>(Rs/kWh)</b>
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Assumption for Biomass Power Project Parameters				Select State	TN
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M expenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2761.64
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor	%	5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00

Determination of Tariff Component: Biomass Power Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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
Auxiliary Consumption	MU		0.74	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Net Generation	MU		4.95	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost																						
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		201.29	260.13	273.14	286.79	301.13	316.19	332.00	348.60	366.03	384.33	403.55	423.72	444.91	467.16	490.51	515.04	540.79	567.83	596.22	626.03
Fixed Cost																						
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		47.26	49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99
Depreciation	Rs Lakh		38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02
Interest on term loan	Rs Lakh		55.83	50.98	46.12	41.27	36.41	31.56	26.70	21.85	16.99	12.14	7.28	2.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		19.22	23.25	24.17	25.15	26.19	27.28	28.44	29.66	30.95	32.31	33.92	35.43	36.60	38.39	40.28	42.26	44.34	46.53	48.84	51.26
Return on Equity	Rs Lakh		39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>199.47</b>	<b>201.35</b>	<b>200.28</b>	<b>199.43</b>	<b>198.80</b>	<b>198.42</b>	<b>198.29</b>	<b>198.43</b>	<b>198.85</b>	<b>199.58</b>	<b>208.62</b>	<b>209.99</b>	<b>192.03</b>	<b>199.09</b>	<b>206.55</b>	<b>214.42</b>	<b>222.73</b>	<b>231.51</b>	<b>240.77</b>	<b>250.55</b>
Levelling tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	5.67	4.06	4.22	4.43	4.65	4.88	5.13	5.38	5.65	5.94	6.23	6.54	6.87	7.21	7.58	7.95	8.35	8.77	9.21	9.67	10.15
O&M expn	Rs/kWh	1.16	0.95	0.81	0.86	0.91	0.96	1.01	1.07	1.13	1.20	1.26	1.34	1.41	1.49	1.58	1.67	1.77	1.87	1.97	2.09	2.21
Depreciation	Rs/kWh	0.57	0.77	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.48	1.13	0.83	0.75	0.67	0.59	0.51	0.43	0.35	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.49	0.39	0.38	0.39	0.41	0.42	0.44	0.46	0.48	0.50	0.52	0.55	0.57	0.59	0.62	0.65	0.69	0.72	0.75	0.79	0.83
RoE	Rs/kWh	0.69	0.79	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
<b>Total COG</b>	<b>Rs/kWh</b>	<b>9.05</b>	<b>8.09</b>	<b>7.48</b>	<b>7.68</b>	<b>7.88</b>	<b>8.11</b>	<b>8.34</b>	<b>8.60</b>	<b>8.87</b>	<b>9.16</b>	<b>9.47</b>	<b>9.93</b>	<b>10.28</b>	<b>10.33</b>	<b>10.80</b>	<b>11.30</b>	<b>11.83</b>	<b>12.38</b>	<b>12.96</b>	<b>13.57</b>	<b>14.21</b>
Levelling Tariff																						
Levelling Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)	4.06 Rs/kWh																					
Levelling Tariff (Fixed)	3.38 Rs/kWh																					
<b>Applicable Tariff (FY2016-17)</b>	<b>7.45 Rs/kWh</b>																					

Determination of Accelerated Depreciation for Biomass Power Project																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional depreciation	20.00%																					
Income Tax (Normal Rates)	33.99%																					
Capital Cost	652.205																					
Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	17.22	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	18.78	0.00	0.00
Accelerated Depreciation																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	326.10	293.49	26.09	5.22	1.04	0.21	0.04	0.01	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
Net Depreciation Benefit	Rs Lakh	308.88	259.06	-8.35	-29.22	-33.39	-34.23	-34.39	-34.43	-34.43	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-18.78	0.00	0.00
Tax Benefit	Rs Lakh	104.99	88.05	-2.84	-9.93	-11.35	-11.63	-11.69	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-6.38	0.00	0.00
Net Energy generation	MU	2.48	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	4.24	1.43	-0.05	-0.16	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levelling benefit</b>	<b>0.21 (Rs/kWh)</b>																					

		Select State	UP		
Assumption for Biomass Power Project Parameters					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(inclld Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	195.661
			Return on Equity for first 10 year	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.830%
			Depreciation Rate 13th year onwards	%	2.505%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare(% of O&M exepenses)		15%
			Receivables for Debtors	Months	2
		For Variable Charges	Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	2856.25
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	47.26
		O & M Expenses Escalation		%	5.72%
		O&M Expenses (2013-14)		Rs Lacs	40.00

**Determination of Tariff Component: Biomass Power Projects**

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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
Auxiliary Consumption	MU		0.74	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Net Generation	MU		4.95	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		208.19	269.04	282.49	296.62	311.45	327.02	343.37	360.54	378.57	397.50	417.37	438.24	460.15	483.16	507.32	532.68	559.32	587.28	616.65	647.48

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		47.26	49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99
Depreciation	Rs Lakh		38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02
Interest on term loan	Rs Lakh		55.83	50.98	46.12	41.27	36.41	31.56	26.70	21.85	16.99	12.14	7.28	2.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		19.69	23.85	24.81	25.82	26.89	28.02	29.21	30.47	31.80	33.20	34.86	36.42	37.63	39.48	41.42	43.46	45.60	47.85	50.22	52.71
Return on Equity	Rs Lakh		39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>199.94</b>	<b>201.95</b>	<b>200.91</b>	<b>200.09</b>	<b>199.50</b>	<b>199.15</b>	<b>199.06</b>	<b>199.24</b>	<b>199.70</b>	<b>200.47</b>	<b>209.56</b>	<b>210.98</b>	<b>193.06</b>	<b>200.18</b>	<b>207.69</b>	<b>215.62</b>	<b>223.99</b>	<b>232.82</b>	<b>242.15</b>	<b>252.00</b>

**Levillised tariff corresponding to Useful life**

Per Unit Cost of Generation	Unit	Levillised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	<b>5.86</b>	4.20	4.36	4.58	4.81	5.05	5.30	5.57	5.85	6.14	6.45	6.77	7.11	7.46	7.83	8.23	8.64	9.07	9.52	10.00	10.50
O&M expn	Rs/kWh	<b>1.16</b>	0.95	0.81	0.86	0.91	0.96	1.01	1.07	1.13	1.20	1.26	1.34	1.41	1.49	1.58	1.67	1.77	1.87	1.97	2.09	2.21
Depreciation	Rs/kWh	<b>0.57</b>	0.77	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Int. on term loan	Rs/kWh	<b>0.48</b>	1.13	0.83	0.75	0.67	0.59	0.51	0.43	0.35	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	<b>0.50</b>	0.40	0.39	0.40	0.42	0.44	0.45	0.47	0.49	0.52	0.54	0.57	0.59	0.61	0.64	0.67	0.70	0.74	0.78	0.81	0.85
RoE	Rs/kWh	<b>0.69</b>	0.79	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
<b>Total COG</b>	<b>Rs/kWh</b>	<b>9.26</b>	<b>8.24</b>	<b>7.64</b>	<b>7.84</b>	<b>8.05</b>	<b>8.29</b>	<b>8.53</b>	<b>8.80</b>	<b>9.08</b>	<b>9.38</b>	<b>9.70</b>	<b>10.17</b>	<b>10.53</b>	<b>10.59</b>	<b>11.08</b>	<b>11.59</b>	<b>12.13</b>	<b>12.70</b>	<b>13.30</b>	<b>13.93</b>	<b>14.59</b>

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145

Variable Cost (FY2016-17)	4.20 Rs/kwh
Levillised Tariff (Fixed)	3.40 Rs/kwh
<b>Applicable Tariff (FY2016-17)</b>	<b>7.60 Rs/kwh</b>

**Determination of Accelerated Depreciation for Biomass Power Project**

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Additional depreciation	20.00%
Income Tax (Normal Rates)	33.99%
Capital Cost	652.205

Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	17.22	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	18.78	0.00	0.00

**Accelerated Depreciation**

Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Deprn.	Rs Lakh	326.10	293.49	26.09	5.22	1.04	0.21	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	308.88	259.06	-8.35	-29.22	-33.39	-34.23	-34.39	-34.43	-34.43	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-18.78	0.00	0.00
Tax Benefit	Rs Lakh	104.99	88.05	-2.84	-9.93	-11.35	-11.63	-11.69	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-6.38	0.00	0.00
Net Energy generation	MU	2.48	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	4.24	1.43	-0.05	-0.16	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15

<b>Levillised benefit</b>	<b>0.21 (Rs/kWh)</b>
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Assumption for Biomass Power Project Parameters				Select State	Others
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during start up	%	13%
			Auxillary Consumption after start up	%	12%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	652.20
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	456.543
			Total Equity Amount	Rs Lacs	195.661
		Debt Component	Loan Amount	Rs Lacs	456.543
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	12
		Equity Component	Interest Rate	%	12.76%
		Equity amount	Rs Lacs	195.661	
		Return on Equity for first 10 years	% p.a	20.00%	
		Return on Equity after 10 years	%	24.00%	
		Weighted average of ROE	%	22.00%	
		Discount Rate (equiv. to WACC)	%	10.70%	
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation			
		Depreciation Rate(power plant)	%	5.830%	
		Depreciation Rate 13th year onwards	%	2.505%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare (% of O&M expenses)		15%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
			Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4063
			During Stablization Period	Kcal/kwh	4063
		Biomass	Base Price	Rs/T	3003.01
			GCV - Biomass	Kcal/kg	3174
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs Lacs	47.26	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2013-14)	Rs Lacs	40.00	



Determination of Tariff Component: Biomass Power Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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
Auxiliary Consumption	MU		0.74	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Net Generation	MU		4.95	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost																						
Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Biomass Cost	Rs Lakh		218.88	282.87	297.01	311.86	327.45	343.83	361.02	379.07	398.02	417.92	438.82	460.76	483.80	507.99	533.39	560.05	588.06	617.46	648.33	680.75
Fixed Cost																						
Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
O&M Expenses	Rs Lakh		47.26	49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99
Depreciation	Rs Lakh		38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02	38.02
Interest on term loan	Rs Lakh		55.83	50.98	46.12	41.27	36.41	31.56	26.70	21.85	16.99	12.14	7.28	2.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		20.41	24.79	25.79	26.85	27.97	29.16	30.41	31.73	33.12	34.59	36.31	37.95	39.23	41.16	43.18	45.31	47.55	49.90	52.37	54.97
Return on Equity	Rs Lakh		39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	39.13	46.96	46.96	46.96	46.96	46.96	46.96	46.96	46.96	46.96
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>200.67</b>	<b>202.89</b>	<b>201.90</b>	<b>201.12</b>	<b>200.59</b>	<b>200.29</b>	<b>200.26</b>	<b>200.49</b>	<b>201.02</b>	<b>201.85</b>	<b>211.01</b>	<b>212.50</b>	<b>194.66</b>	<b>201.86</b>	<b>209.46</b>	<b>217.47</b>	<b>225.94</b>	<b>234.87</b>	<b>244.30</b>	<b>254.26</b>
Levelling tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	<b>6.16</b>	4.42	4.59	4.82	5.06	5.31	5.58	5.85	6.15	6.45	6.78	7.12	7.47	7.84	8.24	8.65	9.08	9.54	10.01	10.51	11.04
O&M expn	Rs/kWh	<b>1.16</b>	0.95	0.81	0.86	0.91	0.96	1.01	1.07	1.13	1.20	1.26	1.34	1.41	1.49	1.58	1.67	1.77	1.87	1.97	2.09	2.21
Depreciation	Rs/kWh	<b>0.57</b>	0.77	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	<b>0.48</b>	1.13	0.83	0.75	0.67	0.59	0.51	0.43	0.35	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	<b>0.52</b>	0.41	0.40	0.42	0.44	0.45	0.47	0.49	0.51	0.54	0.56	0.59	0.62	0.64	0.67	0.70	0.73	0.77	0.81	0.85	0.89
RoE	Rs/kWh	<b>0.69</b>	0.79	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
<b>Total COG</b>	<b>Rs/kWh</b>	<b>9.58</b>	<b>8.47</b>	<b>7.88</b>	<b>8.09</b>	<b>8.32</b>	<b>8.56</b>	<b>8.82</b>	<b>9.10</b>	<b>9.40</b>	<b>9.71</b>	<b>10.05</b>	<b>10.54</b>	<b>10.92</b>	<b>11.00</b>	<b>11.51</b>	<b>12.05</b>	<b>12.61</b>	<b>13.20</b>	<b>13.82</b>	<b>14.47</b>	<b>15.16</b>
Levelling Tariff																						
Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)		4.42	Rs/kwh																			
Levelling Tariff (Fixed)		3.42	Rs/kwh																			
<b>Applicable Tariff (FY2016-17)</b>		<b>7.84</b>	<b>Rs/kwh</b>																			

Determination of Accelerated Depreciation for Biomass Power Project																						
Depreciation amount		90%																				
Book Depreciation rate		5.28%																				
Tax Depreciation rate		80%																				
Additional depreciation		20.00%																				
Income Tax (Normal Rates)		33.99%																				
Capital Cost		652.205																				
Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	17.22	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	18.78	0.00	0.00
Accelerated Depreciation																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	326.10	293.49	26.09	5.22	1.04	0.21	0.04	0.01	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
Net Depreciation Benefit	Rs Lakh	308.88	259.06	-8.35	-29.22	-33.39	-34.23	-34.39	-34.43	-34.43	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-34.44	-18.78	0.00	0.00
Tax Benefit	Rs Lakh	104.99	88.05	-2.84	-9.93	-11.35	-11.63	-11.69	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-11.70	-6.38	0.00	0.00
Net Energy generation	MU	2.48	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	4.24	1.43	-0.05	-0.16	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levelling benefit</b>		<b>0.21</b>	<b>(Rs/kWh)</b>																			

## Non Fossil Fuel Based Cogeneration

Select State

AP

## Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	73	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	8.50%
			Auxillary Consumption after stabilisation	%	8.50%
			PLF(Stablization for 6 months)	%	45%
			PLF(during first year after Stablization)	%	45%
			PLF(second year onwards)	%	45%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	452.746
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	316.922
			Total Equity Amount	Rs Lacs	135.824
		<u>Debt Component</u>	Loan Amount	Rs Lacs	316.92
			Moratorium Period	years	0
			Repayment Period(incl Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	135.82
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges	(% of O&M exepenses)	Months	1
		Maintenance Spare			15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		<u>Biomass</u>	Bagasse Price	Rs/T	1585.19
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
	Operation & Maintenance				
		O&M Expenses (2016-17)		Rs. Lacs	19.99
		<u>O &amp; M Expenses Escalation</u>		%	5.72%
7		O&M Expenses (2012-13)		Rs. Lacs	16.00

**Determination of Tariff for non-fossil fuel based co-generation Projects**

Units Generation		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU			3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94
Auxiliary Consumption	MU			0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Net Generation	MU			3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61
Fixed Cost		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh			19.99	21.13	22.34	23.62	24.97	26.40	27.91	29.50	31.19	32.97	34.86	36.85	38.96	41.19	43.55	46.04	48.67	51.45	54.40	57.51
Depreciation	Rs Lakh			26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34
Interest on term loan	Rs Lakh			38.76	35.39	32.02	28.65	25.28	21.91	18.54	15.17	11.80	8.43	5.06	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh			9.95	10.28	10.62	10.99	11.38	11.79	12.23	12.69	13.19	13.71	14.38	14.97	15.28	16.01	16.78	17.58	18.43	19.32	20.26	21.24
Return on Equity	Rs Lakh			27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>			<b>122.26</b>	<b>120.35</b>	<b>118.54</b>	<b>116.81</b>	<b>115.18</b>	<b>113.65</b>	<b>112.23</b>	<b>110.92</b>	<b>109.73</b>	<b>108.67</b>	<b>113.29</b>	<b>112.50</b>	<b>98.18</b>	<b>101.14</b>	<b>104.26</b>	<b>107.56</b>	<b>111.04</b>	<b>114.72</b>	<b>118.60</b>	<b>122.69</b>
Levelling tariff corresponding to Useful life																							
Per Unit Cost of Generation		Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	<b>3.91</b>		2.77	2.91	3.06	3.21	3.37	3.54	3.71	3.90	4.10	4.30	4.52	4.74	4.98	5.23	5.49	5.76	6.05	6.35	6.67	7.00
O&M expn	Rs/kWh	<b>0.82</b>		0.55	0.59	0.62	0.65	0.69	0.73	0.77	0.82	0.86	0.91	0.97	1.02	1.08	1.14	1.21	1.28	1.35	1.43	1.51	1.59
Depreciation	Rs/kWh	<b>0.65</b>		0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Int. on term loan	Rs/kWh	<b>0.54</b>		1.07	0.98	0.89	0.79	0.70	0.61	0.51	0.42	0.33	0.23	0.14	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	<b>0.35</b>		0.28	0.28	0.29	0.30	0.32	0.33	0.34	0.35	0.37	0.38	0.40	0.41	0.42	0.44	0.47	0.49	0.51	0.54	0.56	0.59
RoE	Rs/kWh	<b>0.79</b>		0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
<b>Total COG</b>	<b>Rs/kWh</b>	<b>7.08</b>		<b>6.16</b>	<b>6.25</b>	<b>6.34</b>	<b>6.45</b>	<b>6.56</b>	<b>6.69</b>	<b>6.83</b>	<b>6.98</b>	<b>7.14</b>	<b>7.31</b>	<b>7.66</b>	<b>7.86</b>	<b>7.70</b>	<b>8.03</b>	<b>8.38</b>	<b>8.74</b>	<b>9.13</b>	<b>9.53</b>	<b>9.96</b>	<b>10.41</b>
Levelling Tariff		Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor				1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)	2.77	Rs/kwh																					
Levelling Tariff (Fixed)	3.17	Rs/kwh																					
<b>Applicable Tariff (FY2016-17)</b>	<b>5.94</b>	<b>Rs/kwh</b>																					

Determination of Accelerated Depreciation for non-fossil fuel based co-generation project																						
Depreciation amount		90%																				
Book Depreciation rate		5.28%																				
Tax Depreciation rate		80%																				
Additional Depreciation		20.00%																				
Income Tax (Normal Rates)		33.990%																				
Capital Cost Rs. Lakh		440.243																				
Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.62	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	12.68	0.00	0.00
<b>Accelerated Depreciation</b>																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	220.12	198.11	17.61	3.52	0.70	0.14	0.03	0.01	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
Net Depreciation Benefit	Rs Lakh	208.50	174.86	-5.64	-19.72	-22.54	-23.10	-23.22	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-12.68	0.00	0.00
Tax Benefit	Rs Lakh	70.87	59.44	-1.92	-6.70	-7.66	-7.85	-7.89	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-4.31	0.00	0.00
Net Energy generation	MU	1.80	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61
Per unit benefit	Rs/Unit	3.93	1.65	-0.05	-0.19	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levellised benefit</b>	<b>0.24</b>	<b>(Rs/kWh)</b>																				

## Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	73	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	8.50%
			Auxillary Consumption after stabilisation	%	8.50%
			PLF(Stablization for 6 months)	%	53%
			PLF(during first year after Stablization)	%	53%
			PLF(second year onwards)	%	53%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	452.746
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	316.922
			Total Equity Amount	Rs Lacs	135.824
		Debt Component	Loan Amount	Rs Lacs	316.92
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	135.82
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
			Depreciation		
			Depreciation Rate(power plant)	%	5.83%
		Depreciation Rate 13th year onwards	%	2.51%	
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		Receivables for Debtors	Months	2	
		For Variable Charges			
		Biomass Stock	Months	4	
	Interest On Working Capital	%	13.26%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		Biomass	Bagasse Price	Rs/T	2254.67
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)	Rs. Lacs	19.99	
		O & M Expenses Escalation	%	5.72%	
		O&M Expenses (2012-13)	Rs. Lacs	16.00	

Determination of Tariff for non-fossil fuel based co-generation Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64
Auxiliary Consumption	MU		0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Net Generation	MU		4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		19.99	21.13	22.34	23.62	24.97	26.40	27.91	29.50	31.19	32.97	34.86	36.85	38.96	41.19	43.55	46.04	48.67	51.45	54.40	57.51
Depreciation	Rs Lakh		26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34
Interest on term loan	Rs Lakh		38.76	35.39	32.02	28.65	25.28	21.91	18.54	15.17	11.80	8.43	5.06	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		14.53	15.08	15.67	16.29	16.94	17.63	18.36	19.13	19.95	20.81	21.84	22.79	23.50	24.64	25.84	27.10	28.42	29.81	31.28	32.81
Return on Equity	Rs Lakh		27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>126.83</b>	<b>125.16</b>	<b>123.58</b>	<b>122.11</b>	<b>120.75</b>	<b>119.50</b>	<b>118.37</b>	<b>117.36</b>	<b>116.49</b>	<b>115.77</b>	<b>120.75</b>	<b>120.33</b>	<b>106.40</b>	<b>109.77</b>	<b>113.33</b>	<b>117.08</b>	<b>121.03</b>	<b>125.21</b>	<b>129.61</b>	<b>134.26</b>
Levelling tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	<b>5.56</b>	3.94	4.14	4.35	4.56	4.79	5.03	5.28	5.55	5.83	6.12	6.42	6.74	7.08	7.43	7.81	8.20	8.61	9.04	9.49	9.96
O&M expn	Rs/kWh	<b>0.70</b>	0.47	0.50	0.53	0.56	0.59	0.62	0.66	0.69	0.73	0.78	0.82	0.87	0.92	0.97	1.03	1.08	1.15	1.21	1.28	1.35
Depreciation	Rs/kWh	<b>0.55</b>	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Int. on term loan	Rs/kWh	<b>0.46</b>	0.91	0.83	0.75	0.67	0.60	0.52	0.44	0.36	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	<b>0.45</b>	0.34	0.36	0.37	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.54	0.55	0.58	0.61	0.64	0.67	0.70	0.74	0.77
RoE	Rs/kWh	<b>0.67</b>	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.40</b>	<b>6.93</b>	<b>7.09</b>	<b>7.26</b>	<b>7.44</b>	<b>7.63</b>	<b>7.84</b>	<b>8.07</b>	<b>8.31</b>	<b>8.57</b>	<b>8.84</b>	<b>9.26</b>	<b>9.58</b>	<b>9.59</b>	<b>10.02</b>	<b>10.47</b>	<b>10.95</b>	<b>11.46</b>	<b>11.98</b>	<b>12.54</b>	<b>13.12</b>
Levelling Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)	3.94	Rs/Kwh																				
Levelling Tariff (Fixed)	2.84	Rs/Kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>6.79</b>	<b>Rs/Kwh</b>																				

<b>Determination of Accelerated Depreciation for non-fossil fuel based co-generation project</b>																						
Depreciation amount		90%																				
Book Depreciation rate		5.28%																				
Tax Depreciation rate		80%																				
Additional Depreciation		20.00%																				
Income Tax (Normal Rates)		33.990%																				
Capital Cost Rs. Lakh		440.243																				
<b>Years -----&gt;</b>	<b>Unit</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.62	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	12.68	0.00	0.00
<b>Accelerated Depreciation</b>																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	220.12	198.11	17.61	3.52	0.70	0.14	0.03	0.01	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
Net Depreciation Benefit	Rs Lakh	208.50	174.86	-5.64	-19.72	-22.54	-23.10	-23.22	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-12.68	0.00	0.00
Tax Benefit	Rs Lakh	70.87	59.44	-1.92	-6.70	-7.66	-7.85	-7.89	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-4.31	0.00	0.00
Net Energy generation	MU	2.12	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Per unit benefit	Rs/Unit	3.34	1.40	-0.05	-0.16	-0.18	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levellised benefit</b>	<b>0.21</b>	<b>(Rs/kWh)</b>																				

## Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	73	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	8.50%
			Auxillary Consumption after stabilisation	%	8.50%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	60%
			PLF(second year onwards)	%	60%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	452.746
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	316.922
			Total Equity Amount	Rs Lacs	135.824
		<u>Debt Component</u>	Loan Amount	Rs Lacs	316.92
			Moratorium Period	years	0
			Repayment Period(inclد Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	135.82
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges	(% of O&M exepenses)	Months	1
		Maintenance Spare			15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		<u>Biomass</u>	Bagasse Price	Rs/T	2221.93
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
	Operation & Maintenance	O&M Expenses (2016-17)		Rs. Lacs	19.99
		<u>O &amp; M Expenses Escalation</u>		%	5.72%
7		O&M Expenses (2012-13)		Rs. Lacs	16.00



Determination of Tariff for non-fossil fuel based co-generation Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU		5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	
Auxiliary Consumption	MU		0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
Net Generation	MU		4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		19.99	21.13	22.34	23.62	24.97	26.40	27.91	29.50	31.19	32.97	34.86	36.85	38.96	41.19	43.55	46.04	48.67	51.45	54.40	57.51
Depreciation	Rs Lakh		26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34
Interest on term loan	Rs Lakh		38.76	35.39	32.02	28.65	25.28	21.91	18.54	15.17	11.80	8.43	5.06	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		15.84	16.46	17.11	17.81	18.54	19.31	20.12	20.98	21.89	22.85	23.98	25.04	25.86	27.12	28.44	29.83	31.29	32.82	34.44	36.13
Return on Equity	Rs Lakh		27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>128.15</b>	<b>126.54</b>	<b>125.03</b>	<b>123.63</b>	<b>122.34</b>	<b>121.17</b>	<b>120.13</b>	<b>119.21</b>	<b>118.43</b>	<b>117.80</b>	<b>122.88</b>	<b>122.57</b>	<b>108.76</b>	<b>112.25</b>	<b>115.93</b>	<b>119.81</b>	<b>123.90</b>	<b>128.22</b>	<b>132.77</b>	<b>137.58</b>
Levellised tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levellised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	<b>5.48</b>	3.89	4.08	4.28	4.50	4.72	4.96	5.21	5.47	5.74	6.03	6.33	6.65	6.98	7.33	7.69	8.08	8.48	8.91	9.35	9.82
O&M expn	Rs/kWh	<b>0.62</b>	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.69	0.72	0.77	0.81	0.86	0.91	0.96	1.01	1.07	1.13	1.20
Depreciation	Rs/kWh	<b>0.49</b>	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	<b>0.41</b>	0.81	0.74	0.67	0.60	0.53	0.46	0.39	0.32	0.25	0.18	0.11	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	<b>0.44</b>	0.33	0.34	0.36	0.37	0.39	0.40	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.56	0.59	0.62	0.65	0.68	0.72	0.75
RoE	Rs/kWh	<b>0.59</b>	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.03</b>	<b>6.55</b>	<b>6.71</b>	<b>6.88</b>	<b>7.07</b>	<b>7.27</b>	<b>7.48</b>	<b>7.70</b>	<b>7.95</b>	<b>8.20</b>	<b>8.48</b>	<b>8.88</b>	<b>9.19</b>	<b>9.24</b>	<b>9.66</b>	<b>10.10</b>	<b>10.57</b>	<b>11.06</b>	<b>11.57</b>	<b>12.11</b>	<b>12.68</b>
Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)	3.89	Rs/Kwh																				
Levellised Tariff (Fixed)	2.55	Rs/Kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>6.43</b>	<b>Rs/Kwh</b>																				

<b>Determination of Accelerated Depreciation for non-fossil fuel based co-generation project</b>																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost Rs. Lakh	440.243																					
<b>Years -----&gt;</b>	<b>Unit</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.62	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	12.68	0.00	0.00
<b>Accelerated Depreciation</b>																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	220.12	198.11	17.61	3.52	0.70	0.14	0.03	0.01	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
Net Depreciation Benefit	Rs Lakh	208.50	174.86	-5.64	-19.72	-22.54	-23.10	-23.22	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-12.68	0.00	0.00
Tax Benefit	Rs Lakh	70.87	59.44	-1.92	-6.70	-7.66	-7.85	-7.89	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-4.31	0.00	0.00
Net Energy generation	MU	2.40	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81
Per unit benefit	Rs/Unit	2.95	1.24	-0.04	-0.14	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.09	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levellised benefit</b>	<b>0.18</b>	<b>(Rs/kWh)</b>																				

Select State

Punjab

## Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	73	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity Auxillary Consumption during stabilisation Auxillary Consumption after stabilisation PLF(Stablization for 6 months) PLF(during first year after Stablization) PLF(second year onwards) Useful Life	MW % % % % % Years	1 8.50% 8.50% 53% 53% 53% 20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	452.746
3	Financial Assumptions	<u>Debt: Equity</u>	Debt Equity Total Debt Amount Total Equity Amout	% % Rs Lacs Rs Lacs	70% 30% 316.922 135.824
		<u>Debt Component</u>	Loan Amount Moratorium Period Repayment Period(incl Moratorium) Interest Rate	Rs Lacs years years %	316.92 0 12 12.76%
		<u>Equity Component</u>	Equity amount Return on Equity for first 10 years Return on Equity after 10 years Weighted average of ROE Discount Rate (equiv. to WACC)	Rs Lacs % p.a % % %	135.82 20.00% 24.00% 22.00% 10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant) Depreciation Rate 13th year onwards	% %	5.83% 2.51%
5	Working Capital	<u>For Fixed Charges</u> O&M Charges Maintenance Spare Receivables for Debtors <u>For Variable Charges</u> Biomass Stock Interest On Working Capital	(% of O&M exepenses)	Months Months Months %	1 15% 2 4 13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period During Stablization Period	Kcal/kwh Kcal/kwh	3600 3600
		<u>Biomass</u>	Bagasse Price GCV - Bagasse Bagasse Price Escalation Factor	Rs/T Kcal/kg %	1984.22 2250 5.00%
	Operation & Maintenance	O&M Expenses (2016-17) <u>O &amp; M Expenses Escalation</u> O&M Expenses (2012-13)		Rs. Lacs % Rs. Lacs	19.99 5.72% 16.00
7					

Determination of Tariff for non-fossil fuel based co-generation Projects																							
Units Generation		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU			4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	
Auxiliary Consumption	MU			0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
Net Generation	MU			4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	
<b>Fixed Cost</b>																							
Fixed Cost		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh			19.99	21.13	22.34	23.62	24.97	26.40	27.91	29.50	31.19	32.97	34.86	36.85	38.96	41.19	43.55	46.04	48.67	51.45	54.40	57.51
Depreciation	Rs Lakh			26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34
Interest on term loan	Rs Lakh			38.76	35.39	32.02	28.65	25.28	21.91	18.54	15.17	11.80	8.43	5.06	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh			13.17	13.65	14.17	14.71	15.28	15.89	16.54	17.22	17.94	18.69	19.62	20.46	21.06	22.07	23.14	24.27	25.45	26.69	28.00	29.37
Return on Equity	Rs Lakh			27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>			<b>125.47</b>	<b>123.73</b>	<b>122.08</b>	<b>120.53</b>	<b>119.09</b>	<b>117.76</b>	<b>116.54</b>	<b>115.45</b>	<b>114.48</b>	<b>113.65</b>	<b>118.53</b>	<b>118.00</b>	<b>103.96</b>	<b>107.20</b>	<b>110.63</b>	<b>114.24</b>	<b>118.06</b>	<b>122.09</b>	<b>126.33</b>	<b>130.82</b>
<b>Levelling tariff corresponding to Useful life</b>																							
Per Unit Cost of Generation		Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh		<b>4.89</b>	3.47	3.64	3.83	4.02	4.22	4.43	4.65	4.88	5.13	5.38	5.65	5.93	6.23	6.54	6.87	7.21	7.57	7.95	8.35	8.77
O&M expn	Rs/kWh		<b>0.70</b>	0.47	0.50	0.53	0.56	0.59	0.62	0.66	0.69	0.73	0.78	0.82	0.87	0.92	0.97	1.03	1.08	1.15	1.21	1.28	1.35
Depreciation	Rs/kWh		<b>0.55</b>	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Int. on term loan	Rs/kWh		<b>0.46</b>	0.91	0.83	0.75	0.67	0.60	0.52	0.44	0.36	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		<b>0.41</b>	0.31	0.32	0.33	0.35	0.36	0.37	0.39	0.41	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.57	0.60	0.63	0.66	0.69
RoE	Rs/kWh		<b>0.67</b>	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
<b>Total COG</b>	<b>Rs/kWh</b>		<b>7.69</b>	<b>6.42</b>	<b>6.56</b>	<b>6.70</b>	<b>6.85</b>	<b>7.02</b>	<b>7.20</b>	<b>7.39</b>	<b>7.60</b>	<b>7.82</b>	<b>8.06</b>	<b>8.44</b>	<b>8.71</b>	<b>8.68</b>	<b>9.07</b>	<b>9.47</b>	<b>9.90</b>	<b>10.35</b>	<b>10.83</b>	<b>11.32</b>	<b>11.85</b>
<b>Levelling Tariff</b>																							
Levelling Tariff		Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor				1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)		3.47	Rs/Kwh																				
Levelling Tariff (Fixed)		2.80	Rs/Kwh																				
<b>Applicable Tariff (FY2016-17)</b>		<b>6.27</b>	<b>Rs/Kwh</b>																				

<b>Determination of Accelerated Depreciation for non-fossil fuel based co-generation project</b>																						
Depreciation amount		90%																				
Book Depreciation rate		5.28%																				
Tax Depreciation rate		80%																				
Additional Depreciation		20.00%																				
Income Tax (Normal Rates)		33.990%																				
Capital Cost Rs. Lakh		440.243																				
<b>Years -----&gt;</b>	<b>Unit</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.62	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	12.68	0.00	0.00
<b>Accelerated Depreciation</b>																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	220.12	198.11	17.61	3.52	0.70	0.14	0.03	0.01	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
Net Depreciation Benefit	Rs Lakh	208.50	174.86	-5.64	-19.72	-22.54	-23.10	-23.22	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-12.68	0.00	0.00
Tax Benefit	Rs Lakh	70.87	59.44	-1.92	-6.70	-7.66	-7.85	-7.89	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-4.31	0.00	0.00
Net Energy generation	MU	2.12	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Per unit benefit	Rs/Unit	3.34	1.40	-0.05	-0.16	-0.18	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levellised benefit</b>	<b>0.21</b>	<b>(Rs/kWh)</b>																				

Select State

TN

## Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	73	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	8.50%
			Auxillary Consumption after stabilisation	%	8.50%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	60%
			PLF(second year onwards)	%	60%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	452.746
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	316.922
			Total Equity Amount	Rs Lacs	135.824
		Debt Component	Loan Amount	Rs Lacs	316.92
			Moratorium Period	years	0
			Repayment Period(incl Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	135.82
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%
		Depreciation	Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		Biomass	Bagasse Price	Rs/T	1707.69
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
	Operation & Maintenance	O&M Expenses (2016-17)		Rs. Lacs	19.99
		O & M Expenses Escalation		%	5.72%
7		O&M Expenses (2012-13)		Rs. Lacs	16.00

Determination of Tariff for non-fossil fuel based co-generation Projects																							
Units Generation		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU			5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	
Auxiliary Consumption	MU			0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
Net Generation	MU			4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	
Fixed Cost		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh			19.99	21.13	22.34	23.62	24.97	26.40	27.91	29.50	31.19	32.97	34.86	36.85	38.96	41.19	43.55	46.04	48.67	51.45	54.40	57.51
Depreciation	Rs Lakh			26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34
Interest on term loan	Rs Lakh			38.76	35.39	32.02	28.65	25.28	21.91	18.54	15.17	11.80	8.43	5.06	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh			12.91	13.38	13.88	14.41	14.97	15.57	16.19	16.86	17.56	18.30	19.20	20.03	20.59	21.59	22.64	23.73	24.89	26.10	27.38	28.72
Return on Equity	Rs Lakh			27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>			<b>125.21</b>	<b>123.46</b>	<b>121.80</b>	<b>120.24</b>	<b>118.78</b>	<b>117.43</b>	<b>116.20</b>	<b>115.08</b>	<b>114.10</b>	<b>113.26</b>	<b>118.11</b>	<b>117.56</b>	<b>103.49</b>	<b>106.72</b>	<b>110.12</b>	<b>113.71</b>	<b>117.50</b>	<b>121.50</b>	<b>125.72</b>	<b>130.17</b>
Levelling tariff corresponding to Useful life																							
Per Unit Cost of Generation		Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh		<b>4.21</b>	2.99	3.14	3.29	3.46	3.63	3.81	4.00	4.20	4.41	4.63	4.86	5.11	5.36	5.63	5.91	6.21	6.52	6.84	7.19	7.55
O&M expn	Rs/kWh		<b>0.62</b>	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.69	0.72	0.77	0.81	0.86	0.91	0.96	1.01	1.07	1.13	1.20
Depreciation	Rs/kWh		<b>0.49</b>	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh		<b>0.41</b>	0.81	0.74	0.67	0.60	0.53	0.46	0.39	0.32	0.25	0.18	0.11	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		<b>0.35</b>	0.27	0.28	0.29	0.30	0.31	0.32	0.34	0.35	0.37	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.52	0.54	0.57	0.60
RoE	Rs/kWh		<b>0.59</b>	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
<b>Total COG</b>	<b>Rs/kWh</b>		<b>6.67</b>	<b>5.59</b>	<b>5.70</b>	<b>5.82</b>	<b>5.96</b>	<b>6.10</b>	<b>6.25</b>	<b>6.42</b>	<b>6.59</b>	<b>6.78</b>	<b>6.99</b>	<b>7.32</b>	<b>7.55</b>	<b>7.51</b>	<b>7.85</b>	<b>8.20</b>	<b>8.57</b>	<b>8.96</b>	<b>9.37</b>	<b>9.80</b>	<b>10.25</b>
Levelling Tariff		Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor				1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)	2.99	Rs/Kwh																					
Levelling Tariff (Fixed)	2.46	Rs/Kwh																					
<b>Applicable Tariff (FY2016-17)</b>	<b>5.45</b>	<b>Rs/Kwh</b>																					

<b>Determination of Accelerated Depreciation for non-fossil fuel based co-generation project</b>																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost Rs. Lakh	440.243																					
<b>Years -----&gt;</b>	<b>Unit</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.62	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	12.68	0.00	0.00
<b>Accelerated Depreciation</b>																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	220.12	198.11	17.61	3.52	0.70	0.14	0.03	0.01	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
Net Depreciation Benefit	Rs Lakh	208.50	174.86	-5.64	-19.72	-22.54	-23.10	-23.22	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-12.68	0.00	0.00
Tax Benefit	Rs Lakh	70.87	59.44	-1.92	-6.70	-7.66	-7.85	-7.89	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-4.31	0.00	0.00
Net Energy generation	MU	2.40	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81
Per unit benefit	Rs/Unit	2.95	1.24	-0.04	-0.14	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.09	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levellised benefit</b>	<b>0.18</b>	<b>(Rs/kWh)</b>																				



Select State

UP

## Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	73	Assumptions	
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	8.50%	
			Auxillary Consumption after stabilisation	%	8.50%	
			PLF(Stablization for 6 months)	%	45%	
			PLF(during first year after Stablization)	%	45%	
			PLF(second year onwards)	%	45%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	452.746	
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	316.922	
			Total Equity Amount	Rs Lacs	135.824	
		<u>Debt Component</u>	Loan Amount	Rs Lacs	316.92	
			Moratorium Period	years	0	
			Repayment Period(inclld Moratorium)	years	12	
			Interest Rate	%	12.76%	
		<u>Equity Component</u>	Equity amount	Rs Lacs	135.82	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years	%	24.00%	
			Weighted average of ROE	%	22.00%	
			Discount Rate (equiv. to WACC)	%	10.70%	
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%	
			<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.83%
						Depreciation Rate 13th year onwards
5	Working Capital	<u>For Fixed Charges</u> O&M Charges Maintenance Spare Receivables for Debtors <u>For Variable Charges</u> Biomass Stock Interest On Working Capital	(% of O&M exepenses)	Months	1	
						15%
				Months	2	
				Months	4	
				%	13.26%	
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3600	
			During Stablization Period	Kcal/kwh	3600	
		<u>Biomass</u>	Bagasse Price	Rs/T	1768.33	
			GCV - Bagasse	Kcal/kg	2250	
			Bagasse Price Escalation Factor		5.00%	
7	Operation & Maintenance		O&M Expenses (2016-17)	Rs. Lacs	19.99	
			O & M Expenses Escalation	%	5.72%	
			O&M Expenses (2012-13)	Rs. Lacs	16.00	

Determination of Tariff for non-fossil fuel based co-generation Projects																							
Units Generation		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU			3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94
Auxiliary Consumption	MU			0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Net Generation	MU			3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61
Fixed Cost		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh			19.99	21.13	22.34	23.62	24.97	26.40	27.91	29.50	31.19	32.97	34.86	36.85	38.96	41.19	43.55	46.04	48.67	51.45	54.40	57.51
Depreciation	Rs Lakh			26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	11.34	11.34	11.34	11.34	11.34	11.34	11.34
Interest on term loan	Rs Lakh			38.76	35.39	32.02	28.65	25.28	21.91	18.54	15.17	11.80	8.43	5.06	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh			10.73	11.10	11.48	11.89	12.33	12.79	13.28	13.80	14.34	14.92	15.66	16.31	16.69	17.49	18.33	19.21	20.14	21.12	22.14	23.22
Return on Equity	Rs Lakh			27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>			<b>123.04</b>	<b>121.18</b>	<b>119.40</b>	<b>117.72</b>	<b>116.13</b>	<b>114.65</b>	<b>113.28</b>	<b>112.02</b>	<b>110.89</b>	<b>109.88</b>	<b>114.57</b>	<b>113.84</b>	<b>99.59</b>	<b>102.62</b>	<b>105.81</b>	<b>109.19</b>	<b>112.75</b>	<b>116.51</b>	<b>120.48</b>	<b>124.67</b>
Levelling tariff corresponding to Useful life																							
Per Unit Cost of Generation		Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh		<b>4.36</b>	3.09	3.25	3.41	3.58	3.76	3.95	4.14	4.35	4.57	4.80	5.04	5.29	5.55	5.83	6.12	6.43	6.75	7.09	7.44	7.81
O&M expn	Rs/kWh		<b>0.82</b>	0.55	0.59	0.62	0.65	0.69	0.73	0.77	0.82	0.86	0.91	0.97	1.02	1.08	1.14	1.21	1.28	1.35	1.43	1.51	1.59
Depreciation	Rs/kWh		<b>0.65</b>	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Int. on term loan	Rs/kWh		<b>0.54</b>	1.07	0.98	0.89	0.79	0.70	0.61	0.51	0.42	0.33	0.23	0.14	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		<b>0.39</b>	0.30	0.31	0.32	0.33	0.34	0.35	0.37	0.38	0.40	0.41	0.43	0.45	0.46	0.48	0.51	0.53	0.56	0.59	0.61	0.64
RoE	Rs/kWh		<b>0.79</b>	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
<b>Total COG</b>	<b>Rs/kWh</b>		<b>7.56</b>	<b>6.50</b>	<b>6.61</b>	<b>6.72</b>	<b>6.84</b>	<b>6.98</b>	<b>7.13</b>	<b>7.28</b>	<b>7.46</b>	<b>7.64</b>	<b>7.84</b>	<b>8.21</b>	<b>8.44</b>	<b>8.31</b>	<b>8.68</b>	<b>9.06</b>	<b>9.46</b>	<b>9.88</b>	<b>10.32</b>	<b>10.78</b>	<b>11.27</b>
Levelling Tariff		Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor				1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)		3.09	Rs/Kwh																				
Levelling Tariff (Fixed)		3.20	Rs/Kwh																				
<b>Applicable Tariff (FY2016-17)</b>		<b>6.29</b>	<b>Rs/Kwh</b>																				

<b>Determination of Accelerated Depreciation for non-fossil fuel based co-generation project</b>																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost Rs. Lakh	440.243																					
<b>Years -----&gt;</b>	<b>Unit</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.62	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	12.68	0.00	0.00
<b>Accelerated Depreciation</b>																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	220.12	198.11	17.61	3.52	0.70	0.14	0.03	0.01	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
Net Depreciation Benefit	Rs Lakh	208.50	174.86	-5.64	-19.72	-22.54	-23.10	-23.22	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-12.68	0.00	0.00
Tax Benefit	Rs Lakh	70.87	59.44	-1.92	-6.70	-7.66	-7.85	-7.89	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-4.31	0.00	0.00
Net Energy generation	MU	1.80	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61
Per unit benefit	Rs/Unit	3.93	1.65	-0.05	-0.19	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levellised benefit</b>	<b>0.24</b>	<b>(Rs/kWh)</b>																				

Select State

Others

## Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	73	Assumptions
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	8.50%
			Auxillary Consumption after stabilisation	%	8.50%
			PLF(Stablization for 6 months)	%	53%
			PLF(during first year after Stablization)	%	53%
			PLF(second year onwards)	%	53%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	452.746
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	316.922
			Total Equity Amount	Rs Lacs	135.824
		<u>Debt Component</u>	Loan Amount	Rs Lacs	316.92
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	12.76%
		<u>Equity Component</u>	Equity amount	Rs Lacs	135.82
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years	%	24.00%
			Weighted average of ROE	%	22.00%
			Discount Rate (equiv. to WACC)	%	10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.990%
		<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		<u>Biomass</u>	Bagasse Price	Rs/T	1919.93
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
	Operation & Maintenance				
		O&M Expenses (2016-17)		Rs. Lacs	19.99
		<u>O &amp; M Expenses Escalation</u>		%	5.72%
7		O&M Expenses (2012-13)		Rs. Lacs	16.00

Determination of Tariff for non-fossil fuel based co-generation Projects																							
Units Generation		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU			4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	
Auxiliary Consumption	MU			0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
Net Generation	MU			4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	
Fixed Cost		Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh			19.99	21.13	22.34	23.62	24.97	26.40	27.91	29.50	31.19	32.97	34.86	36.85	38.96	41.19	43.55	46.04	48.67	51.45	54.40	57.51
Depreciation	Rs Lakh			26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40	11.34	11.34	11.34	11.34	11.34	11.34	11.34	11.34
Interest on term loan	Rs Lakh			38.76	35.39	32.02	28.65	25.28	21.91	18.54	15.17	11.80	8.43	5.06	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh			12.84	13.31	13.81	14.33	14.89	15.48	16.10	16.76	17.46	18.19	19.09	19.91	20.47	21.46	22.50	23.60	24.74	25.95	27.22	28.55
Return on Equity	Rs Lakh			27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	27.16	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>			<b>125.15</b>	<b>123.39</b>	<b>121.73</b>	<b>120.16</b>	<b>118.70</b>	<b>117.34</b>	<b>116.11</b>	<b>114.99</b>	<b>114.00</b>	<b>113.15</b>	<b>118.00</b>	<b>117.44</b>	<b>103.37</b>	<b>106.59</b>	<b>109.99</b>	<b>113.57</b>	<b>117.35</b>	<b>121.34</b>	<b>125.55</b>	<b>130.00</b>
Levelling tariff corresponding to Useful life																							
Per Unit Cost of Generation		Unit	Levelling	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh		<b>4.73</b>	3.36	3.53	3.70	3.89	4.08	4.28	4.50	4.72	4.96	5.21	5.47	5.74	6.03	6.33	6.65	6.98	7.33	7.69	8.08	8.48
O&M expn	Rs/kWh		<b>0.70</b>	0.47	0.50	0.53	0.56	0.59	0.62	0.66	0.69	0.73	0.78	0.82	0.87	0.92	0.97	1.03	1.08	1.15	1.21	1.28	1.35
Depreciation	Rs/kWh		<b>0.55</b>	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Int. on term loan	Rs/kWh		<b>0.46</b>	0.91	0.83	0.75	0.67	0.60	0.52	0.44	0.36	0.28	0.20	0.12	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		<b>0.40</b>	0.30	0.31	0.33	0.34	0.35	0.36	0.38	0.39	0.41	0.43	0.45	0.47	0.48	0.51	0.53	0.56	0.58	0.61	0.64	0.67
RoE	Rs/kWh		<b>0.67</b>	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
<b>Total COG</b>	<b>Rs/kWh</b>		<b>7.52</b>	<b>6.30</b>	<b>6.43</b>	<b>6.57</b>	<b>6.71</b>	<b>6.87</b>	<b>7.05</b>	<b>7.23</b>	<b>7.43</b>	<b>7.64</b>	<b>7.87</b>	<b>8.25</b>	<b>8.51</b>	<b>8.46</b>	<b>8.84</b>	<b>9.24</b>	<b>9.65</b>	<b>10.09</b>	<b>10.55</b>	<b>11.04</b>	<b>11.54</b>
Levelling Tariff		Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor				1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)	3.36	Rs/Kwh																					
Levelling Tariff (Fixed)	2.79	Rs/Kwh																					
<b>Applicable Tariff (FY2016-17)</b>	<b>6.14</b>	<b>Rs/Kwh</b>																					

<b>Determination of Accelerated Depreciation for non-fossil fuel based co-generation project</b>																						
Depreciation amount		90%																				
Book Depreciation rate		5.28%																				
Tax Depreciation rate		80%																				
Additional Depreciation		20.00%																				
Income Tax (Normal Rates)		33.990%																				
Capital Cost Rs. Lakh		440.243																				
<b>Years -----&gt;</b>	<b>Unit</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.62	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	12.68	0.00	0.00
<b>Accelerated Depreciation</b>																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	220.12	198.11	17.61	3.52	0.70	0.14	0.03	0.01	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
Net Depreciation Benefit	Rs Lakh	208.50	174.86	-5.64	-19.72	-22.54	-23.10	-23.22	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-23.24	-12.68	0.00	0.00
Tax Benefit	Rs Lakh	70.87	59.44	-1.92	-6.70	-7.66	-7.85	-7.89	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-7.90	-4.31	0.00	0.00
Net Energy generation	MU	2.12	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Per unit benefit	Rs/Unit	3.34	1.40	-0.05	-0.16	-0.18	-0.18	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levellised benefit</b>	<b>0.21</b>	<b>(Rs/kWh)</b>																				

## Solar PV Projects

Assumption for Solar PV Power Projects Parameters					Annexure 5A
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Asumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxiliary Consumption	%	0.00%
			Capacity Utilization Factor	%	19.0%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	530.02
3	Financial Assumptions		Tariff Period	Years	25
			<u>Debt: Equity</u>		
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	371.02
			Total Equity Amout	Rs Lacs	159.01
			<u>Debt Component</u>		
			Loan Amount	Rs Lacs	371.02
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	12.76%
			<u>Equity Component</u>		
			Equity amount	Rs Lacs	159.01
			Return on Equity for first 10 years	% p.a	20.00%
Return on Equity 11th year onwards	% p.a	24.00%			
Weighted average of ROE		22.40%			
Discount Rate		10.70%			
4	Financial Assumptions		<u>Fiscal Assumptions</u>		
			Income Tax	%	33.990%
			MAT Rate (for first 10 years)	%	20.000%
			80 IA benefits	Yes/No	Yes
			<u>Depreciation</u>		
Depreciation Rate for first 12 years	%	5.83%			
Depreciation Rate 13th year onwards	%	1.54%			
5	Working Capital		<u>For Fixed Charges</u>		
			O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
			<u>For Variable Charges</u>		
Interest On Working Capital	%	13.26%			
6	Operation & Maintenance		O&M Expenses (2016-17)	Rs. Lacs	7.00

Determination of Tariff for Solar PV																												
Units Generation	Unit	Year→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU		1.664	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	
Auxiliary Consumption	MU		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
Net Generation			1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	1.664	
Fixed Cost	Unit	Year→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
O&M Expenses	Rs Lakh		7.00	7.40	7.82	8.27	8.74	9.24	9.77	10.33	10.92	11.55	12.21	12.91	13.65	14.43	15.25	16.12	17.05	18.02	19.05	20.14	21.29	22.51	23.80	25.16	26.60	
Depreciation	Rs Lakh		30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	30.90	
Interest on term loan	Rs Lakh		45.37	41.43	37.48	33.54	29.59	25.65	21.70	17.76	13.81	9.86	5.92	1.97	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	0.00
Interest on working Capital	Rs Lakh		2.82	2.76	2.69	2.62	2.56	2.50	2.44	2.38	2.32	2.27	2.26	2.21	2.17	2.13	2.09	2.05	2.02	2.00	1.97	1.94	1.91	1.88	1.85	1.82	1.79	
Return on Equity	Rs Lakh		31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80	
Total Fixed Cost	Rs Lakh		117.90	114.29	110.70	107.13	103.60	100.09	96.61	93.17	89.76	86.38	83.05	79.76	76.51	73.29	70.11	66.97	63.88	60.83	57.82	54.85	51.91	49.00	46.12	43.27	40.45	
Levelised COG																												
Per Unit Cost of Generation	Unit	Levelised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
O&M expn	Rs/kWh	0.67	0.42	0.44	0.47	0.50	0.53	0.56	0.59	0.62	0.66	0.69	0.73	0.78	0.82	0.87	0.92	0.97	1.02	1.08	1.14	1.21	1.28	1.35	1.43	1.51	1.60	
Depreciation	Rs/kWh	1.54	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	
Int. on term loan	Rs/kWh	1.30	2.73	2.49	2.25	2.02	1.78	1.54	1.30	1.07	0.83	0.59	0.36	0.12	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	
Int. on working capital	Rs/kWh	0.15	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.15	
RoE	Rs/kWh	2.03	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29	
Total COG	Rs/kWh		7.08	6.87	6.65	6.44	6.22	6.01	5.80	5.60	5.39	5.19	5.00	4.81	4.62	4.44	4.27	4.11	3.96	3.81	3.67	3.53	3.40	3.28	3.16	3.05	2.94	
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145	0.131	0.118	0.107	0.097	0.087	
Levelised Tariff	5.68	Rs/Unit																										

Determination of Accelerated Depreciation Benefit for Solar PV Power Projects																										
Depreciation amount		90%																								
Book Depreciation rate		5.28%																								
Tax Depreciation rate		80%																								
Additional Depreciation		20.00%																								
Income Tax (Normal Rates)		33.990%																								
Capital Cost		530.0																								
Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Book Depreciation		2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	13.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	27.99	15.26	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%	0.00%	0.00%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	50%	5%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Depn.	Rs Lakh	265.01	238.51	21.20	4.24	0.85	0.17	0.03	0.01	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	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	251.02	210.52	-6.78	-23.74	-27.14	-27.82	-27.95	-27.98	-27.98	-27.98	-27.99	-27.99	-27.99	-27.99	-27.99	-27.99	-27.99	-27.99	-15.26	0.00	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	85.32	71.56	-2.31	-8.07	-9.22	-9.45	-9.50	-9.51	-9.51	-9.51	-9.51	-9.51	-9.51	-9.51	-9.51	-9.51	-9.51	-9.51	-5.19	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	0.83	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	0.14	0.12	0.11	0.10	0.09
Levelised benefit	0.59	Rs/Unit																								



## Solar Thermal Power projects

Assumptions for Solar Thermal Power Projects Parameters					Annexure-6A
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Factor Useful Life	MW % % Years	1 23.0% 10.0% 25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	1200.00
3	Sources of Fund	<u>Debt: Equity</u>  <u>Debt Component</u>  <u>Equity Component</u>	Tariff Period  Debt Equity Total Debt Amount Total Equity Amount  Loan Amount Moratorium Period Repayment Period(inclد Moratorium) Interest Rate  Equity amount Return on Equity for first 10 years  Return on Equity 11th year onwards Weighted average of ROE Discount Rate	Years  % % Rs Lacs Rs Lacs  Rs Lacs years years %  Rs Lacs % p.a  % p.a % %	25  70% 30% 840 360  840.00 0 12 12.76%  360.00 20.00%  24.00% 22.40% 10.70%
4	Financial Assumptions	<u>Fiscal Assumptions</u>  <u>Depreciation</u>	Income Tax  Depreciation Rate for first 12 years Depreciation Rate 13th year onwards	%  % %	33.990%  5.83% 1.54%
5	Working Capital	<u>For Fixed Charges</u> O&M Charges Maintenance Spare Receivables for Debtors <u>For Variable Charges</u> Interest On Working Capital	(% of O&M exepenses)	Months % Months %	1 15% 2 13.26%
6	Operation & Maintenance		O&M Expenses (2016-17) O & M Expenses Escalation O&M Expenses (2012-13)	Rs Lacs % Rs Lacs	18.74 5.72% 15.00

**Determination of Tariff Component - (Solar Thermal)**

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		18.74	19.81	20.94	22.14	23.41	24.75	26.16	27.66	29.24	30.91	32.68	34.55	36.53	38.62	40.82	43.16	45.63	48.24	51.00	53.91	57.00	60.26	63.71	67.35	71.20
Depreciation	Rs Lakh		69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96
Interest on term loan	Rs Lakh		102.73	93.80	84.87	75.93	67.00	58.07	49.13	40.20	31.27	22.33	13.40	4.47	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
Interest on working Capital	Rs Lakh		6.55	6.40	6.26	6.13	5.99	5.86	5.74	5.62	5.50	5.39	5.61	5.51	4.35	4.47	4.59	4.71	4.85	4.99	5.14	5.30	5.46	5.64	5.83	6.02	6.23
Return on Equity	Rs Lakh		72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40	86.40
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>269.98</b>	<b>261.97</b>	<b>254.03</b>	<b>246.16</b>	<b>238.36</b>	<b>230.64</b>	<b>222.99</b>	<b>215.43</b>	<b>207.97</b>	<b>200.60</b>	<b>208.05</b>	<b>200.89</b>	<b>145.78</b>	<b>147.98</b>	<b>150.31</b>	<b>152.77</b>	<b>155.37</b>	<b>158.12</b>	<b>161.03</b>	<b>164.11</b>	<b>167.36</b>	<b>170.80</b>	<b>174.43</b>	<b>178.27</b>	<b>182.33</b>

Per Unit COG of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh	1.65	1.03	1.09	1.15	1.22	1.29	1.36	1.44	1.53	1.61	1.70	1.80	1.91	2.01	2.13	2.25	2.38	2.52	2.66	2.81	2.97	3.14	3.32	3.51	3.71	3.93
Depreciation	Rs/kWh	3.19	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86
Int. on term loan	Rs/kWh	2.71	5.67	5.17	4.68	4.19	3.69	3.20	2.71	2.22	1.72	1.23	0.74	0.25	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
Int. on working capital	Rs/kWh	0.32	0.36	0.35	0.35	0.34	0.33	0.32	0.32	0.31	0.30	0.30	0.31	0.30	0.24	0.25	0.25	0.26	0.27	0.28	0.28	0.29	0.30	0.31	0.32	0.33	0.34
RoE	Rs/kWh	4.21	3.97	3.97	3.97	3.97	3.97	3.97	3.97	3.97	3.97	3.97	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76
<b>Total COG</b>	<b>Rs/kWh</b>	<b>12.08</b>	<b>14.89</b>	<b>14.45</b>	<b>14.01</b>	<b>13.58</b>	<b>13.14</b>	<b>12.72</b>	<b>12.30</b>	<b>11.88</b>	<b>11.47</b>	<b>11.06</b>	<b>11.47</b>	<b>11.08</b>	<b>8.04</b>	<b>8.16</b>	<b>8.29</b>	<b>8.42</b>	<b>8.57</b>	<b>8.72</b>	<b>8.88</b>	<b>9.05</b>	<b>9.23</b>	<b>9.42</b>	<b>9.62</b>	<b>9.83</b>	<b>10.06</b>
<b>Levelled Tariff</b>	<b>Rs/Unit</b>	<b>12.08</b>																									

**Determination of Accelerated Depreciation Benefit for Solar Thermal Power Projects**

Depreciation amount		90%																									
Book Depreciation rate		5.28%																									
Tax Depreciation rate		80%																									
Additional depreciation		20.00%																									
Income Tax (Normal Rates)		33.990%																									
Capital Cost		1200.0																									
<b>Years -----&gt;</b>	<b>Unit</b>		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	31.68	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	34.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Accelerated Depreciation</b>																											
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	0.002%	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%	0.00%	0.00%	0.00%	0.00%	0.00%
Allowed during the year	%	50.00%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	0.001%	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%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	0.00%	0.000%	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%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	600.00	540.00	48.00	9.60	1.92	0.38	0.08	0.02	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	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	568.32	476.64	-15.36	-53.76	-61.44	-62.98	-63.28	-63.34	-63.36	-63.36	-63.36	-63.36	-63.36	-63.36	-63.36	-63.36	-63.36	-63.36	-34.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	193.17	162.01	-5.22	-18.27	-20.88	-21.41	-21.51	-21.53	-21.54	-21.54	-21.54	-21.54	-21.54	-21.54	-21.54	-21.54	-21.54	-21.54	-11.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	0.91	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	0.14	0.12	0.11	0.10	0.09	
<b>Levelled benefit</b>	<b>Rs/Unit</b>	<b>1.24</b>																									

## Biomass Gassifier Power Projects

Select State

AP

## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	85%
			PLF(during first year after Stablization)	%	85%
			PLF(second year onwards)	%	85%
			Useful Life	Years	20
			2	Project Cost	Capital Cost/MW
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	310.001
			Total Equity Amount	Rs Lacs	132.858
		Debt Component	Loan Amount	Rs Lacs	310.00
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	12.76%
		Equity Component	Equity amount	Rs Lacs	132.86
			Return on Equity for first 10 years	% p.a	20.00%
			Return on Equity after 10 years		24.00%
			Weighted average of ROE		22.00%
			Discount Rate (equiv. to WACC)		10.70%
			4	Financial Assumptions	Fiscal Assumptions
		Depreciation	Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	2.51%
			5	Working Capital	For Fixed Charges
6	Fuel Related Assumptions	O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.26%
		Biomass	Specific Fuel Consumption	kg/kWh	1.25
			Base Price	Rs/T	2807.74
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	O & M Expemses (2016-17)		Rs Lacs	49.97
		O & M Expenses Escalation		%	5.72%
		O & M Expemses (2012-13)		Rs Lacs	40.00

Determination of Tariff Component: Biomass Gasifier Power Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		261.33	274.40	288.12	302.52	317.65	333.53	350.21	367.72	386.10	405.41	425.68	446.96	469.31	492.78	517.42	543.29	570.45	598.97	628.92	660.37
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		22.47	23.44	24.46	25.53	26.67	27.86	29.12	30.45	31.86	33.33	35.01	36.65	38.08	39.97	41.96	44.05	46.25	48.56	50.99	53.55
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>162.74</b>	<b>163.27</b>	<b>164.01</b>	<b>164.99</b>	<b>166.20</b>	<b>167.67</b>	<b>169.41</b>	<b>171.43</b>	<b>173.76</b>	<b>176.40</b>	<b>184.81</b>	<b>188.13</b>	<b>178.46</b>	<b>185.93</b>	<b>193.81</b>	<b>202.13</b>	<b>210.91</b>	<b>220.18</b>	<b>229.97</b>	<b>240.30</b>
Levillised tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levillised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	5.50	3.90	4.09	4.30	4.51	4.74	4.98	5.23	5.49	5.76	6.05	6.35	6.67	7.00	7.35	7.72	8.11	8.51	8.94	9.38	9.85
O&M expn	Rs/kWh	1.11	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15
Depreciation	Rs/kWh	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Int. on term loan	Rs/kWh	0.29	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.46	0.34	0.35	0.36	0.38	0.40	0.42	0.43	0.45	0.48	0.50	0.52	0.55	0.57	0.60	0.63	0.66	0.69	0.72	0.76	0.80
RcE	Rs/kWh	0.42	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.11</b>	<b>6.33</b>	<b>6.53</b>	<b>6.75</b>	<b>6.98</b>	<b>7.22</b>	<b>7.48</b>	<b>7.75</b>	<b>8.05</b>	<b>8.35</b>	<b>8.68</b>	<b>9.11</b>	<b>9.48</b>	<b>9.67</b>	<b>10.13</b>	<b>10.61</b>	<b>11.12</b>	<b>11.66</b>	<b>12.22</b>	<b>12.82</b>	<b>13.44</b>
Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15
Variable Cost (FY 2016-17)	3.90	Rs/kwh																				
Levillised Tariff (Fixed)	2.61	Rs/kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>6.51</b>	<b>Rs/kwh</b>																				

Determination of Accelerated Depreciation for Biomass Gasifier Power Project																					
Depreciation amount	90%																				
Book Depreciation rate	5.28%																				
Tax Depreciation rate	80%																				
Additional Depreciation	20.00%																				
Income Tax (Normal Rates)	33.990%																				
Capital Cost	442.859																				
Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00
Accelerated Depreciation																					
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Deprn.	Rs Lakh	221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00
Tax Benefit	Rs Lakh	71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00
Net Energy generation	MU	3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Per unit benefit	Rs/Unit	2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15
<b>Levillised benefit</b>	<b>0.13</b>	<b>(Rs/kWh)</b>																			

## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	10%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF(Stablization for 6 months)	%	85%	
			PLF(during first year after Stablization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)		592.859	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	442.859	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	310.001	
			Total Equity Amount	Rs Lacs	132.858	
		Debt Component	Loan Amount	Rs Lacs	310.00	
			Moratorium Period	years	0	
			Repayment Period(incld Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	132.86	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years		24.00%	
	Weighted average of ROE		22.00%			
	Discount Rate (equiv. to WACC)		10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	3195.86	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O& M Expemses (2016-17)	O & M Expenses Escalation	Rs Lacs	49.97	
			O & M Expenses Escalation	%	5.72%	
			O& M Expemses (2012-13)	Rs Lacs	40.00	

Determination of Tariff Component: Biomass Gasifier Power Projects																							
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Biomass Cost	Rs Lakh		297.45	312.33	327.94	344.34	361.56	379.64	398.62	418.55	439.48	461.45	484.52	508.75	534.19	560.89	588.94	618.39	649.31	681.77	715.86	751.65	
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77	
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		24.92	26.01	27.16	28.37	29.65	30.99	32.41	33.90	35.47	37.13	39.00	40.84	42.48	44.59	46.81	49.15	51.60	54.18	56.89	59.74	
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>165.19</b>	<b>165.84</b>	<b>166.72</b>	<b>167.82</b>	<b>169.18</b>	<b>170.80</b>	<b>172.69</b>	<b>174.88</b>	<b>177.38</b>	<b>180.20</b>	<b>183.80</b>	<b>187.32</b>	<b>190.54</b>	<b>193.66</b>	<b>196.66</b>	<b>199.54</b>	<b>202.22</b>	<b>204.79</b>	<b>207.27</b>	<b>209.66</b>	<b>211.97</b>
Levillised tariff corresponding to Useful life																							
Per Unit Cost of Generation	Unit	Levillised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Variable COG	Rs/kWh	6.26	4.44	4.66	4.89	5.14	5.40	5.67	5.95	6.25	6.56	6.89	7.23	7.59	7.97	8.37	8.79	9.23	9.69	10.17	10.68	11.22	
O&M expn	Rs/kWh	1.11	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15	
Depreciation	Rs/kWh	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
Int. on term loan	Rs/kWh	0.29	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Int. on working capital	Rs/kWh	0.51	0.37	0.39	0.41	0.42	0.44	0.46	0.48	0.51	0.53	0.55	0.58	0.61	0.63	0.67	0.70	0.73	0.77	0.81	0.85	0.89	
RoE	Rs/kWh	0.42	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.92</b>	<b>6.90</b>	<b>7.14</b>	<b>7.38</b>	<b>7.64</b>	<b>7.92</b>	<b>8.21</b>	<b>8.53</b>	<b>8.86</b>	<b>9.20</b>	<b>9.57</b>	<b>10.05</b>	<b>10.46</b>	<b>10.70</b>	<b>11.21</b>	<b>11.75</b>	<b>12.32</b>	<b>12.92</b>	<b>13.54</b>	<b>14.20</b>	<b>14.89</b>	
Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15	
Variable Cost (FY 2016-17)	4.44	Rs/Kwh																					
Levillised Tariff (Fixed)	2.67	Rs/Kwh																					
<b>Applicable Tariff (FY2016-17)</b>	<b>7.10</b>	<b>Rs/Kwh</b>																					

Determination of Accelerated Depreciation for Biomass Gasifier Power Project																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost	442.859																					
Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	
Book Depreciation	Rs Lakh	11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00	
Accelerated Depreciation																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	
Accelerated Deprn.	Rs Lakh	221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00	
Tax Benefit	Rs Lakh	71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00	
Net Energy generation	MU	3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Per unit benefit	Rs/Unit	2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levillised benefit</b>	<b>0.13</b>	<b>(Rs/kWh)</b>																				

## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	10%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF(Stablization for 6 months)	%	85%	
			PLF(during first year after Stablization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)		592.859	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	442.859	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	310.001	
			Total Equity Amount	Rs Lacs	132.858	
		Debt Component	Loan Amount	Rs Lacs	310.00	
			Moratorium Period	years	0	
			Repayment Period(incld Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	132.86	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years		24.00%	
	Weighted average of ROE		22.00%			
	Discount Rate (equiv. to WACC)		10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges			
			Biomass Stock	Months	4	
6	Fuel Related Assumptions	Biomass	Interest On Working Capital	%	13.26%	
			Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	3268.62	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O& M Expemses (2016-17)	O & M Expenses Escalation	Rs Lacs	49.97	
			O & M Expenses Escalation	%	5.72%	
			O& M Expemses (2012-13)	Rs Lacs	40.00	

Determination of Tariff Component: Biomass Gasifier Power Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		304.23	319.44	335.41	352.18	369.79	388.28	407.69	428.08	449.48	471.96	495.55	520.33	546.35	573.67	602.35	632.47	664.09	697.29	732.16	768.77
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>165.65</b>	<b>166.32</b>	<b>167.22</b>	<b>168.36</b>	<b>169.74</b>	<b>171.38</b>	<b>173.31</b>	<b>175.53</b>	<b>178.05</b>	<b>180.91</b>	<b>189.54</b>	<b>193.11</b>	<b>183.68</b>	<b>191.41</b>	<b>199.56</b>	<b>208.17</b>	<b>217.26</b>	<b>226.85</b>	<b>236.97</b>	<b>247.65</b>
Levillised tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levillised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	<b>6.40</b>	4.54	4.77	5.01	5.26	5.52	5.79	6.08	6.39	6.71	7.04	7.39	7.76	8.15	8.56	8.99	9.44	9.91	10.41	10.93	11.47
O&M expn	Rs/kWh	<b>1.11</b>	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15
Depreciation	Rs/kWh	<b>0.34</b>	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Int. on term loan	Rs/kWh	<b>0.29</b>	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	<b>0.52</b>	0.38	0.40	0.41	0.43	0.45	0.47	0.49	0.52	0.54	0.56	0.59	0.62	0.65	0.68	0.71	0.75	0.78	0.82	0.87	0.91
RcE	Rs/kWh	<b>0.42</b>	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
<b>Total COG</b>	<b>Rs/kWh</b>	<b>9.07</b>	<b>7.01</b>	<b>7.25</b>	<b>7.50</b>	<b>7.77</b>	<b>8.05</b>	<b>8.35</b>	<b>8.67</b>	<b>9.01</b>	<b>9.36</b>	<b>9.74</b>	<b>10.22</b>	<b>10.65</b>	<b>10.89</b>	<b>11.42</b>	<b>11.97</b>	<b>12.54</b>	<b>13.15</b>	<b>13.79</b>	<b>14.46</b>	<b>15.17</b>
Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15
Variable Cost (FY 2016-17)	4.54	Rs/Kwh																				
Levillised Tariff (Fixed)	2.67	Rs/Kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>7.21</b>	<b>Rs/Kwh</b>																				

Determination of Accelerated Depreciation for Biomass Gasifier Power Project																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost	442.859																					
Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	
Book Depreciation	Rs Lakh	11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00	
Accelerated Depreciation																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	
Accelerated Deprn.	Rs Lakh	221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00	
Tax Benefit	Rs Lakh	71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00	
Net Energy generation	MU	3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	
Per unit benefit	Rs/Unit	2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00	
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levillised benefit</b>	<b>0.13</b>	<b>(Rs/kWh)</b>																				



## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	10%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF(Stablization for 6 months)	%	85%	
			PLF(during first year after Stablization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)		592.859	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	442.859	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	310.001	
			Total Equity Amount	Rs Lacs	132.858	
		Debt Component	Loan Amount	Rs Lacs	310.00	
			Moratorium Period	years	0	
			Repayment Period(incld Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	132.86	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years		24.00%	
	Weighted average of ROE		22.00%			
	Discount Rate (equiv. to WACC)		10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	3342.60	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O& M Expemses (2016-17)	O & M Expenses Escalation	Rs Lacs	49.97	
			O & M Expenses Escalation	%	5.72%	
			O& M Expemses (2012-13)	Rs Lacs	40.00	

Determination of Tariff Component: Biomass Gasifier Power Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		311.11	326.67	343.00	360.15	378.16	397.07	416.92	437.77	459.65	482.64	506.77	532.11	558.71	586.65	615.98	646.78	679.12	713.08	748.73	786.17
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>166.12</b>	<b>166.81</b>	<b>167.74</b>	<b>168.90</b>	<b>170.31</b>	<b>171.98</b>	<b>173.93</b>	<b>176.18</b>	<b>178.74</b>	<b>181.63</b>	<b>190.30</b>	<b>193.91</b>	<b>184.52</b>	<b>192.29</b>	<b>200.49</b>	<b>209.14</b>	<b>218.28</b>	<b>227.92</b>	<b>238.09</b>	<b>248.83</b>
Levillised tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levillised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	6.54	4.64	4.87	5.12	5.37	5.64	5.93	6.22	6.53	6.86	7.20	7.56	7.94	8.34	8.75	9.19	9.65	10.13	10.64	11.17	11.73
O&M expn	Rs/kWh	1.11	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15
Depreciation	Rs/kWh	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Int. on term loan	Rs/kWh	0.29	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.53	0.39	0.40	0.42	0.44	0.46	0.48	0.50	0.53	0.55	0.58	0.60	0.63	0.66	0.69	0.73	0.76	0.80	0.84	0.88	0.93
RcE	Rs/kWh	0.42	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
<b>Total COG</b>	<b>Rs/kWh</b>	<b>9.23</b>	<b>7.12</b>	<b>7.36</b>	<b>7.62</b>	<b>7.89</b>	<b>8.18</b>	<b>8.49</b>	<b>8.82</b>	<b>9.16</b>	<b>9.53</b>	<b>9.91</b>	<b>10.40</b>	<b>10.83</b>	<b>11.09</b>	<b>11.62</b>	<b>12.18</b>	<b>12.77</b>	<b>13.39</b>	<b>14.04</b>	<b>14.73</b>	<b>15.44</b>
Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15
Variable Cost (FY 2016-17)	4.64	Rs/Kwh																				
Levillised Tariff (Fixed)	2.68	Rs/Kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>7.33</b>	<b>Rs/Kwh</b>																				

Determination of Accelerated Depreciation for Biomass Gasifier Power Project																					
Depreciation amount	90%																				
Book Depreciation rate	5.28%																				
Tax Depreciation rate	80%																				
Additional Depreciation	20.00%																				
Income Tax (Normal Rates)	33.990%																				
Capital Cost	442.859																				
Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00
Accelerated Depreciation																					
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Deprn.	Rs Lakh	221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00
Tax Benefit	Rs Lakh	71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00
Net Energy generation	MU	3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Per unit benefit	Rs/Unit	2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15
<b>Levillised benefit</b>	<b>0.13</b>	<b>(Rs/kWh)</b>																			

## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	10%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF(Stablization for 6 months)	%	85%	
			PLF(during first year after Stablization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)		592.859	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	442.859	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	310.001	
			Total Equity Amount	Rs Lacs	132.858	
			Debt Component	Loan Amount	Rs Lacs	310.00
				Moratorium Period	years	0
				Repayment Period(incld Moratorium)	years	12
				Interest Rate	%	12.76%
			Equity Component	Equity amount	Rs Lacs	132.86
				Return on Equity for first 10 years	% p.a	20.00%
				Return on Equity after 10 years		24.00%
Weighted average of ROE		22.00%				
Discount Rate (equiv. to WACC)		10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	2789.54	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O& M Expemses (2016-17)	O & M Expenses Escalation	Rs Lacs	49.97	
			O & M Expenses Escalation	%	5.72%	
			O& M Expemses (2012-13)	Rs Lacs	40.00	

Determination of Tariff Component: Biomass Gasifier Power Projects																							
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Biomass Cost	Rs Lakh		259.64	272.62	286.25	300.56	315.59	331.37	347.94	365.33	383.60	402.78	422.92	444.07	466.27	489.58	514.06	539.77	566.75	595.09	624.85	656.09	
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77	
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		22.36	23.32	24.33	25.40	26.53	27.72	28.97	30.29	31.69	33.15	34.82	36.45	37.87	39.75	41.73	43.81	46.00	48.30	50.72	53.26	
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	31.89	31.89	31.89	31.89	31.89	31.89	31.89	31.89	31.89	31.89	31.89
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>162.63</b>	<b>163.15</b>	<b>163.89</b>	<b>164.86</b>	<b>166.06</b>	<b>167.53</b>	<b>169.26</b>	<b>171.27</b>	<b>173.59</b>	<b>176.22</b>	<b>184.62</b>	<b>187.94</b>	<b>178.25</b>	<b>185.71</b>	<b>193.58</b>	<b>201.89</b>	<b>210.66</b>	<b>219.92</b>	<b>229.69</b>	<b>240.01</b>	
Levallised tariff corresponding to Useful life																							
Per Unit Cost of Generation	Unit	Levallised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Variable COG	Rs/kWh	5.46	3.87	4.07	4.27	4.49	4.71	4.94	5.19	5.45	5.72	6.01	6.31	6.63	6.96	7.31	7.67	8.05	8.46	8.88	9.32	9.79	
O&M expn	Rs/kWh	1.11	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15	
Depreciation	Rs/kWh	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
Int. on term loan	Rs/kWh	0.29	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Int. on working capital	Rs/kWh	0.45	0.33	0.35	0.36	0.38	0.40	0.41	0.43	0.45	0.47	0.49	0.52	0.54	0.57	0.59	0.62	0.65	0.69	0.72	0.76	0.79	
RcE	Rs/kWh	0.42	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.07</b>	<b>6.30</b>	<b>6.50</b>	<b>6.72</b>	<b>6.95</b>	<b>7.19</b>	<b>7.44</b>	<b>7.72</b>	<b>8.01</b>	<b>8.31</b>	<b>8.64</b>	<b>9.07</b>	<b>9.43</b>	<b>9.62</b>	<b>10.08</b>	<b>10.56</b>	<b>11.07</b>	<b>11.60</b>	<b>12.16</b>	<b>12.75</b>	<b>13.37</b>	
Levallised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15	
Variable Cost (FY 2016-17)	3.87	Rs/Kwh																					
Levallised Tariff (Fixed)	2.61	Rs/Kwh																					
<b>Applicable Tariff (FY2016-17)</b>	<b>6.49</b>	<b>Rs/Kwh</b>																					

Determination of Accelerated Depreciation for Biomass Gasifier Power Project																					
Depreciation amount	90%																				
Book Depreciation rate	5.28%																				
Tax Depreciation rate	80%																				
Additional Depreciation	20.00%																				
Income Tax (Normal Rates)	33.990%																				
Capital Cost	442.859																				
Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00
Accelerated Depreciation																					
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Deprn.	Rs Lakh	221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00
Tax Benefit	Rs Lakh	71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00
Net Energy generation	MU	3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Per unit benefit	Rs/Unit	2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15
<b>Levallised benefit</b>	<b>0.13</b>	<b>(Rs/kWh)</b>																			

## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	10%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF(Stablization for 6 months)	%	85%	
			PLF(during first year after Stablization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)		592.859	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	442.859	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	310.001	
			Total Equity Amount	Rs Lacs	132.858	
		Debt Component	Loan Amount	Rs Lacs	310.00	
			Moratorium Period	years	0	
			Repayment Period(incld Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	132.86	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years		24.00%	
	Weighted average of ROE		22.00%			
	Discount Rate (equiv. to WACC)		10.70%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	2761.64	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O& M Expemses (2016-17)	O & M Expenses Escalation	Rs Lacs	49.97	
			O & M Expenses Escalation	%	5.72%	
			O& M Expemses (2012-13)	Rs Lacs	40.00	

Determination of Tariff Component: Biomass Gasifier Power Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		257.04	269.89	283.39	297.56	312.43	328.06	344.46	361.68	379.76	398.75	418.69	439.63	461.61	484.69	508.92	534.37	561.09	589.14	618.60	649.53
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		22.18	23.13	24.14	25.20	26.31	27.49	28.74	30.04	31.43	32.88	34.53	36.15	37.56	39.42	41.39	43.45	45.62	47.90	50.29	52.81
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>162.45</b>	<b>162.96</b>	<b>163.69</b>	<b>164.65</b>	<b>165.85</b>	<b>167.30</b>	<b>169.02</b>	<b>171.03</b>	<b>173.33</b>	<b>175.95</b>	<b>184.33</b>	<b>187.64</b>	<b>177.94</b>	<b>185.38</b>	<b>193.23</b>	<b>201.52</b>	<b>210.27</b>	<b>219.51</b>	<b>229.27</b>	<b>239.56</b>
Levallised tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levallised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	5.41	3.84	4.03	4.23	4.44	4.66	4.90	5.14	5.40	5.67	5.95	6.25	6.56	6.89	7.23	7.59	7.97	8.37	8.79	9.23	9.69
O&M expn	Rs/kWh	1.11	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15
Depreciation	Rs/kWh	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Int. on term loan	Rs/kWh	0.29	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.45	0.33	0.35	0.36	0.38	0.39	0.41	0.43	0.45	0.47	0.49	0.52	0.54	0.56	0.59	0.62	0.65	0.68	0.71	0.75	0.79
RcE	Rs/kWh	0.42	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.01</b>	<b>6.26</b>	<b>6.46</b>	<b>6.67</b>	<b>6.90</b>	<b>7.14</b>	<b>7.39</b>	<b>7.66</b>	<b>7.95</b>	<b>8.25</b>	<b>8.58</b>	<b>9.00</b>	<b>9.36</b>	<b>9.54</b>	<b>10.00</b>	<b>10.48</b>	<b>10.98</b>	<b>11.51</b>	<b>12.07</b>	<b>12.65</b>	<b>13.27</b>
Levallised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15
Variable Cost (FY 2016-17)	3.84	Rs/kwh																				
Levallised Tariff (Fixed)	2.61	Rs/kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>6.44</b>	<b>Rs/kwh</b>																				

Determination of Accelerated Depreciation for Biomass Gasifier Power Project																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost	442.859																					
Years	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%		2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh		11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00
Accelerated Depreciation																						
Opening	%		100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%		50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%		50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Deprn.	Rs Lakh		221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh		209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00
Tax Benefit	Rs Lakh		71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00
Net Energy generation	MU		3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Per unit benefit	Rs/Unit		2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00
Discounting Factor			1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15
<b>Levallised benefit</b>	<b>0.13</b>	<b>(Rs/kWh)</b>																				

Select State

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## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	10%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF(Stablization for 6 months)	%	85%	
			PLF(during first year after Stablization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
2	Project Cost		Power Plant Cost (before subsidy)		592.859	
		Capital Cost/MW	Power Plant Cost (after subsidy)	Rs Lacs/MW	442.859	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	310.001	
			Total Equity Amount	Rs Lacs	132.858	
			Debt Component	Loan Amount	Rs Lacs	310.00
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	12.76%
			Equity Component	Equity amount	Rs Lacs	132.86
				Return on Equity for first 10 years	% p.a	20.00%
				Return on Equity after 10 years		24.00%
Weighted average of ROE		22.00%				
Discount Rate (equiv. to WACC)		10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	2856.25	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O& M Expemses (2016-17)	O & M Expenses Escalation	%	5.72%	
			O& M Expemses (2012-13)	Rs Lacs	40.00	
			O & M Expemses (2016-17)	Rs Lacs	49.97	

**Determination of Tariff Component: Biomass Gasifier Power Projects**

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		265.85	279.14	293.09	307.75	323.14	339.29	356.26	374.07	392.77	412.41	433.03	454.69	477.42	501.29	526.36	552.67	580.31	609.32	639.79	671.78
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		22.78	23.76	24.80	25.89	27.04	28.25	29.54	30.88	32.31	33.81	35.51	37.17	38.63	40.55	42.57	44.69	46.92	49.27	51.73	54.32
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>163.05</b>	<b>163.59</b>	<b>164.35</b>	<b>165.34</b>	<b>166.57</b>	<b>168.06</b>	<b>169.82</b>	<b>171.87</b>	<b>174.21</b>	<b>176.87</b>	<b>185.30</b>	<b>188.66</b>	<b>179.01</b>	<b>186.50</b>	<b>194.41</b>	<b>202.76</b>	<b>211.58</b>	<b>220.88</b>	<b>230.70</b>	<b>241.07</b>

**Levallised tariff corresponding to Useful life**

Per Unit Cost of Generation	Unit	Levallised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	5.59	3.97	4.17	4.37	4.59	4.82	5.06	5.32	5.58	5.86	6.15	6.46	6.78	7.12	7.48	7.85	8.25	8.66	9.09	9.55	10.02
O&M expn	Rs/kWh	1.11	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15
Depreciation	Rs/kWh	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Int. on term loan	Rs/kWh	0.29	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.46	0.34	0.35	0.37	0.39	0.40	0.42	0.44	0.46	0.48	0.50	0.53	0.55	0.58	0.61	0.64	0.67	0.70	0.74	0.77	0.81
RcE	Rs/kWh	0.42	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.21</b>	<b>6.40</b>	<b>6.61</b>	<b>6.83</b>	<b>7.06</b>	<b>7.31</b>	<b>7.57</b>	<b>7.85</b>	<b>8.15</b>	<b>8.46</b>	<b>8.79</b>	<b>9.23</b>	<b>9.60</b>	<b>9.80</b>	<b>10.26</b>	<b>10.76</b>	<b>11.27</b>	<b>11.82</b>	<b>12.39</b>	<b>12.99</b>	<b>13.62</b>

Levallised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15
Variable Cost (FY 2016-17)	3.97	Rs/kwh																				
Levallised Tariff (Fixed)	2.62	Rs/kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>6.59</b>	<b>Rs/kwh</b>																				

**Determination of Accelerated Depreciation for Biomass Gasifier Power Project**

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Additional Depreciation	20.00%
Income Tax (Normal Rates)	33.990%
Capital Cost	442.859

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00

**Accelerated Depreciation**

	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Accelerated Deprn.	Rs Lakh	221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00
Tax Benefit	Rs Lakh	71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00
Net Energy generation	MU	3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
Per unit benefit	Rs/Unit	2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15
<b>Levallised benefit</b>	<b>0.13</b>	<b>(Rs/kWh)</b>																			



Select State

Others

## Assumption for Biomass Gasifier Power Project Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	10%	
			Auxillary Consumption after stabilisation	%	10%	
			PLF(Stablization for 6 months)	%	85%	
			PLF(during first year after Stablization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
2	Project Cost		Power Plant Cost (before subsidy)		592.859	
		Capital Cost/MW	Power Plant Cost (after subsidy)	Rs Lacs/MW	442.859	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	310.001	
			Total Equity Amount	Rs Lacs	132.858	
			Debt Component	Loan Amount	Rs Lacs	310.00
				Moratorium Period	years	0
				Repayment Period(incld Moratorium)	years	12
				Interest Rate	%	12.76%
			Equity Component	Equity amount	Rs Lacs	132.86
				Return on Equity for first 10 years	% p.a	20.00%
Return on Equity after 10 years		24.00%				
Weighted average of ROE		22.00%				
Discount Rate (equiv. to WACC)		10.70%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			For Variable Charges	Biomass Stock	Months	4
				Interest On Working Capital	%	13.26%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	3003.01	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	O& M Expemses (2016-17)	O & M Expenses Escalation	Rs Lacs	49.97	
			O & M Expenses Escalation	%	5.72%	
			O& M Expemses (2012-13)	Rs Lacs	40.00	

Determination of Tariff Component: Biomass Gasifier Power Projects																							
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Gross Generation	MU		7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	
Auxiliary Consumption	MU		0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	
Net Generation	MU		6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Biomass Cost	Rs Lakh		279.51	293.48	308.15	323.56	339.74	356.73	374.56	393.29	412.96	433.60	455.28	478.05	501.95	527.05	553.40	581.07	610.13	640.63	672.66	706.30	
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77	
Depreciation	Rs Lakh		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	
Interest on term loan	Rs Lakh		37.91	34.62	31.32	28.02	24.73	21.43	18.13	14.84	11.54	8.24	4.95	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		23.70	24.73	25.82	26.96	28.17	29.44	30.78	32.19	33.68	35.24	37.01	38.75	40.29	42.30	44.40	46.62	48.94	51.39	53.96	56.66	
Return on Equity	Rs Lakh		26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	26.57	
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>163.97</b>	<b>164.56</b>	<b>165.37</b>	<b>166.41</b>	<b>167.70</b>	<b>169.25</b>	<b>171.06</b>	<b>173.17</b>	<b>175.58</b>	<b>178.31</b>	<b>186.81</b>	<b>190.24</b>	<b>180.67</b>	<b>188.25</b>	<b>196.25</b>	<b>204.69</b>	<b>213.60</b>	<b>223.00</b>	<b>232.93</b>	<b>243.41</b>	
Levillised tariff corresponding to Useful life																							
Per Unit Cost of Generation	Unit	Levillised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Variable COG	Rs/kWh	5.88	4.17	4.38	4.60	4.83	5.07	5.32	5.59	5.87	6.16	6.47	6.79	7.13	7.49	7.86	8.26	8.67	9.10	9.56	10.04	10.54	
O&M expn	Rs/kWh	1.11	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.37	1.45	1.54	1.62	1.72	1.82	1.92	2.03	2.15	
Depreciation	Rs/kWh	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
Int. on term loan	Rs/kWh	0.29	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Int. on working capital	Rs/kWh	0.48	0.35	0.37	0.39	0.40	0.42	0.44	0.46	0.48	0.50	0.53	0.55	0.58	0.60	0.63	0.66	0.70	0.73	0.77	0.81	0.85	
RcE	Rs/kWh	0.42	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
<b>Total COG</b>	<b>Rs/kWh</b>	<b>8.52</b>	<b>6.62</b>	<b>6.84</b>	<b>7.07</b>	<b>7.31</b>	<b>7.57</b>	<b>7.85</b>	<b>8.14</b>	<b>8.45</b>	<b>8.78</b>	<b>9.13</b>	<b>9.58</b>	<b>9.97</b>	<b>10.19</b>	<b>10.67</b>	<b>11.19</b>	<b>11.73</b>	<b>12.29</b>	<b>12.89</b>	<b>13.51</b>	<b>14.17</b>	
Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Discount Factor			1	0.90	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	0.36	0.33	0.30	0.27	0.24	0.22	0.20	0.18	0.16	0.15	
Variable Cost (FY 2016-17)	4.17 Rs/Kwh																						
Levillised Tariff (Fixed)	2.64 Rs/Kwh																						
<b>Applicable Tariff (FY2016-17)</b>	<b>6.81 Rs/Kwh</b>																						

Determination of Accelerated Depreciation for Biomass Gasifier Power Project																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost	442.859																					
Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	
Book Depreciation	Rs Lakh	11.69	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	23.38	12.75	0.00	0.00	
Accelerated Depreciation																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	
Accelerated Deprn.	Rs Lakh	221.43	199.29	17.71	3.54	0.71	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	209.74	175.90	-5.67	-19.84	-22.67	-23.24	-23.35	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-23.38	-12.75	0.00	0.00	
Tax Benefit	Rs Lakh	71.29	59.79	-1.93	-6.74	-7.71	-7.90	-7.94	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-7.95	-4.34	0.00	0.00	
Net Energy generation	MU	3.35	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	
Per unit benefit	Rs/Unit	2.13	0.89	-0.03	-0.10	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.06	0.00	0.00	
Discounting Factor		1.00	0.95	0.86	0.78	0.70	0.63	0.57	0.52	0.47	0.42	0.38	0.34	0.31	0.28	0.25	0.23	0.21	0.19	0.17	0.15	
<b>Levillised benefit</b>	<b>0.13 (Rs/kWh)</b>																					

## Biogas Based Power Projects

Assumption for Biogas Based Power Project Parameters						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisation	%	12%	
			PLF	%	90%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)	Rs Lacs/MW	1185.764	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	885.764	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	620.035	
			Total Equity Amount	Rs Lacs	265.729	
		Debt Component	Loan Amount	Rs Lacs	620.04	
			Moratorium Period	years	0	
			Repayment Period(incl'd Moratorium)	years	12	
			Interest Rate	%	12.76%	
		Equity Component	Equity amount	Rs Lacs	265.73	
			Return on Equity for first 10 years	% p.a	20.00%	
			Return on Equity after 10 years	%	24.00%	
			Weighted average of ROE	%	22.00%	
			Discount Rate (equiv. to WACC)	%	10.70%	
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.990%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
5	Working Capital	For Fixed Charges				
		O&M Charges	(% of O&M exepenses)	Months	1	
		Maintenance Spare			15%	
		Receivables for Debtors		Months	2	
		For Variable Charges				
6	Fuel Related Assumptions	Biomass	Biomass Stock	Months	4	
			Interest On Working Capital	%	13.26%	
			Fuel Price	Rs/T	1200.72	
			Specific Fuel Consumption	kg/kWh	3	
			Substrates Price Escalation Factor			5.00%
7	Operation & Maintenance	O&M Expenses (2016-17)		Rs Lacs	49.97	
		Total O & M Expenses Escalation		%	5.72%	
		O&M Expenses (2012-13)		Rs Lacs	40.00	

Determination of Tariff Component: Biogas Based Power Projects																						
Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88	7.88
Auxiliary Consumption	MU		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Net Generation	MU		6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		283.99	298.19	313.10	328.76	345.20	362.46	380.58	399.61	419.59	440.57	462.60	485.73	510.01	535.51	562.29	590.40	619.92	650.92	683.47	717.64
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		49.97	52.83	55.85	59.04	62.42	65.99	69.76	73.75	77.97	82.43	87.15	92.13	97.40	102.97	108.87	115.09	121.68	128.64	135.99	143.77
Depreciation	Rs Lakh		51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64	51.64
Interest on term loan	Rs Lakh		75.83	69.24	62.64	56.05	49.45	42.86	36.27	29.67	23.08	16.48	9.89	3.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		26.05	27.02	28.04	29.13	30.28	31.49	32.78	34.14	35.57	37.09	38.93	40.62	41.81	43.84	45.98	48.22	50.58	53.06	55.66	58.40
Return on Equity	Rs Lakh		53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15	53.15
<b>Total Fixed Cost</b>	<b>Rs Lakh</b>		<b>256.63</b>	<b>253.87</b>	<b>251.32</b>	<b>249.01</b>	<b>246.94</b>	<b>245.13</b>	<b>243.59</b>	<b>242.35</b>	<b>241.41</b>	<b>240.79</b>	<b>251.38</b>	<b>251.46</b>	<b>225.18</b>	<b>232.78</b>	<b>240.80</b>	<b>249.28</b>	<b>258.22</b>	<b>267.66</b>	<b>277.62</b>	<b>288.14</b>
Levelling Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.903	0.816	0.737	0.666	0.602	0.543	0.491	0.444	0.401	0.362	0.327	0.295	0.267	0.241	0.218	0.197	0.178	0.161	0.145
Variable Cost (FY2016-17)	4.09	Rs/Kwh																				
Levelling Tariff (Fixed)	3.59	Rs/Kwh																				
<b>Applicable Tariff (FY2016-17)</b>	<b>7.68</b>	<b>Rs/Kwh</b>																				

Determination of Accelerated Depreciation for Biogas based Power Project																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	80%																					
Additional depreciation	20.00%																					
Income Tax (Normal Rates)	33.990%																					
Capital Cost	885.764																					
Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	23.38	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	46.77	25.51	0.00	0.00
Accelerated Depreciation																						
Opening	%	100.00%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%
Allowed during the year	%	50%	45.00%	4.00%	0.80%	0.16%	0.03%	0.01%	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%	0.00%
Closing	%	50.00%	5.00%	1.00%	0.20%	0.04%	0.01%	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%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	442.88	398.59	35.43	7.09	1.42	0.28	0.06	0.01	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
Net Depreciation Benefit	Rs Lakh	419.50	351.83	-11.34	-39.68	-45.35	-46.48	-46.71	-46.76	-46.77	-46.77	-46.77	-46.77	-46.77	-46.77	-46.77	-46.77	-46.77	-46.77	-25.51	0.00	0.00
Tax Benefit	Rs Lakh	142.59	119.59	-3.85	-13.49	-15.41	-15.80	-15.88	-15.89	-15.90	-15.90	-15.90	-15.90	-15.90	-15.90	-15.90	-15.90	-15.90	-15.90	-8.67	0.00	0.00
Net Energy generation	MU	3.47	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94	6.94
Per unit benefit	Rs/Unit	4.11	1.72	-0.06	-0.19	-0.22	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.23	-0.12	0.00
Discounting Factor		3.60	3.42	3.08	2.78	2.51	2.26	2.04	1.83	1.65	1.49	1.34	1.21	1.09	0.98	0.89	0.80	0.72	0.65	0.59	0.53	
Tax Benefit Levellised	17.05																					
Electricity Generation (Levellised)	6.56																					
<b>Levellised benefit</b>	<b>0.26</b>	<b>(Rs/kWh)</b>																				