

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 243/SM/2012 (Suo-Motu)

**Coram: 1. Dr. Pramod Deo, Chairperson
2. Shri S.Jayaraman, Member
3. Shri V. S. Verma, Member
4. Shri M. Deena Dayalan, Member**

Date of hearing: 8th January, 2013

Date of Order: 28th February, 2013

IN THE MATTER OF

Determination of generic levelled generation tariff for the FY2013-14 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”), 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);
 - (f) Solar Thermal Power Projects;
 - (g) Biomass Gasifier based Power Projects; and
 - (h) Biogas based Power Project.

2. 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.
3. 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 least six months in advance at the beginning of each year of the Control period for renewable energy technologies for which norms have been specified under the Regulations”. The Commission has notified the RE Tariff Regulations on 06.02.2012 and subsequently issued a generic *suo-motu* tariff order, which was applicable for the renewable energy projects to be commissioned during first year of the control period (i.e. FY2012-13). The Commission, in due discharge of the mandate under Regulation 8(1) of the RE Tariff Regulations has determined the generic tariff of the RE projects for the second year of control period (i.e. FY 2013-14) through this order.
4. The Commission issued Order proposing “Determination of generic levellised generation tariff for the FY2013-14 under Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012.” (Petition No. 243/SM/2012 dated 25th October, 2012 for inviting comments/suggestions/objections from the stakeholders.
5. In response to the same, written comments /suggestions have been received from following stakeholders:

Sr.	Name of stakeholder submitted comments
No.	
1	Co-generation Association of India
2	A2Z Maintenance & Engineering Services Limited
3	Gujarat Urja Vikas Nigam Limited
4	ReGen Powertech Pvt. Ltd.
5	Indian Wind Turbine Manufacturers Association (IWTMA)
6	Kenersys India Pvt. Limited
7	Indian Wind Power Association (IWPA)
8	ReNew Power Ventures Private Limited
9	ILFS Renewable energy Limited
10	Indian Biomass Power Association (IBPA)
11	Orient Green Power Company Limited
12	Orange Powergen Pvt. Limited
13	Punjab Biomass Power Limited
14	PTC-BERMACO Green Energy System Limited
15	Punjab Renewable Energy System Private Limited
16	Association of Power Producers
17	Moser Bare
18	Sun Edison Energy India Private Limited,
19	juwi India Renewable Energies Pvt. Limited
20	Aditya Birla Management Corporation Limited
21	PTC India Limited

6. Subsequently, a public hearing was held on 8th January, 2013 and following stakeholders expressed their views/suggestions/comments in person:

- 1 ILFS Renewable energy Limited
- 2 National Thermal Power Corporation
- 3 Moser Bare

7. The commission has analysed the views/comments/suggestions of the stakeholders and the Commission's decisions are as below:

A. Capital Cost Indexation for Wind Projects

Comments:

The monthly wholesale price Index for Steel and Electrical Machinery data now available upto month of October 2012 may be taken for calculation of capital cost. **(ReGen Powertech Pvt. Ltd.)**

The wholesale price Index numbers for the Electrical Machinery index, for the months of June and July, are incorrectly captured in the tariff order as 131.000 and 132.700, respectively. Instead, the same should be 132.200 and 133.000 respectively for the month of June, 2012 and July 2012. The Capital Cost for the Year 2013-14 shall become Rs 596.37 Lakh /MW instead Rs 595.99 Lakh / MW. **(Association of Power Producers)**

Analysis and Decision

Comments have been noted and latest data available on monthly wholesale price Index for Electrical Machinery and Steel from the site of Office of Economic Adviser are considered for capital cost indexation for various renewable energy technologies.

B. Fuel Price Indexation Mechanism

The monthly wholesale price Index for High Speed Diesel (HSD) data now available upto month of October 2012 may be taken for calculation of fuel price. **(A2Z Maintenance & Engineering Services Limited)**

Analysis and Decision

Comments have been noted and latest data available on monthly wholesale price Index for High Speed Diesel (HSD) from the site of Office of Economic Adviser are considered for fuel price indexation.

C. Wind Energy Tariff

Comments:

There are no comments to offer and we are in agreement with the proposed order. **(Indian Wind Turbine Manufacturers Association)**

Analysis and Decision

Comment has been noted.

D. Accelerated Depreciation for Wind Energy projects

Comments:

Commission should clarify that if a Wind Energy project is coming up under a new SPV and if the company is availing 35% (15% PLUS additional 20%) depreciation in first year, which tariff would be applicable? **(Association of Power Producers)**

Analysis and Decision

It is clarified that if a Wind Energy project is availing 35% (15% PLUS additional 20%) depreciation in first year, the tariff determined with depreciation benefit shall be applicable.

E. Following comments/suggestions received from stakeholders on normative parameters specified in the re tariff regulations-2012. The review of the same is not the subject matter of present regulatory process which has been initiated for determination of generic tariff for FY 2013-14.

a. Control Period

Commission may consider the Control period of 2 years instead of 5 years.
(Gujarat Urja Vikas Nigam limited)

b. Tariff Period

Commission may consider the Tariff Period as useful life for Wind Power Project and Small Hydel Projects above 5 MW. **(Gujarat Urja Vikas Nigam limited)**

c. Applicability of Tariff

Size of the wind energy projects are increasing and in the range of 50 MW to 150 MW. It takes 18 to 20 months to develop projects of this size, right from inception to commissioning. Wind projects should be given 18-20 months for implementation hence the tariff should be applicable for next two financial years i.e. FY 13-14 and FY 14-15. **(Association of Power Producers)**

d. Interest Rate on Loan

On the basis of our hands on experience, it is difficult to get the loan from banks at the rate 13%. In our opinion interest rate of 13.5% should be considered while determining the tariff. **(Sun Edison Energy India Private Limited, juwi India Renewable Energies Pvt. Limited)**

e. Working Capital for Biomass power plant, Non fossil fuel based cogeneration power plant, Biomass Gasifier and Biogas based power projects:

Suggested to consider one (1) month fuel stock as working capital requirement as against four (4) months considered in the RE Tariff Regulations. **(Gujarat Urja Vikas Nigam limited)**

f. Interest on working Capital

For the purpose of working capital requirement, receivable equivalent to four months of energy charges for sale of electricity be assumed as the generator has been receiving money after electricity sold after a considerable delay. **(Orient Green Power Company Limited)**

Draft Order has proposed an interest rate of the 13% for working capital purpose. In our opinion interest on working capital should be 14% should be considered while determining the tariff. **(Sun Edison Energy India Private Limited, juwi India Renewable Energies Pvt. Limited)**

g. Discount factor

Requested to correct the discount factor from 10.62% to yearly Discount factor using Pre-tax Cost of Debt and make corresponding corrections in the tariff determined for renewable energy sources of energy. **(Moser bare)**

h. State Transmission Charges and Losses

While solar projects are exempted from Central Transmission Charges & losses, States continue to levy State transmission charges and losses. Since majority of renewable projects may not be in vicinity of CTU connectivity, CERC may recommend to States to withdraw STU Charges or the same should be reimbursable by the Procurer under the PPA. **(Association of Power Producers)**

i. Capacity Utilization Factor (CUF) for Solar PV

Commission should consider the CUF taking into account the radiation in all the states. 19% CUF presupposes that all plants will be in either Rajasthan or Gujarat. **(Aditya Birla management Corporation Limited)**

Suggested to notify different solar zones and CUF as per solar resource availability and hence determine the tariff based on solar zones. **(First Solar Power India Pvt. Ltd.)**

Commission should introduce zones (4-5) in solar CUF benchmarking based on solar radiation levels on the lines of wind zones based on wind power density. Procurement through credible traders should also be encouraged. **(PTC India Limited)**

j. Capacity Utilization Factor (CUF) for Solar Thermal projects

Capacity Utilization Factor (CUF) of 20% instead of 23% should be considered for solar thermal projects as the drop in DNI experienced by all the developers. Alternatively, ROE to be suitably increased. **(Association of Power Producers)**

k. Capacity Utilization Factor (CUF) for wind power projects

Regulation should be amended corresponding to WPD at 50 meter level and only then tariff be determined based on Wind power density (WPD) at 50 meter only instead of 80 meter as the height of the most of the wind mast putup by CWEAT is in the range of 20-30 meters. **(Kenersys India Pvt. Limited, ReNew Power Ventures Private Limited, Association of Power Producers)**

For Wind, CUF should be considered at 50 meter hub height instead of 80 meter **(Association of Power Producers)**

l. O & M Expenses for Wind Energy projects

Due to increasing cost of spares, consumables, salary etc and also introduction of service tax O& M charges should be fixed at Rs. 11 Lakh/MW instead of ₹ 9.51 Lakh/MW. **(Orient Green Power Company Limited)**

Commission should consider O&M expenses at ₹12 lakhs/MW instead of ₹ 9.51 lakhs/MW. **(Association of Power Producers)**

m. O & M Expenses for Solar Thermal projects

Commission should consider O&M expenses at ₹18 lakhs/MW instead of ₹ 15.86 lakhs/MW. **(Association of Power Producers)**

n. Capital Cost norm for Wind Energy Projects

Capital cost for wind energy projects should be considered around ₹ 5.50 Crore/ MW for FY2013-14 in light of the fact of the declining market trend. **(Gujarat Urja Vikas Nigam limited)**

Capital Cost should be fixed at ₹ 5.50 Crore/ MW as the land and steel cost have gone up phenomenally. **(Orient Green Power Company Limited)**

o. Capital Cost norm for Biomass power plant

Capital cost norms for biomass power plant and non fossil fuel based cogeneration power plant need to be increased upwards as the capital cost of recently commissioned such plants are in the range of ₹ 5.5 crore/MW - ` 6.5 crore/MW. Capital cost norms for biomass power projects are quite high mainly due to deployment of high pressure boiler (60 kg/cm² and above), biomass collection / compaction / shredding equipment, air cooled condensers and RO plants. **(Co-generation Association of India)**

Capital cost should be considered at ₹ 6 Crore/MW as the actual cost of setting up biomass project is quite high rather than ₹ 4.63 Crore/MW.

p. Capital Cost norm for non fossil fuel based cogeneration power plant

Capital cost norms for non fossil fuel based cogeneration power projects are quite high mainly due to deployment of high pressure boiler (87 kg/cm² and above), air cooled condensers, RO plants, biomass balers/tractors/conveyors/shredders for increasing off season operating days etc. It has been further suggested that the SERCs need to adopt CERC determined tariffs with immediate effect without undertaking duplicate tariff determination process. **(Co-generation Association of India)**

q. Wind Energy projects

IWPA suggested review various normative parameters as specified in the RE Tariff Regulations -2012 such as: Useful Life, Discount Factor, Control Period, Tariff period, Tariff design, Debt: Equity ratio, Loan Tenure, Interest rate. **(IWPA)**

r. Biomass Projects

GUVNL suggested review of the various normative parameters as specified in the RE Tariff Regulations -2012 such as: Usage of fossil fuel, Interest rate for Loan, Interest rate for Working Capital, Return on Equity, O & M expenses, Station Heat Rate of Biomass plant, Cross calorific value of Biomass fuel, Capacity Utilization Factor (CUF) of wind and solar projects, CDM benefit sharing. **(Gujarat Urja Vikas Nigam limited)**

Review of various normative parameters as specified in the RE Tariff Regulations -2012 such as : Base Capital Cost, Interest on Loan, Interest on Loan, Interest on Working Capital, O &M Expenses, Station Heat Rate, Base Fuel Cost. **(ILFS Renewable energy Limited)**

Review of various normative parameters as specified in the RE Tariff Regulations -2012 such as : Control Period, Capital Cost, Return on Equity, Interest on Loan, Interest on Loan, Interest on Working Capital, O &M Expenses, Capacity Utilisation Factor, Auxiliary Power Consumption, Station Heat Rate, Base Fuel Cost. **(Indian Biomass Power Association)**

Review of various normative parameters as specified in the RE Tariff Regulations -2012 such as : Capital Cost, Calorific value of biomass fuel, and Interest on Working Capital **(Orange Powergen Pvt. Ltd.)**

Review of various normative parameters as specified in the RE Tariff Regulations -2012 such as : Capital Cost, Base Fuel Cost, Plant Load Factor, Auxiliary Power Consumption, Gross Calorific Value, Station Heat Rate, Working Capital, &M Expenses, Loan repayment period, for 100 % paddy straw fired biomass power plant. **(Punjab Biomass Power Limited, PTC-BERMACO Green Energy System Limited, Punjab Renewable Energy System Private Limited)**

s. Bagasse based Cogeneration Projects

ILFS suggested review of various normative parameters as specified in the RE Tariff Regulations -2012 such as: O &M Expenses, Auxiliary Consumption, Station Heat Rate, Base Fuel Cost **(ILFS Renewable energy Limited)**

The generic levellised generation tariff for various renewable energy technologies, for FY 2013-14

8. The generic levellised generation tariff for various renewable energy technologies, for FY 2013-14 are discussed below:

USEFUL LIFE

9. 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:

Renewable Energy Projects	Years
Wind energy	25
Small Hydro	35
Biomass power project with Rankine Cycle technology	20
Non-fossil fuel co-generation	20
Solar PV	25
Solar Thermal	25
Biomass Gasifier	20
Biogas	20

CONTROL PERIOD

10. 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. The first year of the control period is from FY 2012-13. The Proviso 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.

TARIFF PERIOD

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

Renewable Energy Projects	Years
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

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

12. 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, like biomass power projects and non-fossil fuel based cogeneration, single part tariff with two components, fixed cost component and fuel cost component, is to be determined.

TARIFF DESIGN

13. 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

14. 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

15. The discount factor considered for this purpose 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.

16. Interest Rate considered for the loan component (i.e.70%) of Capital Cost is 13.00% (as explained later). For equity component (i.e. 30%) rate of Return on Equity (ROE) considered at Post Tax ROE of 16% considered. The discount factor derived by this method for all technologies is 10.95% $((13.0\% \times 0.70 \times (1 - 32.445\%)) + (16.0\% \times 0.30))$.

CAPITAL COST

17. 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 20012-13, for various RE technologies viz Wind Energy, Small Hydro Power, Biomass Power, Non-Fossil Fuel based Cogeneration, Solar PV, Solar Thermal, Biomass Gasifier and Biogas based power projects.

18. In order to determine the normative capital cost for the remaining years of the control period, the regulations stipulate the indexation mechanism, 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 and Solar Thermal Power Projects shall be reviewed on annual basis. 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 below.

$$CC_{(n)} = P\&M_{(n)} * (1+F_1+F_2+F_3)$$

$$P\&M_{(n)} = P\&M_{(0)} * (1+d_{(n)})$$

$$d_{(n)} = [a * \{(SI_{(n-1)}/SI_{(0)}) - 1\} + b * \{(EI_{(n-1)}/EI_{(0)}) - 1\}] / (a+b)$$

Where,

$CC_{(n)}$ = Capital Cost for n^{th} year

$P\&M_{(n)}$ = Plant and Machinery Cost for n^{th} 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 $(1+F_1+F_2+F_3)$. Factors F_1, F_2, F_3 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)

F_1 = Factor for Land and Civil Works

F_2 = Factor for Erection and Commissioning

F_3 = 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 below,

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)

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

(A) Capital Cost of Wind Energy for FY 2013-14

19. 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.

The Commission under Regulation 24 (2) has specified the normative capital cost for wind energy projects as ₹ 575 Lakh/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 normative capital cost of the Wind energy Projects shall be ₹ 597.718 Lakh/MW for FY 2013-14. The detailed computation of the indexation mechanism and determination of the capital cost for FY 2013-14 thereof, has been enclosed as **Appendix-1** of this Order.

(B) Capital cost of Small Hydro Projects for FY 2013-14

20. 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.

21. 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) (₹ Lakh/ 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

22. In line with the indexation mechanism, specified in Regulation 29 of the RE Tariff Regulations, the normative capital cost for FY 2013-14 for Small Hydro Projects shall be as under,

Region	Project Size	Capital Cost (FY 2013-14) (₹ Lakh/ MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	800.422
	5 MW to 25 MW	727.657
Other States	Below 5 MW	623.706
	5 MW to 25 MW	571.730

The detailed computations of the indexation mechanism and the determination of the capital cost for FY 2013-14 thereof, has been enclosed as **Appendix-2** of this Order.

(C) Capital Cost of Biomass based Power Projects for FY 2013-14

23. Biomass power project for the purpose of these Regulations covers the projects using new plant and machinery based on Rankine cycle technology application using water cooled condenser and biomass fuel sources where use of fossil fuel is limited to the extent of 15% of total fuel consumption on annual basis.

24. The Commission under Regulation 34 has specified the normative capital cost for the biomass power projects based on Rankine cycle technology application using water cooled condenser as ₹ 445 Lakh/MW for FY 2012-13, which shall be linked to the indexation mechanism specified under Regulation 35 of the RE Tariff Regulations. In accordance to the above referred Regulation, the normative capital cost of biomass power projects based on Rankine cycle technology application using water cooled condenser shall be ₹ 463.336 Lakh/MW for FY 2013-14. The detailed calculations of the indexation mechanism and determination of the capital cost for FY 2013-14 thereof, has been enclosed as **Appendix -3** of this Order.

(D) Capital Cost of Non-fossil fuel based Cogeneration Projects for FY 2013-14

25. 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 cogeneration 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.

26. The Commission under Regulation 47 has specified the normative capital cost for the Non-Fossil Fuel Based Cogeneration Projects as ₹ 420 Lakh/MW for FY 2012-13 which shall be linked to the indexation mechanism specified under Regulation 48 of the RE Tariff Regulations. In accordance to the above referred Regulation, the normative capital cost of Non-Fossil Fuel based Cogeneration power projects shall be ₹ 437.306 Lakh/MW for FY 2013-14. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2013-14 thereof, has been enclosed as **Appendix-4** of this Order.

(E) Capital Cost of Solar PV based Power Projects for FY 2013-14

27. Solar Photo Voltaic (PV) power projects which directly convert solar energy into electricity using the 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.
28. The Commission under Regulation 57 had specified the normative capital cost for the Solar PV power projects as ₹ 1000 Lakh/MW for the FY 2012-13.
29. The Commission vides its *suo-motu* Order (Petition No. 242/SM/2012) dated 28th February, 2013, determined the normative capital cost for the Solar PV power projects as ₹ 800.00 Lakh/MW for the FY 2013-14.

(F) Capital Cost of Solar Thermal based Power Projects for FY 2013-14

30. In order to qualify for tariff determination under the RE Tariff Regulations, Solar Thermal Power Project shall be based on concentrated solar power technologies with line focusing or point focusing as may be 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.
31. The Commission under Regulation 61 had specified the normative capital cost for the Solar Thermal power projects as ₹ 1300 Lakh/MW for the FY 2012-13.
32. The Commission vides its *suo-motu* Order (Petition No. 242/SM/2012) dated 28th February, 2013, determined the normative capital cost for the Solar Thermal power projects as ₹ 1200.00 Lakh/MW for the FY 2013-14.

(G) Capital Cost of Biomass Gasifier Power Projects for FY 2013-14

33. The Commission under Regulation 66 has specified the normative capital cost for the Biomass Gasifier power projects based on Rankine cycle shall be ₹ 550.00 Lakh/MW for the FY 2012-13 and after taking into account of capital subsidy of ₹ 150.00 Lakh/MW, net project cost shall be ₹ 400.00 Lakh/MW for the FY 2012-13 which shall be linked to the indexation mechanism specified under Regulation 67 of the RE Tariff Regulations. In accordance to the above referred Regulation, the normative capital cost of Biomass gasifier power projects shall be ₹ 572.663 Lakh/MW for FY 2013-14. After taking into account of capital subsidy of ₹ 150.00 Lakh/MW, net project cost shall be ₹ 422.663 Lakh/MW for the FY 2013-14. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2013-14 thereof, has been enclosed as **Appendix-5** of this Order.

(H) Capital Cost of Biogas based Power Projects for FY 2013-14

34. In order to qualify for tariff determination under the RE Tariff Regulations, grid connected biogas based power projects that uses 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.

35. The Commission under Regulation 76 has specified the normative capital cost for the Biogas based power projects shall be ₹ 1100.00 Lakh/MW for the FY 2012-13 and after taking into account of capital subsidy of ₹ 300.00 Lakh/MW, net project cost shall be ₹ 800.00Lakh/MW for the FY 2012-13 which shall be linked to the indexation mechanism specified under Regulation 77 of the RE Tariff Regulations. In accordance to the above referred Regulation, the normative capital cost of Biogas based power projects shall be ₹ 1145.325 Lakh/MW for FY 2013-14. After taking into account of capital subsidy of ₹

300.00 Lakh/MW, net project cost shall be ₹ 845.325 Lakh/MW for the FY 2013-14. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2013-14 thereof, has been enclosed as **Appendix-6** of this Order.

36. The capital cost for the second year (i.e. FY 2013-14) of the control period in respect of the renewable energy power generating stations is summarized as under:

Renewable Energy Projects	Capital Cost Norm for FY 2013-14 (₹ Lakh/MW)
(1) Wind Energy Projects	597.718
(2) Small Hydro Projects	
(a) Himachal Pradesh, Uttarakhand and North Eastern States (less than 5 MW)	800.422
(b) Himachal Pradesh, Uttarakhand and North Eastern States (5MW to 25 MW)	727.657
(c) Other States (below 5 MW)	623.706
(d) Other States (5MW to 25 MW)	571.730
(3) Biomass Power Projects	463.336
(4) Non-fossil fuel based co-generation Power Projects	437.306
(5) Solar PV Power Projects	800.00
(6) Solar Thermal Power Projects	1200.00
(7) Biomass Gasifier Power Projects	422.663
(8) Biogas Power Projects	845.325

DEBT-EQUITY RATIO

37. 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.

38. 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:

Renewable Energy Projects	Debt (₹ Lakh)	Equity (₹ Lakh)
(1) Wind Energy (for all zones)	418.403	179.315
(2) Small Hydro		
(a) Himachal Pradesh, Uttarakhand and North Eastern States (below 5 MW)	560.295	240.127
(b) Himachal Pradesh, Uttarakhand and North Eastern States (5 MW to 25 MW)	509.360	218.297
(c) Other States (below 5 MW)	436.594	187.112
(d) Other States (5MW to 25 MW)	400.211	171.519
(3) Biomass	324.335	139.001
(4) Non-fossil fuel co-generation	306.114	131.192
(5) Solar PV	560.00	240.00
(6) Solar Thermal	840.00	360.00
(7) Biomass Gasifier based Power Projects	295.864	126.799
(8) Biogas based Power Projects	591.728	253.598

RETURN ON EQUITY

39. 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 11th year onwards.

INTEREST ON LOAN

40. 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 Regulation 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”.

41. 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:

Period from	Period to	Base rate
13/8/2011	Till date	10.00%
Average Base rate for first six months of FY 12-13		10.00%

Source: State Bank of India (www.statebankofindia.com)

42. 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 the (i.e. 10.00%) plus 300 basis points (equivalent to interest rate of 13.00%).

DEPRECIATION

43. 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".

44. 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	2.50	2.50	1.54	1.54	2.50	2.50

INTEREST ON WORKING CAPITAL

45. 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, Bioqas 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”.

46. 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. As mentioned in the Para No. 34, interest rate 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 13.50%). The interest

on working capital has been worked out as specified below for determination of tariff of the RE projects:

Details	Wind Energy	Small Hydro	Biomass, Biomass Gasifier and Biogas	Non-fossil fuel co-generation	Solar PV	Solar Thermal
(A) For Fixed charges						
(i) O&M expenses (month)	1	1	1	1	1	1
(ii) Maintenance spares (%) of O&M expenses	15	15	15	15	15	15
(iii) Receivables (months)	2	2	2	2	2	2
(B) For Variable Charges						
Biomass/Bagasse stock (months)	-	-	4	4	-	-
(C) Interest On Working Capital (%)	13.50%	13.50%	13.50%	13.50%	13.50%	13.50%

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

OPERATION AND MAINTENANCE EXPENSES

47. 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”.

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

(a) 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 ₹ 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 ₹ 9.51 Lakh/MW for FY 2013-14.

(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 O&M Expenses considered by the Commission for small hydro power for FY 2012-13;

Region	Project Size	O&M expenses (₹ Lakh/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 2013-14,

Region	Project Size	O&M expenses (₹ Lakh/MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	26.43
	5 MW to 25 MW	19.03
Other States	Below 5 MW	21.14
	5 MW to 25 MW	14.80

(c) Biomass: Regulation 39 of RE Tariff Regulations provides that the normative O& M expenses for biomass based projects for the year 2012-13 shall be ₹ 24 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 ₹ 25.37 Lakh/MW for FY 2013-14.

(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 ₹ 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 ₹ 16.92 Lakh/MW for FY 2013-14.

(e) Solar PV: Regulation 59 of RE Tariff Regulations provides that the normative O&M expenses for solar PV projects for the year 2012-13 shall be ₹ 11 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, O&M expense norm for solar PV power project as ₹ 11.63 Lakh/MW for FY 2013-14 has been considered.

(f) Solar Thermal: Regulation 63 of the RE Tariff Regulations specified the normative O&M expenses for solar thermal power projects shall be ₹ 15 Lakh/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 ₹ 15.86 Lakh/MW for FY 2013-14, 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 ₹ 40 Lakh/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 ₹ 42.29 Lakh/MW for FY 2013-14.

(h) Biogas: Regulation 80 of the RE Tariff Regulations specified the normative O&M expenses for solar thermal power projects shall be ₹ 40 Lakh/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 ₹ 42.29 Lakh/MW for FY 2013-14.

49. 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

50. 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.

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

PLANT LOAD FACTOR (PLF)

51. 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.

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

52. 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:

States	Operating days	PLF
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

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

Renewable Energy Projects	Auxiliary Consumption Factor
Small Hydro	1 %
Biomass	10 %
Non-fossil fuel co-generation	8.5 %
Solar Thermal	10 %
Biomass Gasifier	10 %
Biogas	12 %

STATION HEAT RATE

54. The Station Heat Rates (SHR) specified under Regulations 38 and 51 of the RE Tariff Regulations for biomass and non-fossil fuel based co-generation projects are as under:

Renewable Energy Projects	SHR (kCal / kWh)
Biomass	4000
Non-fossil fuel co-generation (for power component)	3600

FUEL

(a) Fuel Mix

55. 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.

56. 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.

57. 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) Use of fossil fuel

58. As per Regulation 41 of the RE Tariff Regulations, the use of fossil fuel is to be limited to the extent of 15% of total fuel consumption on annual basis and Regulation 42 of the RE

Tariff Regulations provides the mechanism for monitoring the use of fossil fuel is as under:

“(1) The Project developer shall furnish to the State Nodal Agency, a monthly fuel usage statement and monthly fuel procurement statement duly certified by Chartered Accountant to the beneficiary (with a copy to appropriate agency appointed by the Commission for the purpose of monitoring the fossil and non-fossil fuel consumption) for each month, along with the monthly energy bill. The statement shall cover details such as -

- a) Quantity of fuel (in tonne) for each fuel type (biomass fuels and fossil fuels) consumed and procured during the month for power generation purposes,*
- b) Cumulative quantity (in tonne) of each fuel type consumed and procured till the end of that month during the year,*
- c) Actual (gross and net) energy generation (denominated in units) during the month,*
- d) Cumulative actual (gross and net) energy generation (denominated in units) until the end of that month during the year,*
- e) Opening fuel stock quantity (in tonne),*
- f) Receipt of fuel quantity (in tonne) at the power plant site and*
- g) Closing fuel stock quantity (in tonne) for each fuel type (biomass fuels and fossil fuels) available at the power plant site.*

(2) Non-compliance with the condition of fossil fuel usage by the project developer, during any financial year, shall result in withdrawal of applicability of tariff as per these Regulations for such biomass based power project”.

(c) Calorific value

59. Regulation 43 of the RE Tariff Regulations provides the calorific value of biomass fuel used for determination of tariff shall be at 3300 kCal/kg.

60. 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.

(d) Fuel cost

61. 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, 2012 and April, 2011 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 2013-14 thereof, has been enclosed as **Appendix-7** to this order. Accordingly, the biomass fuel price applicable for FY 2013-14 is as under:

State	Biomass price (₹/tonne)
Andhra Pradesh	2480.55
Haryana	2823.44
Maharashtra	2887.73
Punjab	2953.09
Rajasthan	2464.48
Tamil Nadu	2439.83
Uttar Pradesh	2523.41
Other States	2653.07

62. 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 2013-14 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 2013-14 shall be as in the table below;

State	Bagasse Price (₹/tonne)
Andhra Pradesh	1400.47
Haryana	1991.94
Maharashtra	1963.01
Punjab	1753.00
Tamil Nadu	1508.69
Uttar Pradesh	1562.27
Other States	1696.20

63. 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 2013-14 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 2013-14 thereof, has been enclosed as **Appendix-9** of this Order.

64. 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 ₹ 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 2013-14 thereof, has been enclosed as **Appendix-10** of this Order. The price of fuel applicable for the biogas based power plant for FY 2013-14 shall be at ₹ 1060.80/MT (net of any cost recovery from digester effluent).

65. 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 2013-14. 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. 2013-14) is specified.

Subsidy or incentive by the Central / State Government

66. 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:

i) 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”.

67. In terms of the above regulation, for the projects availing the benefit of accelerated depreciation as per applicable Income tax rate @ 32.445% (30% IT rate+ 5% 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 (except for Wind energy generator- as per Income-tax (Fourth Amendment Rules), 2012, depreciation is now restricted to 15% on wind mills installed after 31-3-2012) vide Notification No. 15/2012 [F.No.149/21/2010-SO(TPL)] S.O.694(E), dated 30-3-2012). Moreover, additional 20% depreciation in the initial year is proposed to be extended to new assets acquired by power generation companies vide amendment in section 32, sub-section (1) clause (ii a) of the Income Tax Act.

68. 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 (ii) 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.

69. In the light of the discussion made in the preceding paragraphs, the generic tariffs of the following RE projects for the financial year 2013-14 have been determined as under:

Generic Tariff for RE Technologies for FY 2013-14

Particular	Levelling Total Tariff	Benefit of Accelerated Depreciation (if availed)	Net Levelling Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹ / kWh)	(₹/kWh)	(₹/kWh)
Wind Energy			
Wind Zone -1 (CUF 20%)	6.29	0.49	5.80
Wind Zone -2 (CUF 22%)	5.72	0.45	5.27
Wind Zone -3 (CUF 25%)	5.03	0.39	4.64
Wind Zone -4 (CUF 30%)	4.19	0.33	3.86
Wind Zone -5 (CUF 32%)	3.93	0.31	3.62
Small Hydro Power Project			
HP, Uttarakhand and NE States (Below 5MW)	4.38	0.36	4.02
HP, Uttarakhand and NE States (5MW to 25 MW)	3.75	0.32	3.43
Other States (Below 5 MW)	5.16	0.42	4.74
Other States (5 MW to 25 MW)	4.40	0.38	4.02

State	Levellised Fixed Cost	Variable Cost (FY 2013-14)	Applicable Tariff Rate (FY 2013-14)	Benefit of Accelerated Depreciation (if availed)	Net Levelled Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)	(₹/kWh)
Biomass Power Project					
Andhra Pradesh	2.21	3.34	5.55	0.14	5.41
Haryana	2.25	3.80	6.05	0.14	5.91
Maharashtra	2.26	3.89	6.15	0.14	6.01
Punjab	2.27	3.98	6.24	0.14	6.11
Rajasthan	2.20	3.32	5.52	0.14	5.38
Tamil Nadu	2.20	3.29	5.49	0.14	5.35
Uttar Pradesh	2.21	3.40	5.61	0.14	5.47
Others	2.23	3.57	5.80	0.14	5.66
Non-Fossil Fuel based Cogeneration					
Andhra Pradesh	2.95	2.45	5.40	0.24	5.17
Haryana	2.64	3.48	6.13	0.20	5.93
Maharashtra	2.37	3.43	5.80	0.18	5.63
Punjab	2.60	3.07	5.67	0.20	5.47
Tamil Nadu	2.29	2.64	4.93	0.18	4.75
Uttar Pradesh	2.98	2.73	5.71	0.24	5.48
Others	2.59	2.97	5.56	0.20	5.36

Solar PV and Solar Thermal			
Particular	Levelling Total Tariff (FY2013-14)	Benefit of Accelerated Depreciation (if availed)	Net Levelling Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹ / kWh)	(₹/ kWh)	(₹/ kWh)
Solar PV	8.75	0.88	7.87
Solar Thermal	11.90	1.21	10.69

State	Levelling Fixed Cost	Variable Cost (FY 2013-14)	Applicable Tariff Rate (FY 2013-14)	Benefit of Accelerated Depreciation (if availed)	Net Levelling Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(₹/ kWh)	(₹/ kWh)	(₹/ kWh)	(₹/ kWh)	(₹/ kWh)
Biomass Gasifier Power Project					
Andhra Pradesh	2.46	3.45	5.91	0.12	5.79
Haryana	2.53	3.92	6.45	0.12	6.32
Maharashtra	2.54	4.01	6.55	0.12	6.43
Punjab	2.55	4.10	6.65	0.12	6.53
Rajasthan	2.46	3.42	5.88	0.12	5.76
Tamil Nadu	2.46	3.39	5.85	0.12	5.73
Uttar Pradesh	2.47	3.50	5.98	0.12	5.86
Others	2.49	3.68	6.18	0.12	6.06
Biogas based Cogeneration					
Biogas	3.30	3.62	6.91	0.24	6.67

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

S No	Renewable Energy Projects	Annexure
A	Wind Power Projects	
	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	Small Hydro Power Projects	
	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
C	Biomass Power Projects	
	Andhra Pradesh	Annexure 3A
	Haryana	Annexure 3B
	Maharashtra	Annexure 3C
	Punjab	Annexure 3D
	Rajasthan	Annexure 3E
	Uttar Pradesh	Annexure 3F
	Tamil Nadu	Annexure 3G
	Others	Annexure 3H

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

Sd/-	Sd/-	Sd/-	Sd/-
[M. DEENA DAYALAN]	[V.S.VERMA]	[S. JAYARAMAN]	[Dr. PRAMOD DEO]
MEMBER	MEMBER	MEMBER	CHAIRPERSON
New Delhi			
Dated the 28 th February, 2013			

Capital cost of Indexation for Wind Power Projects (FY 2013-14)

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	0.60
b	Weightage for Electrical Machinery Index	0.40
F1	Factor for Land and Civil Work	0.08
F2	Factor for Erection and Commissioning	0.07
F3	Factor for IDC and Financing	0.10

Month/Year	Electrical Machinery		Steel	
	2012	2011	2012	2011
January	130.900	125.100	126.200	118.600
February	130.900	125.100	126.200	113.000
March	130.900	126.400	126.200	113.000
April	130.700	127.200	126.200	113.000
May	131.200	127.600	126.200	113.000
June	132.200	128.000	126.200	119.600
July	133.000	128.700	126.200	126.200
August	133.200	129.200	126.200	126.200
September	133.100	130.900	126.200	126.200
October	133.100	130.600	126.200	126.200
November	133.000	130.800	126.200	126.200
December	133.600	131.000	126.200	126.200
Average	132.150	128.383	126.200	120.617

Parameters	Description	Value
CC ₍₀₎ (₹ L/MW)	Capital Cost for the Base Year	575.000
P&M ₍₀₎ (₹ L/MW)	Plant & Machinery Cost for the Base Year	460.000
d _(n)	Capital Cost escalation Factor	3.951%
P&M _(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2013-14)	478.174
CC _(n) (₹ L/MW)	Capital Cost for the nth Year (FY 2013-14)	597.718

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

Capital cost of Indexation for Small Hydro Power Projects (FY 2013-14)

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	0.60
b	Weightage for Electrical Machinery Index	0.40
F1	Factor for Land and Civil Work	0.16
F2	Factor for Erection and Commissioning	0.10
F3	Factor for IDC and Financing	0.14

Month/Year	Electrical Machinery		Steel	
	2012	2011	2012	2011
January	130.900	125.100	126.200	118.600
February	130.900	125.100	126.200	113.000
March	130.900	126.400	126.200	113.000
April	130.700	127.200	126.200	113.000
May	131.200	127.600	126.200	113.000
June	132.200	128.000	126.200	119.600
July	133.000	128.700	126.200	126.200
August	133.200	129.200	126.200	126.200
September	133.100	130.900	126.200	126.200
October	133.100	130.600	126.200	126.200
November	133.000	130.800	126.200	126.200
December	133.600	131.000	126.200	126.200
Average	132.150	128.383	126.200	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	770.000	700.00	600.00	550.00
P&M ₍₀₎ (₹ L/MW)	Plant & Machinery Cost for the Base Year	550.000	500.00	428.57	392.86
d _(n)	Capital Cost escalation Factor	3.95%	3.95%	3.95%	3.95%
P&M _(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2013-14)	571.730	519.755	445.504	408.379
CC _(n) (₹ L/MW)	Capital Cost for the nth Year (FY 2013-14)	800.422	727.657	623.706	571.730

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

Capital cost of Indexation for Biomass Power Projects (FY 2013-14)

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	0.70
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	
	2012	2011	2012	2011
January	130.900	125.100	126.200	118.600
February	130.900	125.100	126.200	113.000
March	130.900	126.400	126.200	113.000
April	130.700	127.200	126.200	113.000
May	131.200	127.600	126.200	113.000
June	132.200	128.000	126.200	119.600
July	133.000	128.700	126.200	126.200
August	133.200	129.200	126.200	126.200
September	133.100	130.900	126.200	126.200
October	133.100	130.600	126.200	126.200
November	133.000	130.800	126.200	126.200
December	133.600	131.000	126.200	126.200
Average	132.150	128.383	126.200	120.617

Parameters	Description	Value
CC ₍₀₎ (₹ L/MW)	Capital Cost for the Base Year	445.000
P&M ₍₀₎ (₹ L/MW)	Plant & Machinery Cost for the Base Year	334.586
d _(n)	Capital Cost escalation Factor	4.120%
P&M _(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2013-14)	348.373
CC _(n) (₹ L/MW)	Capital Cost for the nth Year (FY2013-14)	463.336

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

Capital cost of Indexation for Non-fossil fuel based Cogeneration Power Projects (FY
2013-14)

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	0.70
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	
	2012	2011	2012	2011
January	130.900	125.100	126.200	118.600
February	130.900	125.100	126.200	113.000
March	130.900	126.400	126.200	113.000
April	130.700	127.200	126.200	113.000
May	131.200	127.600	126.200	113.000
June	132.200	128.000	126.200	119.600
July	133.000	128.700	126.200	126.200
August	133.200	129.200	126.200	126.200
September	133.100	130.900	126.200	126.200
October	133.100	130.600	126.200	126.200
November	133.000	130.800	126.200	126.200
December	133.600	131.000	126.200	126.200
Average	132.150	128.383	126.200	120.617

Parameters	Description	Value
CC ₍₀₎ (₹ L/MW)	Capital Cost for the Base Year	420.000
P&M ₍₀₎ (₹ L/MW)	Plant & Machinery Cost for the Base Year	315.790
d _(n)	Capital Cost escalation Factor	4.12%
P&M _(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2013-14)	328.801
CC _(n) (₹ L/MW)	Capital Cost for the nth Year (FY2013-14)	437.306

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

Capital cost of Indexation for Biomass Gasifier Power Projects (FY 2013-14)

<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		Iron & Steel	
	2012	2011	2012	2011
January	130.900	125.100	126.200	118.600
February	130.900	125.100	126.200	113.000
March	130.900	126.400	126.200	113.000
April	130.700	127.200	126.200	113.000
May	131.200	127.600	126.200	113.000
June	132.200	128.000	126.200	119.600
July	133.000	128.700	126.200	126.200
August	133.200	129.200	126.200	126.200
September	133.100	130.900	126.200	126.200
October	133.100	130.600	126.200	126.200
November	133.000	130.800	126.200	126.200
December	133.600	131.000	126.200	126.200
Average	132.150	128.383	126.200	120.617

Parameters	Description	Value
$CC_{(0)}$ (₹ L/MW)	Capital Cost for the Base Year	550.000
$P\&M_{(0)}$ (₹ L/MW)	Plant & Machinery Cost for the Base Year	413.534
$d_{(n)}$	Capital Cost escalation Factor	4.12%
$P\&M_{(n)}$ (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2013-14)	430.573
$CC_{(n)}$ (₹ L/MW)	Capital Cost for the nth Year (FY2013-14)	572.663

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

Capital cost of Indexation for Biogas based Power Projects (FY 2013-14)

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	0.7
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	
	2012	2011	2012	2011
January	130.900	125.100	126.200	118.600
February	130.900	125.100	126.200	113.000
March	130.900	126.400	126.200	113.000
April	130.700	127.200	126.200	113.000
May	131.200	127.600	126.200	113.000
June	132.200	128.000	126.200	119.600
July	133.000	128.700	126.200	126.200
August	133.200	129.200	126.200	126.200
September	133.100	130.900	126.200	126.200
October	133.100	130.600	126.200	126.200
November	133.000	130.800	126.200	126.200
December	133.600	131.000	126.200	126.200
Average	132.150	128.383	126.200	120.617

Parameters	Description	Value
CC ₍₀₎ (₹ L/MW)	Capital Cost for the Base Year	1100.000
P&M ₍₀₎ (₹ L/MW)	Plant & Machinery Cost for the Base Year	827.068
d _(n)	Capital Cost escalation Factor	4.12%
P&M _(n) (₹ L/MW)	Plant & Machinery Cost for the nth Year (FY 2011-12)	861.147
CC _(n) (₹ L/MW)	Capital Cost for the nth Year (FY2011-12)	1145.325

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

Biomass Fuel Price across States for FY 2013-14

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

Fuel Price indexation for Biomass Power Projects (FY2013-14)**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	152.10
WPI n	163.50
IRC n-1	6.47%
Pd n-1	160.99
Pd n	175.24
a	0.20
b	0.60
c	0.20

State	Biomass price (₹/MT) (2012-13)	Biomass price (₹/MT) (2013-14)
Andhra Pradesh	2315.00	2480.55
Haryana	2635.00	2823.44
Maharashtra	2695.00	2887.73
Punjab	2756.00	2953.09
Rajasthan	2300.00	2464.48
Tamil Nadu	2277.00	2439.83
Uttar Pradesh	2355.00	2523.41
Other States	2476.00	2653.07

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2012 and April 2011 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 January 2012 to December 2012.
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 January 2011 to December 2011.
4. The Calculation of Pd (n) and Pd (n-1) are shown as under:

WPI (Price of HSD)

Month	2012	2011
Jan	167.80	153.60
Feb	167.80	153.60
Mar	167.80	153.60
Apr	167.80	153.60
May	167.80	153.60
Jun	167.80	157.10
Jul	167.80	167.80
Aug	168.60	167.80
Sep	182.80	167.80
Oct	192.30	167.80
Nov	192.30	167.80
Dec	192.30	167.80
Average	Pd (n) :175.24	Pd (n-1) : 160.99

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

From	To	IRC	Days	Average IRC
01-04-2012	30-09-2012	9.54%	183	
01-10-2012	31-03-2013	3.38%	182	
			365	6.47%

Source of IRC: CERC (www.cercind.gov.in)

bagasse Fuel Price across States for FY 2013-14

As per fuel price Index Mechanism outlined under Regulation 54 and the availability of required information

Fuel Price indexation for Bagasse Power Projects (FY2013-14)

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)	152.10
WPI _(n)	163.50
IRC _(n-1)	6.47%
Pd _(n-1)	160.99
Pd _(n)	175.24
a	0.20
b	0.60
c	0.20

State	Bagasse price (₹/MT) (2012-13)	Bagasse price (₹/MT) (2013-14)
Andhra Pradesh	1307.00	1400.47
Haryana	1859.00	1991.94
Maharashtra	1832.00	1963.01
Punjab	1636.00	1753.00
Tamil Nadu	1408.00	1508.69
Uttar Pradesh	1458.00	1562.27
Other States	1583.00	1696.20

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2012 and April 2011 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 January 2012 to December 2012.
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 January 2011 to December 2011.
4. The Calculation of Pd (n) and Pd (n-1) are shown as under:

WPI (Price of HSD)

Month	2012	2011
Jan	167.80	153.60
Feb	167.80	153.60
Mar	167.80	153.60
Apr	167.80	153.60
May	167.80	153.60
Jun	167.80	157.10
Jul	167.80	167.80
Aug	168.60	167.80
Sep	182.80	167.80
Oct	192.30	167.80
Nov	192.30	167.80
Dec	192.30	167.80
Average	Pd (n) : 175.24	Pd (n-1) : 160.99

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

From	To	IRC	Days	Average IRC
01-04-2012	30-09-2012	9.54%	183	
01-10-2012	31-03-2013	3.38%	182	
			365	6.47%

Source of IRC: CERC (www.cercind.gov.in)

Biomass Gasifier Fuel Price across States for FY 2013-14

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

Fuel Price indexation for Biomass gasifier Power Projects (FY2013-14)**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)	152.10
WPI _(n)	163.50
IRC _(n-1)	6.47%
Pd _(n-1)	160.99
Pd _(n)	175.24
a	0.20
b	0.60
c	0.20

State	Biomass price (₹/MT) (2012-13)	Biomass price (₹/MT) (2013-14)
Andhra Pradesh	2315.00	2480.55
Haryana	2635.00	2823.44
Maharashtra	2695.00	2887.73
Punjab	2756.00	2953.09
Rajasthan	2300.00	2464.48
Tamil Nadu	2277.00	2439.83
Uttar Pradesh	2355.00	2523.41
Other States	2476.00	2653.07

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2012 and April 2011 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 January 2012 to December 2012.
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 January 2011 to December 2011.
4. The Calculation of Pd (n) and Pd (n-1) are shown as under:

WPI (Price of HSD)

Month	2012	2011
Jan	167.80	153.60
Feb	167.80	153.60
Mar	167.80	153.60
Apr	167.80	153.60
May	167.80	153.60
Jun	167.80	157.10
Jul	167.80	167.80
Aug	168.60	167.80
Sep	182.80	167.80
Oct	192.30	167.80
Nov	192.30	167.80
Dec	192.30	167.80
Average	Pd (n) : 175.24	Pd (n-1) : 160.99

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

From	To	IRC	Days	Average IRC
01-04-2012	30-09-2012	9.54%	183	
01-10-2012	31-03-2013	3.38%	182	
			365	6.47%

Source of IRC: CERC (www.cercind.gov.in)

Fuel Price for biogas based power plant for FY 2013-14

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

Fuel Price indexation for Biogas based power projects (FY2013-14)

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)	152.10
WPI _(n)	163.50
IRC _(n-1)	6.47%
Pd _(n-1)	160.99
Pd _(n)	175.24
a	0.20
b	0.60
c	0.20

Fuel price (₹/MT) (2012-13)	Fuel price (₹/MT) (2013-14)
990.00	1060.80

Note:

1. The Calculation of WPI (n) and WPI (n-1) is based on the figures available on April 2012 and April 2011 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 January 2012 to December 2012.
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 January 2011 to December 2011.
4. The Calculation of Pd (n) and Pd (n-1) are shown as under:

WPI (Price of HSD)

Month	2012	2011
Jan	167.80	153.60
Feb	167.80	153.60
Mar	167.80	153.60
Apr	167.80	153.60
May	167.80	153.60
Jun	167.80	157.10
Jul	167.80	167.80
Aug	168.60	167.80
Sep	182.80	167.80
Oct	192.30	167.80
Nov	192.30	167.80
Dec	192.30	167.80
Average	Pd (n) :175.24	Pd (n-1) : 160.99

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

From	To	IRC	Days	Average IRC
01-04-2012	30-09-2012	9.54%	183	
01-10-2012	31-03-2013	3.38%	182	
			365	6.47%

Source of IRC: CERC (www.cercind.gov.in)

Assumptions: Wind Energy Projects						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 1	
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	597.718	
3	Sources of Fund	<u>Debt: Equity</u>	Tariff Period	Years	13	
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	418.403	
			Total Equity Amount	Rs Lacs	179.315	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	418.40
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	13.00%
			<u>Equity Component</u>	Equity amount	Rs Lacs	179.32
				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		10.95%				
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%	
			<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	%	13.50%
6	Operation & Maintenance	<u>Power plant (FY13-14)</u>	Total O & M Expenses	Rs Lacs/MW	9.51	
			Escalation	%	5.72%	

Determination of Tariff Component																											
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	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		9.51	10.05	10.63	11.24	11.88	12.56	13.28	14.04	14.84	15.69	16.59	17.54	18.54	19.60	20.72	21.90	23.16	24.48	25.88	27.36	28.93	30.58	32.33	34.18	36.14
Depreciation	Rs Lakh		34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21
Interest on term loan	Rs Lakh		52.13	47.59	43.06	38.53	34.00	29.46	24.93	20.40	15.86	11.33	6.80	2.27	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		3.35	3.28	3.21	3.14	3.07	3.00	2.93	2.87	2.81	2.76	2.87	2.81	2.23	2.29	2.35	2.41	2.48	2.56	2.63	2.71	2.80	2.89	2.99	3.09	3.20
Return on Equity	Rs Lakh		35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04
Total Fixed Cost	Rs Lakh		135.70	131.64	127.61	123.61	119.65	115.73	111.85	108.02	104.23	100.49	104.13	100.50	73.01	74.13	75.32	76.57	77.89	79.29	80.76	82.33	83.98	85.72	87.57	89.52	91.59
Levallised tariff corresponding to Useful life																											
Per Unit Cost of Generation	Unit	Levllise	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	0.86	0.54	0.57	0.61	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
Depreciation	Rs/kWh	1.65	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Int. on term loan	Rs/kWh	1.44	2.98	2.72	2.46	2.20	1.94	1.68	1.42	1.16	0.91	0.65	0.39	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	0.17	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.13	0.13	0.13	0.14	0.14	0.15	0.15	0.15	0.16	0.17	0.17	0.18	0.18
RoE	Rs/kWh	2.17	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46
Total COG	Rs/kWh	6.29	7.75	7.51	7.28	7.06	6.83	6.61	6.38	6.17	5.95	5.74	5.94	5.74	4.17	4.23	4.30	4.37	4.45	4.53	4.61	4.70	4.79	4.89	5.00	5.11	5.23
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083
Levllised Tariff	6.29	Rs/Unit																									

Determination of Accelerated Depreciation for Wind Power Projects																						
Depreciation amount	90%																					
Book Depreciation rate	5.28%																					
Tax Depreciation rate	15%																					
Additional Depreciation	20.00%																					
Income Tax (Normal Rates)	32.445%																					
Capital Cost Rs. Lakh	597.718																					
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	15.78	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	17.21	0.00	0.00
Accelerated Depreciation																						
Opening	%	100.00%	82.50%	61.88%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%	
Allowed during the year	%	17.50%	20.63%	9.28%	7.89%	6.71%	5.70%	4.84%	4.12%	3.50%	2.98%	2.53%	2.15%	1.83%	1.55%	1.32%	1.12%	0.95%	0.81%	0.69%	0.59%	
Closing	%	83%	62%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%	3.32%	
Accelerated Deprn.	Rs Lakh	104.60	123.28	55.48	47.15	40.08	34.07	28.96	24.61	20.92	17.78	15.12	12.85	10.92	9.28	7.89	6.71	5.70	4.85	4.12	3.50	
Net Depreciation Benefit	Rs Lakh	88.82	91.72	23.92	15.59	8.52	2.51	-2.60	-6.94	-10.64	-13.78	-16.44	-18.71	-20.64	-22.28	-23.67	-24.85	-25.86	-12.37	4.12	3.50	
Tax Benefit	Rs Lakh	28.82	29.76	7.76	5.06	2.76	0.81	-0.84	-2.25	-3.45	-4.47	-5.33	-6.07	-6.70	-7.23	-7.68	-8.06	-8.39	-4.01	1.34	1.14	
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	
Per unit benefit	Rs/Unit	3.29	1.70	0.44	0.29	0.16	0.05	-0.05	-0.13	-0.20	-0.26	-0.30	-0.35	-0.38	-0.41	-0.44	-0.46	-0.48	-0.23	0.08	0.06	
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	
Levellised benefit	0.49	Rs/Unit																				

Assumptions: Wind Energy Projects						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 2	
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1	
			Capacity Utilization Factor	%	22%	
			Useful Life	Years	25	
2	Project Cost	<u>Capital Cost/MW</u>	Power Plant Cost	Rs Lacs/MW	597.718	
3	Sources of Fund	<u>Debt: Equity</u>	Tariff Period	Years	13	
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	418.403	
			Total Equity Amount	Rs Lacs	179.315	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	418.40
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	13.00%
			<u>Equity Component</u>	Equity amount	Rs Lacs	179.32
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		10.95%				
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%	
			<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	%	13.50%
6	Operation & Maintenance	<u>Power plant (FY13-14)</u>	Total O & M Expenses Escalation	Rs Lacs/MW	9.51	
				%	5.72%	

Determination of Tariff Component																											
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		1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
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		9.51	10.05	10.63	11.24	11.88	12.56	13.28	14.04	14.84	15.69	16.59	17.54	18.54	19.60	20.72	21.90	23.16	24.48	25.88	27.36	28.93	30.58	32.33	34.18	36.14
Depreciation	Rs Lakh		34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21
Interest on term loan	Rs Lakh		52.13	47.59	43.06	38.53	34.00	29.46	24.93	20.40	15.86	11.33	6.80	2.27	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		3.35	3.28	3.21	3.14	3.07	3.00	2.93	2.87	2.81	2.76	2.71	2.66	2.61	2.56	2.51	2.46	2.41	2.36	2.31	2.26	2.21	2.16	2.11	2.06	2.01
Return on Equity	Rs Lakh		35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04
Total Fixed Cost	Rs Lakh		135.70	131.64	127.61	123.61	119.65	115.73	111.85	108.02	104.23	100.49	104.13	100.50	73.01	74.13	75.32	76.57	77.89	79.29	80.76	82.33	83.98	85.72	87.57	89.52	91.59
Levallised tariff corresponding to Useful life																											
Per Unit Cost of Generation	Unit	Levllise	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	0.78	0.49	0.52	0.55	0.58	0.62	0.65	0.69	0.73	0.77	0.81	0.86	0.91	0.96	1.02	1.08	1.14	1.20	1.27	1.34	1.42	1.50	1.59	1.68	1.77	1.88
Depreciation	Rs/kWh	1.50	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Int. on term loan	Rs/kWh	1.30	2.70	2.47	2.23	2.00	1.76	1.53	1.29	1.06	0.82	0.59	0.35	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	0.17	0.16	0.16	0.16	0.15	0.15	0.14	0.15	0.15	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17
RoE	Rs/kWh	1.97	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23
Total COG	Rs/kWh	5.72	7.04	6.83	6.62	6.41	6.21	6.01	5.80	5.60	5.41	5.21	5.40	5.21	3.79	3.85	3.91	3.97	4.04	4.11	4.19	4.27	4.36	4.45	4.54	4.65	4.75
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083
Levllised Tariff	5.72	Rs/Unit																									

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	15%
Additional Depreciation	20.00%
Income Tax (Normal Rates)	32.445%
Capital Cost Rs. Lakh	597.718

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	15.78	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	17.21	0.00	0.00

Accelerated Depreciation

Opening	%	100.00%	82.50%	61.88%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%
Allowed during the year	%	17.50%	20.63%	9.28%	7.89%	6.71%	5.70%	4.84%	4.12%	3.50%	2.98%	2.53%	2.15%	1.83%	1.55%	1.32%	1.12%	0.95%	0.81%	0.69%	0.59%
Closing	%	83%	62%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%	3.32%
Accelerated Deprn.	Rs Lakh	104.60	123.28	55.48	47.15	40.08	34.07	28.96	24.61	20.92	17.78	15.12	12.85	10.92	9.28	7.89	6.71	5.70	4.85	4.12	3.50
Net Depreciation Benefit	Rs Lakh	88.82	91.72	23.92	15.59	8.52	2.51	-2.60	-6.94	-10.64	-13.78	-16.44	-18.71	-20.64	-22.28	-23.67	-24.85	-25.86	-12.37	4.12	3.50
Tax Benefit	Rs Lakh	28.82	29.76	7.76	5.06	2.76	0.81	-0.84	-2.25	-3.45	-4.47	-5.33	-6.07	-6.70	-7.23	-7.68	-8.06	-8.39	-4.01	1.34	1.14
Energy generation	MU	0.96	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Per unit benefit	Rs/Unit	2.99	1.54	0.40	0.26	0.14	0.04	-0.04	-0.12	-0.18	-0.23	-0.28	-0.31	-0.35	-0.38	-0.40	-0.42	-0.44	-0.21	0.07	0.06
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.45 Rs/Unit																				

Assumptions: Wind Energy Projects						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 3	
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1	
			Capacity Utilization Factor	%	25%	
			Useful Life	Years	25	
2	Project Cost	<u>Capital Cost/MW</u>	Power Plant Cost	Rs Lacs/MW	597.718	
3	Sources of Fund	<u>Debt: Equity</u>	Tariff Period	Years	13	
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	418.403	
			Total Equity Amount	Rs Lacs	179.315	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	418.40
				Moratorium Period	years	0
				Repayment Period(inclد Moratorium)	years	12
				Interest Rate	%	13.00%
			<u>Equity Component</u>	Equity amount	Rs Lacs	179.32
				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		10.95%				
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%	
			<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	%	13.50%
6	Operation & Maintenance	<u>Power plant (FY13-14)</u>	Total O & M Expenses	Rs Lacs/MW	9.51	
			<u>Escalation</u>	%	5.72%	

Determination of Tariff Component																											
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		2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19
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		9.51	10.05	10.63	11.24	11.88	12.56	13.28	14.04	14.84	15.69	16.59	17.54	18.54	19.60	20.72	21.90	23.16	24.48	25.88	27.36	28.93	30.58	32.33	34.18	36.14
Depreciation	Rs Lakh		34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85
Interest on term loan	Rs Lakh		52.13	47.59	43.06	38.53	34.00	29.46	24.93	20.40	15.86	11.33	6.80	2.27	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		3.35	3.28	3.21	3.14	3.07	3.00	2.93	2.87	2.81	2.76	2.87	2.81	2.23	2.29	2.35	2.41	2.48	2.56	2.63	2.71	2.80	2.89	2.99	3.09	3.20
Return on Equity	Rs Lakh		35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04
Total Fixed Cost	Rs Lakh		135.70	131.64	127.61	123.61	119.65	115.73	111.85	108.02	104.23	100.49	104.13	100.50	73.01	74.13	75.32	76.57	77.89	79.29	80.76	82.33	83.98	85.72	87.57	89.52	91.59
Levillised tariff corresponding to Useful life																											
Per Unit Cost of Generation	Unit	Levillise	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	0.69	0.43	0.46	0.49	0.51	0.54	0.57	0.61	0.64	0.68	0.72	0.76	0.80	0.85	0.89	0.95	1.00	1.06	1.12	1.18	1.25	1.32	1.40	1.48	1.56	1.65
Depreciation	Rs/kWh	1.32	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Int. on term loan	Rs/kWh	1.15	2.38	2.17	1.97	1.76	1.55	1.35	1.14	0.93	0.72	0.52	0.31	0.10	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	0.13	0.15	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.10	0.10	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15
RoE	Rs/kWh	1.74	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97
Total COG	Rs/kWh	5.03	6.20	6.01	5.83	5.64	5.46	5.28	5.11	4.93	4.76	4.59	4.75	4.59	3.33	3.39	3.44	3.50	3.56	3.62	3.69	3.76	3.83	3.91	4.00	4.09	4.18
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083
Levillised Tariff	5.03	Rs/Unit																									

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	15%
Additional Depreciation	20.00%
Income Tax (Normal Rates)	32.445%
Capital Cost Rs. Lakh	597.718

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	15.78	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	17.21	0.00	0.00

Accelerated Depreciation

Opening	%	100.00%	82.50%	61.88%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%
Allowed during the year	%	17.50%	20.63%	9.28%	7.89%	6.71%	5.70%	4.84%	4.12%	3.50%	2.98%	2.53%	2.15%	1.83%	1.55%	1.32%	1.12%	0.95%	0.81%	0.69%	0.59%
Closing	%	83%	62%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%	3.32%
Accelerated Deprn.	Rs Lakh	104.60	123.28	55.48	47.15	40.08	34.07	28.96	24.61	20.92	17.78	15.12	12.85	10.92	9.28	7.89	6.71	5.70	4.85	4.12	3.50

Net Depreciation Benefit	Rs Lakh	88.82	91.72	23.92	15.59	8.52	2.51	-2.60	-6.94	-10.64	-13.78	-16.44	-18.71	-20.64	-22.28	-23.67	-24.85	-25.86	-12.37	4.12	3.50
Tax Benefit	Rs Lakh	28.82	29.76	7.76	5.06	2.76	0.81	-0.84	-2.25	-3.45	-4.47	-5.33	-6.07	-6.70	-7.23	-7.68	-8.06	-8.39	-4.01	1.34	1.14
Energy generation	MU	1.10	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19
Per unit benefit	Rs/Unit	2.63	1.36	0.35	0.23	0.13	0.04	-0.04	-0.10	-0.16	-0.20	-0.24	-0.28	-0.31	-0.33	-0.35	-0.37	-0.38	-0.18	0.06	0.05
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.39 Rs/Unit																				

Assumptions: Wind Energy Projects					
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 4
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	30%
			Useful Life	Years	25
2	Project Cost	<u>Capital Cost/MW</u>	Power Plant Cost	Rs Lacs/MW	597.718
3	Sources of Fund	<u>Debt: Equity</u>	Tariff Period	Years	13
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	418.403
			Total Equity Amount	Rs Lacs	179.315
		<u>Debt Component</u>	Loan Amount	Rs Lacs	418.40
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	179.32
			Return on Equity for first 10 years	% p.a	20.00%
Return on Equity 11th year onwards	% p.a		24.00%		
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
			<u>Depreciation</u>	Depreciation Rate for first 12 years	%
				Depreciation Rate 13th year onwards	%
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		<u>For Variable Charges</u>	Receivables for Debtors	Months	2
		<u>Interest On Working Capital</u>		%	13.50%
6	Operation & Maintenance	<u>Power plant (FY13-14)</u>		Rs Lacs/MW	9.51
		<u>Total O & M Expenses Escalation</u>		%	5.72%

Determination of Tariff Component

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		2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	
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		9.51	10.05	10.63	11.24	11.88	12.56	13.28	14.04	14.84	15.69	16.59	17.54	18.54	19.60	20.72	21.90	23.16	24.48	25.88	27.36	28.93	30.58	32.33	34.18	36.14	
Depreciation	Rs Lakh		34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21
Interest on term loan	Rs Lakh		52.13	47.59	43.06	38.53	34.00	29.46	24.93	20.40	15.86	11.33	6.80	2.27	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		3.35	3.28	3.21	3.14	3.07	3.00	2.93	2.87	2.81	2.76	2.87	2.81	2.23	2.29	2.35	2.41	2.48	2.56	2.63	2.71	2.80	2.89	2.99	3.09	3.20	
Return on Equity	Rs Lakh		35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04
Total Fixed Cost	Rs Lakh		135.70	131.64	127.61	123.61	119.65	115.73	111.85	108.02	104.23	100.49	104.13	100.50	73.01	74.13	75.32	76.57	77.89	79.29	80.76	82.33	83.98	85.72	87.57	89.52	91.59	
Levallised tariff corresponding to Useful life																												
Per Unit Cost of Generation	Unit	Levellise	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	0.57	0.36	0.38	0.40	0.43	0.45	0.48	0.51	0.53	0.56	0.60	0.63	0.67	0.71	0.75	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30	1.38	
Depreciation	Rs/kWh	1.10	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Int. on term loan	Rs/kWh	0.96	1.98	1.81	1.64	1.47	1.29	1.12	0.95	0.78	0.60	0.43	0.26	0.09	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	0.11	0.13	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.10	0.11	0.11	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.12	
RoE	Rs/kWh	1.45	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	
Total COG	Rs/kWh	4.19	5.16	5.01	4.86	4.70	4.55	4.40	4.26	4.11	3.97	3.82	3.96	3.82	2.78	2.82	2.87	2.91	2.96	3.02	3.07	3.13	3.20	3.26	3.33	3.41	3.48	
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083	
Levallised Tariff	4.19	Rs/Unit																										

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	15%
Additional Depreciation	20.00%
Income Tax (Normal Rates)	32.445%
Capital Cost Rs. Lakh	597.718

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	15.78	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	17.21	0.00	0.00

Accelerated Depreciation

Opening	%	100.00%	82.50%	61.88%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%
Allowed during the year	%	17.50%	20.63%	9.28%	7.89%	6.71%	5.70%	4.84%	4.12%	3.50%	2.98%	2.53%	2.15%	1.83%	1.55%	1.32%	1.12%	0.95%	0.81%	0.69%	0.59%
Closing	%	83%	62%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%	3.32%
Accelerated Deprn.	Rs Lakh	104.60	123.28	55.48	47.15	40.08	34.07	28.96	24.61	20.92	17.78	15.12	12.85	10.92	9.28	7.89	6.71	5.70	4.85	4.12	3.50

Net Depreciation Benefit	Rs Lakh	88.82	91.72	23.92	15.59	8.52	2.51	-2.60	-6.94	-10.64	-13.78	-16.44	-18.71	-20.64	-22.28	-23.67	-24.85	-25.86	-12.37	4.12	3.50
Tax Benefit	Rs Lakh	28.82	29.76	7.76	5.06	2.76	0.81	-0.84	-2.25	-3.45	-4.47	-5.33	-6.07	-6.70	-7.23	-7.68	-8.06	-8.39	-4.01	1.34	1.14
Energy generation	MU	1.31	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
Per unit benefit	Rs/Unit	2.19	1.13	0.30	0.19	0.11	0.03	-0.03	-0.09	-0.13	-0.17	-0.20	-0.23	-0.25	-0.28	-0.29	-0.31	-0.32	-0.15	0.05	0.04
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levelised benefit	0.33 Rs/Unit																				

Assumptions: Wind Energy Projects						
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Wind Zone 5	
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1	
			Capacity Utilization Factor	%	32%	
			Useful Life	Years	25	
2	Project Cost	<u>Capital Cost/MW</u>	Power Plant Cost	Rs Lacs/MW	597.718	
3	Sources of Fund	<u>Debt: Equity</u>	Tariff Period	Years	13	
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	418.403	
			Total Equity Amount	Rs Lacs	179.315	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	418.40
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	13.00%
			<u>Equity Component</u>	Equity amount	Rs Lacs	179.32
				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		10.95%				
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%	
			<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	%	13.50%
6	Operation & Maintenance	<u>Power plant (FY13-14)</u>	Total O & M Expenses Escalation	Rs Lacs/MW	9.51	
				%	5.72%	

Determination of Tariff Component

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		2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	
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	21	22	23	24	25	
O&M Expenses	Rs Lakh		9.51	10.05	10.63	11.24	11.88	12.56	13.28	14.04	14.84	15.69	16.59	17.54	18.54	19.60	20.72	21.90	23.16	24.48	25.88	27.36	28.93	30.58	32.33	34.18	36.14	
Depreciation	Rs Lakh		34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	34.85	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21
Interest on term loan	Rs Lakh		52.13	47.59	43.06	38.53	34.00	29.46	24.93	20.40	15.86	11.33	6.80	2.27	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		3.35	3.28	3.21	3.14	3.07	3.00	2.93	2.87	2.81	2.76	2.87	2.81	2.23	2.29	2.35	2.41	2.48	2.56	2.63	2.71	2.80	2.89	2.99	3.09	3.20	
Return on Equity	Rs Lakh		35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	35.86	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04	43.04
Total Fixed Cost	Rs Lakh		135.70	131.64	127.61	123.61	119.65	115.73	111.85	108.02	104.23	100.49	104.13	100.50	73.01	74.13	75.32	76.57	77.89	79.29	80.76	82.33	83.98	85.72	87.57	89.52	91.59	
Levallised tariff corresponding to Useful life																												
Per Unit Cost of Generation	Unit	Levillise	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	0.54	0.34	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98	1.03	1.09	1.15	1.22	1.29	
Depreciation	Rs/kWh	1.03	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	
Int. on term loan	Rs/kWh	0.90	1.86	1.70	1.54	1.37	1.21	1.05	0.89	0.73	0.57	0.40	0.24	0.08	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	0.11	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	
RoE	Rs/kWh	1.36	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	
Total COG	Rs/kWh	3.93	4.84	4.70	4.55	4.41	4.27	4.13	3.99	3.85	3.72	3.58	3.71	3.59	2.60	2.64	2.69	2.73	2.78	2.83	2.88	2.94	3.00	3.06	3.12	3.19	3.27	
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083	
Levillised Tariff	3.93	Rs/Unit																										

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	15%
Additional Depreciation	20.00%
Income Tax (Normal Rates)	32.445%
Capital Cost Rs. Lakh	597.718

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	15.78	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	31.56	17.21	0.00	0.00

Accelerated Depreciation

Opening	%	100.00%	82.50%	61.88%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%
Allowed during the year	%	17.50%	20.63%	9.28%	7.89%	6.71%	5.70%	4.84%	4.12%	3.50%	2.98%	2.53%	2.15%	1.83%	1.55%	1.32%	1.12%	0.95%	0.81%	0.69%	0.59%
Closing	%	83%	62%	52.59%	44.70%	38.00%	32.30%	27.45%	23.34%	19.84%	16.86%	14.33%	12.18%	10.35%	8.80%	7.48%	6.36%	5.41%	4.59%	3.91%	3.32%
Accelerated Deprn.	Rs Lakh	104.60	123.28	55.48	47.15	40.08	34.07	28.96	24.61	20.92	17.78	15.12	12.85	10.92	9.28	7.89	6.71	5.70	4.85	4.12	3.50

Net Depreciation Benefit	Rs Lakh	88.82	91.72	23.92	15.59	8.52	2.51	-2.60	-6.94	-10.64	-13.78	-16.44	-18.71	-20.64	-22.28	-23.67	-24.85	-25.86	-12.37	4.12	3.50
Tax Benefit	Rs Lakh	28.82	29.76	7.76	5.06	2.76	0.81	-0.84	-2.25	-3.45	-4.47	-5.33	-6.07	-6.70	-7.23	-7.68	-8.06	-8.39	-4.01	1.34	1.14
Energy generation	MU	1.40	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Per unit benefit	Rs/Unit	2.06	1.06	0.28	0.18	0.10	0.03	-0.03	-0.08	-0.12	-0.16	-0.19	-0.22	-0.24	-0.26	-0.27	-0.29	-0.30	-0.14	0.05	0.04
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15

Levellised benefit	0.31	Rs/Unit
---------------------------	-------------	----------------

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	800.422
3	Sources of Fund	Debt: Equity	Tariff Period	Years	35
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	560.295
			Total Equity Amount	Rs Lacs	240.127
		Debt Component	Loan Amount	Rs Lacs	560.30
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Intrest Rate	%	13.00%
		Equity Component	Equity amount	Rs Lacs	240.13
			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		10.95%
4	Financial Assumptions		Income Tax	%	32.445%
		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		%	13.50%
6	Operation & Maintenance	Power plant		Rs Lacs	26.43
		Total O & M Expenses Escalation		%	5.72%

Determination of Tariff Component:																																						
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	26	27	28	29	30	31	32	33	34	35	
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	1	1	1	1	1	1	1	1	1	1	
Net Generation	MU		3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	
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	26	27	28	29	30	31	32	33	34	35	
O&M Expenses	Rs Lakh		26.43	27.94	29.54	31.23	33.02	34.90	36.90	39.01	41.24	43.60	46.10	48.73	51.52	54.47	57.58	60.88	64.36	68.04	71.93	76.05	80.40	85.00	89.86	95.00	100.43	106.18	112.25	118.67	125.46	132.63	140.22	148.24	156.72	165.69	175.16	
Depreciation	Rs Lakh		46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66	46.66
Interest on term loan	Rs Lakh		69.80	63.73	57.66	51.59	45.52	39.45	33.38	27.31	21.24	15.17	9.10	3.03	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	0.00	0.00	0.00	0.00	0.00
Interest on working C	Rs Lakh		5.25	5.19	5.14	5.09	5.05	5.02	4.99	4.96	4.95	4.94	5.16	5.16	4.33	4.50	4.67	4.85	5.04	5.25	5.46	5.69	5.93	6.18	6.45	6.73	7.04	7.35	7.69	8.04	8.42	8.81	9.23	9.68	10.14	10.64	11.16	
Return on Equity	Rs Lakh		48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		196.17	191.56	187.03	182.61	178.28	174.06	169.96	165.98	162.12	158.40	164.65	161.23	120.46	123.57	126.86	130.33	134.01	137.89	142.00	146.34	150.93	155.78	160.91	166.34	172.07	178.13	184.54	191.32	198.48	206.05	214.06	222.52	231.47	240.93	250.93	
Levillised tariff corresponding to Useful life																																						
Per Unit Cost of Ger	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	26	27	28	29	30	31	32	33	34	35	
O&M expn	Rs/kWh	1.19	0.68	0.72	0.76	0.80	0.85	0.89	0.95	1.00	1.06	1.12	1.18	1.25	1.32	1.40	1.48	1.56	1.65	1.74	1.84	1.95	2.06	2.18	2.30	2.43	2.57	2.72	2.88	3.04	3.21	3.40	3.59	3.80	4.02	4.25	4.49	
Depreciation	Rs/kWh	0.92	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Int. on term loan	Rs/kWh	0.82	1.79	1.63	1.48	1.32	1.17	1.01	0.86	0.70	0.54	0.39	0.23	0.08	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	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.11	0.12	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.29	
RoE	Rs/kWh	1.31	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	
Total COG	Rs/kWh	4.38	5.03	4.91	4.79	4.68	4.57	4.46	4.36	4.25	4.15	4.06	4.22	4.13	3.09	3.17	3.25	3.34	3.43	3.53	3.64	3.75	3.87	3.99	4.12	4.26	4.41	4.56	4.73	4.90	5.09	5.28	5.49	5.70	5.93	6.17	6.43	
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083	0.074	0.067	0.061	0.055	0.049	0.044	0.040	0.036	0.032	0.029	
Levillised Tariff	4.38	Rs/Unit																																				

Determination of Accelerated Depreciation																																				
Depreciation amount	90%																																			
Book Depreciation rate	5.28%																																			
Tax Depreciation rate	80%																																			
Additional depreciation	20.00%																																			
Income Tax (Normal Rates)	32.445%																																			
Capital Cost	800.4																																			
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	26	27	28	29	30	31	32	33	34	35
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%	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%
Book Depreciation	Rs Lakh	21.13	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	23.05	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 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%	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%	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%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	400.21	360.19	32.02	6.40	1.28	0.26	0.05	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	379.08	317.93	-10.25	-35.86	-40.98	-42.01	-42.21	-42.25	-42.26	-42.26	-42.26	-42.26	-42.26	-42.26	-42.26	-42.26	-42.26	-23.05	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
Tax Benefit	Rs Lakh	122.99	103.15	-3.32	-11.63	-13.30	-13.63	-13.70	-13.71	-13.71	-13.71	-13.71	-13.71	-13.71	-13.71	-13.71	-13.71	-13.71	-7.48	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
Energy generation	MU	1.95	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
Per unit benefit	Rs/Unit	6.30	2.64	-0.09	-0.30	-0.34	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.19	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
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.03
Tax Benefit Levellised	13.20																																			
Electricity Generation (Leve	3.71																																			
Levellised benefit	0.36	Rs/Unit																																		

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	727.657
3	Sources of Fund	Debt: Equity	Tariff Period Debt Equity Total Debt Amount Total Equity Amount	Years % % Rs Lacs Rs Lacs	13 70% 30% 509.360 218.297
		Debt Component	Loan Amount Moratorium Period Repayment Period(incl'd Moratorium) Intrest Rate	Rs Lacs years years %	509.36 0 12 13.00%
		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 % %	218.30 16% 20% 24.00% 22.86% 10.95%
4	Financial Assumptions	Income Tax Depreciation	Income Tax Depreciation Rate for first 12 years Depreciation Rate 13th year onwards	% % %	32.445% 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 13.50%
6	Operation & Maintenance	Power plant Total O & M Expenses	Escalation	Rs Lacs %	19.03 5.72%

Determination of Tariff Component:																																					
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	26	27	28	29	30	31	32	33	34	35
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	1	1	1	1	1	1	1	1	1	
Net Generation	MU		3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	
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	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		19.03	20.12	21.27	22.49	23.77	25.13	26.57	28.09	29.70	31.39	33.19	35.09	37.10	39.22	41.46	43.83	46.34	48.99	51.79	54.76	57.89	61.20	64.70	68.40	72.31	76.45	80.82	85.44	90.33	95.50	100.96	106.74	112.84	119.30	126.12
Depreciation	Rs Lakh		42.42	42.42	42.42	42.42	42.42	42.42	42.42	42.42	42.42	42.42	42.42	42.42	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34	6.34
Interest on term loan	Rs Lakh		63.46	57.94	52.42	46.90	41.39	35.87	30.35	24.83	19.31	13.80	8.28	2.76	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	0.00	0.00	0.00	
Interest on working C	Rs Lakh		4.49	4.43	4.36	4.30	4.25	4.20	4.15	4.10	4.07	4.03	4.21	4.18	3.40	3.52	3.64	3.77	3.91	4.06	4.21	4.38	4.55	4.73	4.93	5.13	5.35	5.58	5.82	6.07	6.34	6.63	6.93	7.25	7.59	7.94	8.32
Return on Equity	Rs Lakh		43.66	43.66	43.66	43.66	43.66	43.66	43.66	43.66	43.66	43.66	43.66	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39
Total Fixed Cost	Rs Lakh		173.06	168.57	164.14	159.77	155.49	151.28	147.15	143.11	139.16	135.30	140.49	136.85	99.23	101.47	103.83	106.34	108.98	111.78	114.74	117.86	121.17	124.66	128.36	132.26	136.39	140.75	145.37	150.25	155.40	160.86	166.62	172.72	179.16	185.97	193.17
Levillised tariff corresponding to Useful life																																					
Per Unit Cost of Ger	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	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh	0.86	0.49	0.52	0.55	0.58	0.61	0.64	0.68	0.72	0.76	0.80	0.85	0.90	0.95	1.00	1.06	1.12	1.19	1.26	1.33	1.40	1.48	1.57	1.66	1.75	1.85	1.96	2.07	2.19	2.31	2.45	2.59	2.74	2.89	3.06	3.23
Depreciation	Rs/kWh	0.84	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	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	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.75	1.63	1.48	1.34	1.20	1.06	0.92	0.78	0.64	0.49	0.35	0.21	0.07	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	0.00	0.00	0.00	0.00
Int. on working capita	Rs/kWh	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.11	0.11	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.19	0.20	0.21
RoE	Rs/kWh	1.19	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
Total COG	Rs/kWh	3.75	4.43	4.32	4.21	4.09	3.98	3.88	3.77	3.67	3.57	3.47	3.60	3.51	2.54	2.60	2.66	2.72	2.79	2.86	2.94	3.02	3.10	3.19	3.29	3.39	3.49	3.61	3.72	3.85	3.98	4.12	4.27	4.43	4.59	4.77	4.95
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083	0.074	0.067	0.061	0.055	0.049	0.044	0.040	0.036	0.032	0.029
Levillised Tariff	3.75	Rs/Unit																																			

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Additional depreciation	20.00%
Income Tax (Normal Rates)	32.445%
Capital Cost	727.7

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	26	27	28	29	30	31	32	33	34	35
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%	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%	
Book Depreciation	Rs Lakh	19.21	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	38.42	20.96	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 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%	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%	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%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	363.83	327.45	29.11	5.82	1.16	0.23	0.05	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	344.62	289.03	-9.31	-32.60	-37.26	-38.19	-38.37	-38.41	-38.42	-38.42	-38.42	-38.42	-38.42	-38.42	-38.42	-38.42	-38.42	-20.96	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
Tax Benefit	Rs Lakh	111.81	93.77	-3.02	-10.58	-12.09	-12.39	-12.45	-12.46	-12.46	-12.47	-12.47	-12.47	-12.47	-12.47	-12.47	-12.47	-12.47	-6.80	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
Energy generation	MU	1.95	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
Per unit benefit	Rs/Unit	5.73	2.40	-0.08	-0.27	-0.31	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32	-0.17	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	
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.06	0.05	0.04	0.04	0.03	

Tax Benefit Levelled 12.00

Electricity Generation (Leve 3.71

Levelled benefit 0.32 Rs/Unit

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	623.706
3	Sources of Fund	Debt: Equity	Tariff Period Debt Equity Total Debt Amount Total Equity Amount	Years % % Rs Lacs Rs Lacs	35 70% 30% 436.594 187.112
		Debt Component	Loan Amount Moratorium Period Repayment Period(incld Moratorium) Intrest Rate	Rs Lacs years years %	436.59 0 12 13.00%
		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 %	187.11 16% 20% 24.00% 22.86% 10.95%
4	Financial Assumptions	Income Tax Depreciation	Income Tax Depreciation Rate for first 12 years Depreciation Rate 13th year onwards	% % %	32.445% 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 13.50%
6	Operation & Maintenance	Power plant Total O & M Expenses	Escalation	Rs Lacs %	21.14 5.72%

Determination of Tariff Component:																																					
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	26	27	28	29	30	31	32	33	34	35
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	1	1	1	1	1	1	1	1	1	
Net Generation	MU		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	
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	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		21.14	22.35	23.63	24.98	26.41	27.92	29.52	31.20	32.99	34.88	36.87	38.98	41.21	43.57	46.06	48.69	51.48	54.42	57.54	60.83	64.31	67.98	71.87	75.98	80.33	84.92	89.78	94.92	100.35	106.09	112.16	118.57	125.35	132.52	140.10
Depreciation	Rs Lakh		36.36	36.36	36.36	36.36	36.36	36.36	36.36	36.36	36.36	36.36	36.36	36.36	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43
Interest on term loan	Rs Lakh		54.39	49.66	44.93	40.20	35.47	30.74	26.01	21.28	16.55	11.82	7.09	2.36	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	0.00	0.00	0.00	
Interest on working C	Rs Lakh		4.12	4.08	4.04	4.00	3.97	3.95	3.93	3.91	3.90	3.90	4.07	4.08	3.44	3.57	3.70	3.85	4.00	4.17	4.34	4.52	4.71	4.91	5.13	5.36	5.60	5.85	6.12	6.40	6.70	7.02	7.35	7.71	8.08	8.48	8.90
Return on Equity	Rs Lakh		37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.42	37.42	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91	44.91
Total Fixed Cost	Rs Lakh		153.43	149.87	146.38	142.97	139.64	136.39	133.24	130.18	127.23	124.38	129.30	126.69	94.99	97.47	100.10	102.88	105.82	108.93	112.21	115.69	119.36	123.24	127.34	131.68	136.27	141.12	146.24	151.66	157.39	163.45	169.85	176.62	183.78	191.34	199.34
Levillised tariff corresponding to Useful life																																					
Per Unit Cost of Ger	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	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh	1.42	0.81	0.86	0.91	0.96	1.02	1.07	1.13	1.20	1.27	1.34	1.42	1.50	1.58	1.67	1.77	1.87	1.98	2.09	2.21	2.34	2.47	2.61	2.76	2.92	3.09	3.26	3.45	3.65	3.86	4.08	4.31	4.56	4.82	5.09	5.39
Depreciation	Rs/kWh	1.08	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Int. on term loan	Rs/kWh	0.96	2.09	1.91	1.73	1.55	1.36	1.18	1.00	0.82	0.64	0.45	0.27	0.09	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	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.13	0.14	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.22	0.24	0.25	0.26	0.27	0.28	0.30	0.31	0.33	0.34
RoE	Rs/kWh	1.54	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
Total COG	Rs/kWh	5.16	5.90	5.76	5.63	5.50	5.37	5.24	5.12	5.00	4.89	4.78	4.97	4.87	3.65	3.75	3.85	3.95	4.07	4.19	4.31	4.45	4.59	4.74	4.89	5.06	5.24	5.42	5.62	5.83	6.05	6.28	6.53	6.79	7.06	7.35	7.66
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083	0.074	0.067	0.061	0.055	0.049	0.044	0.040	0.036	0.032	0.029
Levillised Tariff	5.16	Rs/Unit																																			

Determination of Accelerated Depreciation																																				
Depreciation amount		90%																																		
Book Depreciation rate		5.28%																																		
Tax Depreciation rate		80%																																		
Additional depreciation		20.00%																																		
Income Tax (Normal Rates)		32.445%																																		
Capital Cost		623.7																																		
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	26	27	28	29	30	31	32	33	34	35
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%	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%	
Book Depreciation	Rs Lakh	16.47	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	32.93	17.96	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 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%	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%	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%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Accelerated Deprn.	Rs Lakh	311.85	280.67	24.95	4.99	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	295.39	247.74	-7.98	-27.94	-31.93	-32.73	-32.89	-32.92	-32.93	-32.93	-32.93	-32.93	-32.93	-32.93	-32.93	-32.93	-32.93	-17.96	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
Tax Benefit	Rs Lakh	95.84	80.38	-2.59	-9.07	-10.36	-10.62	-10.67	-10.68	-10.68	-10.68	-10.68	-10.68	-10.68	-10.68	-10.68	-10.68	-10.68	-5.83	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
Energy generation	MU	1.30	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	
Per unit benefit	Rs/Unit	7.37	3.09	-0.10	-0.35	-0.40	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.22	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	
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.03
Tax Benefit Levellised		10.29																																		
Electricity Generation (Leve		2.48																																		
Levellised benefit		0.42 Rs/Unit																																		

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	571.730
3	Sources of Fund	Debt: Equity	Tariff Period	Years	13
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	400.211
			Total Equity Amount	Rs Lacs	171.519
		Debt Component	Loan Amount	Rs Lacs	400.21
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Intrest Rate	%	13.00%
		Equity Component	Equity amount	Rs Lacs	171.52
			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		10.95%
4	Financial Assumptions		Income Tax	%	32.445%
		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		Months	15%
		Maintenance Spare	(% of O&M exepenses)	Months	2
		Receivables for Debtors		%	13.50%
		Intrest On Working Capital			
6	Operation & Maintenance	Power plant		Rs Lacs	14.80
		Total O & M Expenses	Escalation	%	5.72%

Determination of Tariff Component:																																					
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	26	27	28	29	30	31	32	33	34	35
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	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
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	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		14.80	15.65	16.54	17.49	18.49	19.55	20.66	21.85	23.10	24.42	25.81	27.29	28.85	30.50	32.24	34.09	36.04	38.10	40.28	42.58	45.02	47.60	50.32	53.20	56.24	59.46	62.86	66.45	70.25	74.27	78.52	83.01	87.76	92.78	98.09
Depreciation	Rs Lakh		33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98	4.98
Interest on term loan	Rs Lakh		49.86	45.52	41.19	36.85	32.52	28.18	23.85	19.51	15.17	10.84	6.50	2.17	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	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		3.52	3.47	3.42	3.37	3.33	3.29	3.25	3.21	3.18	3.16	3.29	3.27	2.66	2.75	2.84	2.95	3.05	3.17	3.29	3.41	3.55	3.69	3.84	4.00	4.17	4.35	4.53	4.73	4.94	5.17	5.40	5.65	5.91	6.19	6.48
Return on Equity	Rs Lakh		34.30	34.30	34.30	34.30	34.30	34.30	34.30	34.30	34.30	34.30	34.30	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16	41.16
Total Fixed Cost	Rs Lakh		135.82	132.28	128.78	125.35	121.97	118.65	115.39	112.20	109.09	106.05	110.10	107.23	77.65	79.39	81.23	83.18	85.24	87.41	89.71	92.14	94.72	97.43	100.31	103.34	106.55	109.95	113.54	117.33	121.34	125.58	130.07	134.80	139.82	145.11	150.71
Levelling tariff corresponding to Useful life																																					
Per Unit Cost of Ger	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	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh	1.00	0.57	0.60	0.64	0.67	0.71	0.75	0.79	0.84	0.89	0.94	0.99	1.05	1.11	1.17	1.24	1.31	1.39	1.46	1.55	1.64	1.73	1.83	1.93	2.04	2.16	2.29	2.42	2.55	2.70	2.85	3.02	3.19	3.37	3.57	3.77
Depreciation	Rs/kWh	0.99	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	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	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Int. on term loan	Rs/kWh	0.88	1.92	1.75	1.58	1.42	1.25	1.08	0.92	0.75	0.58	0.42	0.25	0.08	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	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.13	0.14	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.13	0.13	0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25
RoE	Rs/kWh	1.41	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
Total COG	Rs/kWh	4.40	5.22	5.08	4.95	4.82	4.69	4.56	4.44	4.31	4.19	4.08	4.23	4.12	2.98	3.05	3.12	3.20	3.28	3.36	3.45	3.54	3.64	3.74	3.86	3.97	4.10	4.23	4.36	4.51	4.66	4.83	5.00	5.18	5.37	5.58	5.79
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083	0.074	0.067	0.061	0.055	0.049	0.044	0.040	0.036	0.032	0.029
Levelling Tariff	4.40	Rs/Unit																																			

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Additional depreciation	20.00%
Income Tax (Normal Rates)	32.445%
Capital Cost	571.7

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	26	27	28	29	30	31	32	33	34	35
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%	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%
Book Depreciation	Rs Lakh	15.09	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	30.19	16.47	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	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%	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%	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%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Accelerated Depm.	Rs Lakh	285.87	257.28	22.87	4.57	0.91	0.18	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	270.77	227.09	-7.32	-25.61	-29.27	-30.00	-30.15	-30.18	-30.19	-30.19	-30.19	-30.19	-30.19	-30.19	-30.19	-30.19	-30.19	-16.47	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	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	87.85	73.68	-2.37	-8.31	-9.50	-9.73	-9.78	-9.79	-9.79	-9.79	-9.79	-9.79	-9.79	-9.79	-9.79	-9.79	-9.79	-5.34	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	
Energy generation	MU	1.30	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	
Per unit benefit	Rs/Unit	6.75	2.83	-0.09	-0.32	-0.37	-0.37	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-0.21	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	
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.03

Tax Benefit Levelled	9.43
Electricity Generation (Leve	2.48
Levelled benefit	0.38 Rs/Unit

Select State

AP

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	%	10%
			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	463.336
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	324.335
			Total Equity Amount	Rs Lacs	139.001
		<u>Debt Component</u>	Loan Amount	Rs Lacs	324.335
			Moratorium Period	years	0
			Repayment Period (incl. Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	139.001
			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)	%	10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
		<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 expenses)		15%
		Receivables for Debtors		Months	2
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4
		Interest On Working Capital		%	13.50%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4000
			During Stabilization Period	Kcal/kwh	4000
		<u>Biomass</u>	Base Price	Rs/T	2480.55
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	25.37
		Total O & M Expenses Escalation		%	5.72%

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			0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU			5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Vaible 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			171.20	221.25	232.31	243.93	256.12	268.93	282.37	296.49	311.32	326.88	343.23	360.39	378.41	397.33	417.19	438.05	459.96	482.95	507.10	532.46
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			25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh			27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Interest on term loan	Rs Lakh			40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh			15.42	18.87	19.64	20.45	21.31	22.21	23.16	24.17	25.23	26.35	27.66	28.90	29.90	31.36	32.90	34.51	36.21	37.99	39.87	41.84
Return on Equity	Rs Lakh			27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh			136.00	137.40	136.19	135.10	134.16	133.36	132.72	132.24	131.93	131.80	131.75	131.81	124.32	128.61	133.14	137.91	142.95	148.27	153.88	159.80
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		4.69	3.34	3.51	3.68	3.87	4.06	4.26	4.48	4.70	4.94	5.18	5.44	5.71	6.00	6.30	6.61	6.95	7.29	7.66	8.04	8.44
O&M expn	Rs/kWh		0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh		0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh		0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		0.39	0.30	0.30	0.31	0.32	0.34	0.35	0.37	0.38	0.40	0.42	0.44	0.46	0.47	0.50	0.52	0.55	0.57	0.60	0.63	0.66
RoE	Rs/kWh		0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh		6.90	5.99	5.69	5.84	6.01	6.19	6.38	6.58	6.80	7.03	7.27	7.62	7.90	7.97	8.34	8.73	9.13	9.56	10.01	10.48	10.98
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)		3.34	Rs/Kwh																				
Levallised Tariff (Fixed)		2.21	Rs/Kwh																				
Applicable Tariff (FY2013-14)		5.55	Rs/Kwh																				

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)	32.45%
Capital Cost	463.336

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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15

Levellised benefit **0.14** (Rs/kWh)

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	%	10%
			Auxillary Consumption after stabilisation	%	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	463.336
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	324.335
			Total Equity Amout	Rs Lacs	139.001
		<u>Debt Component</u>	Loan Amount	Rs Lacs	324.335
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	139.001
			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)	%	10.95%	
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
			<u>Depreciation</u>	Depreciation Rate(power plant)	%
					Depreciation Rate 13th year onwards
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	%	13.50%	
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4000
			During Stablization Period	Kcal/kwh	4000
		<u>Biomass</u>	Base Price	Rs/T	2823.44
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant	Rs Lacs	25.37	
		Total O & M Expenses Escalation	%	5.72%	

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		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
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		194.87	251.83	264.42	277.64	291.52	306.10	321.41	337.48	354.35	372.07	390.67	410.20	430.71	452.25	474.86	498.61	523.54	549.71	577.20	606.06
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		25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh		27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Interest on term loan	Rs Lakh		40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		17.05	20.98	21.86	22.78	23.75	24.78	25.86	27.00	28.20	29.47	30.93	32.34	33.51	35.15	36.88	38.69	40.60	42.60	44.71	46.92
Return on Equity	Rs Lakh		27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh		137.64	139.51	138.40	137.43	136.61	135.93	135.42	135.07	134.90	134.92	140.82	141.25	127.93	132.40	137.12	142.10	147.34	152.88	158.72	164.88
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	5.34	3.80	3.99	4.19	4.40	4.62	4.85	5.10	5.35	5.62	5.90	6.19	6.50	6.83	7.17	7.53	7.91	8.30	8.72	9.15	9.61
O&M expn	Rs/kWh	0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh	0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.43	0.33	0.33	0.35	0.36	0.38	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.56	0.58	0.61	0.64	0.68	0.71	0.74
RoE	Rs/kWh	0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh	7.59	6.49	6.20	6.39	6.58	6.79	7.01	7.24	7.49	7.76	8.04	8.43	8.74	8.86	9.27	9.70	10.16	10.64	11.14	11.67	12.22
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.80	Rs/Kwh																				
Levelling Tariff (Fixed)	2.25	Rs/Kwh																				
Applicable Tariff (FY2013-14)	6.05	Rs/Kwh																				

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)	32.45%
Capital Cost	463.336

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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.14 (Rs/kWh)																				

Select State

Maharashtra

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	%	10%
			Auxillary Consumption after stabilisation	%	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	463.336
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	324.335
			Total Equity Amount	Rs Lacs	139.001
		<u>Debt Component</u>	Loan Amount	Rs Lacs	324.335
			Moratorium Period	years	0
			Repayment Period(inclnd Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	139.001
			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)	%	10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
		<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		%	13.50%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4000
			During Stablization Period	Kcal/kwh	4000
		<u>Biomass</u>	Base Price	Rs/T	2887.73
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	25.37
		Total O & M Expenses Escalation		%	5.72%

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		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
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		199.31	257.56	270.44	283.96	298.16	313.07	328.72	345.16	362.42	380.54	399.57	419.55	440.52	462.55	485.68	509.96	535.46	562.23	590.34	619.86
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		25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh		27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Interest on term loan	Rs Lakh		40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		17.36	21.38	22.27	23.21	24.21	25.26	26.36	27.53	28.76	30.05	31.55	32.99	34.19	35.86	37.63	39.48	41.42	43.47	45.61	47.87
Return on Equity	Rs Lakh		27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh		137.95	139.91	138.82	137.87	137.07	136.41	135.92	135.60	135.46	135.50	141.44	141.89	128.61	133.11	137.87	142.88	148.17	153.75	159.63	165.84
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	5.46	3.89	4.08	4.29	4.50	4.73	4.96	5.21	5.47	5.75	6.03	6.34	6.65	6.98	7.33	7.70	8.09	8.49	8.91	9.36	9.83
O&M expn	Rs/kWh	0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh	0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.44	0.34	0.34	0.35	0.37	0.38	0.40	0.42	0.44	0.46	0.48	0.50	0.52	0.54	0.57	0.60	0.63	0.66	0.69	0.72	0.76
RoE	Rs/kWh	0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh	7.72	6.58	6.30	6.49	6.69	6.90	7.13	7.37	7.62	7.89	8.18	8.58	8.90	9.02	9.44	9.89	10.35	10.84	11.35	11.89	12.46
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.89	Rs/Kwh																				
Levelling Tariff (Fixed)	2.26	Rs/Kwh																				
Applicable Tariff (FY2013-14)	6.15	Rs/Kwh																				

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)	32.45%
Capital Cost	463.336

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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	

Levellised benefit **0.14 (Rs/kWh)**

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	MW	1
			Auxillary Consumption during stabilisation	%	10%
			Auxillary Consumption after stabilisation	%	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	463.336
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	324.335
			Total Equity Amout	Rs Lacs	139.001
		<u>Debt Component</u>	Loan Amount	Rs Lacs	324.335
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	139.001
			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)	%	10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
		<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		%	13.50%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4000
			During Stablization Period	Kcal/kwh	4000
		<u>Biomass</u>	Base Price	Rs/T	2953.09
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	25.37
		Total O & M Expenses Escalation		%	5.72%

Z

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		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
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		203.82	263.39	276.56	290.39	304.91	320.16	336.17	352.97	370.62	389.15	408.61	429.04	450.49	473.02	496.67	521.50	547.58	574.96	603.70	633.89
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		25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh		27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01
Interest on term loan	Rs Lakh		40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		17.67	21.78	22.69	23.66	24.67	25.75	26.88	28.07	29.32	30.65	32.17	33.64	34.88	36.59	38.39	40.27	42.26	44.35	46.54	48.84
Return on Equity	Rs Lakh		27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh		138.26	140.31	139.24	138.31	137.53	136.90	136.44	136.14	136.02	136.10	142.06	142.55	129.30	133.84	138.63	143.68	149.01	154.62	160.55	166.80
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	5.59	3.98	4.18	4.38	4.60	4.83	5.08	5.33	5.60	5.88	6.17	6.48	6.80	7.14	7.50	7.87	8.27	8.68	9.12	9.57	10.05
O&M expn	Rs/kWh	0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh	0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.45	0.34	0.35	0.36	0.38	0.39	0.41	0.43	0.45	0.46	0.49	0.51	0.53	0.55	0.58	0.61	0.64	0.67	0.70	0.74	0.77
RoE	Rs/kWh	0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh	7.86	6.68	6.40	6.59	6.80	7.01	7.25	7.49	7.75	8.03	8.33	8.73	9.06	9.19	9.62	10.07	10.55	11.04	11.57	12.12	12.69
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.98	Rs/kwh																				
Levelling Tariff (Fixed)	2.27	Rs/kwh																				
Applicable Tariff (FY2013-14)	6.24	Rs/kwh																				

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)	32.45%																					
Capital Cost	463.336																					
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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	
Levellised benefit	0.14 (Rs/kWh)																					

Select State

Rajasthan

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	%	10%
			Auxillary Consumption after stabilisation	%	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	463.336
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	324.335
			Total Equity Amout	Rs Lacs	139.001
		<u>Debt Component</u>	Loan Amount	Rs Lacs	324.335
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	139.001
			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)	%	10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
		<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		%	13.50%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4000
			During Stablization Period	Kcal/kwh	4000
		<u>Biomass</u>	Base Price	Rs/T	2464.48
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	25.37
		<u>Total O & M Expenses Escalation</u>		%	5.72%

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		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

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		170.09	219.81	230.80	242.34	254.46	267.18	280.54	294.57	309.30	324.76	341.00	358.05	375.96	394.75	414.49	435.22	456.98	479.83	503.82	529.01

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		25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh		27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Interest on term loan	Rs Lakh		40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		15.34	18.77	19.53	20.34	21.19	22.09	23.04	24.04	25.09	26.20	27.50	28.74	29.73	31.18	32.71	34.32	36.00	37.78	39.64	41.60
Return on Equity	Rs Lakh		27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh		135.93	137.30	136.08	135.00	134.05	133.24	132.59	132.11	131.79	131.65	137.39	137.65	124.15	128.43	132.95	137.72	142.75	148.06	153.65	159.56

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	4.66	3.32	3.49	3.66	3.84	4.03	4.24	4.45	4.67	4.90	5.15	5.41	5.68	5.96	6.26	6.57	6.90	7.25	7.61	7.99	8.39
O&M expn	Rs/kWh	0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh	0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.38	0.30	0.30	0.31	0.32	0.34	0.35	0.37	0.38	0.40	0.42	0.44	0.46	0.47	0.49	0.52	0.54	0.57	0.60	0.63	0.66
RoE	Rs/kWh	0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh	6.87	5.97	5.66	5.82	5.98	6.16	6.35	6.55	6.76	6.99	7.24	7.58	7.86	7.93	8.30	8.68	9.08	9.51	9.95	10.42	10.92

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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139

Variable Cost (FY2013-14)	3.32	Rs/Kwh
Levillised Tariff (Fixed)	2.20	Rs/Kwh
Applicable Tariff (FY2013-14)	5.52	Rs/Kwh

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)	32.45%																				
Capital Cost	463.336																				
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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.14 (Rs/kWh)																				

Select State

UP

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	%	10%
			Auxillary Consumption after stabilisation	%	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	463.336
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	324.335
			Total Equity Amout	Rs Lacs	139.001
		<u>Debt Component</u>	Loan Amount	Rs Lacs	324.335
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	139.001
			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)	%	10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
		<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		%	13.50%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4000
			During Stablization Period	Kcal/kwh	4000
		<u>Biomass</u>	Base Price	Rs/T	2523.41
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	25.37
		Total O & M Expenses Escalation		%	5.72%

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		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

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		174.16	225.07	236.32	248.14	260.55	273.57	287.25	301.62	316.70	332.53	349.16	366.62	384.95	404.19	424.40	445.62	467.90	491.30	515.86	541.66

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		25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh		27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Interest on term loan	Rs Lakh		40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		15.62	19.13	19.92	20.74	21.61	22.53	23.50	24.52	25.60	26.74	28.07	29.33	30.35	31.83	33.40	35.04	36.76	38.57	40.47	42.47
Return on Equity	Rs Lakh		27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh		136.21	137.66	136.46	135.40	134.47	133.69	133.06	132.59	132.30	132.19	137.96	138.24	124.77	129.08	133.64	138.44	143.50	148.85	154.49	160.44

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	4.78	3.40	3.57	3.75	3.93	4.13	4.34	4.55	4.78	5.02	5.27	5.54	5.81	6.10	6.41	6.73	7.07	7.42	7.79	8.18	8.59
O&M expn	Rs/kWh	0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh	0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.39	0.30	0.30	0.32	0.33	0.34	0.36	0.37	0.39	0.41	0.42	0.44	0.47	0.48	0.50	0.53	0.56	0.58	0.61	0.64	0.67
RoE	Rs/kWh	0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh	6.99	6.06	5.75	5.91	6.08	6.26	6.46	6.66	6.88	7.12	7.37	7.72	8.00	8.08	8.46	8.85	9.26	9.69	10.15	10.63	11.13

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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139

Variable Cost (FY2013-14)	3.40	Rs/kWh
Levelling Tariff (Fixed)	2.21	Rs/kWh
Applicable Tariff (FY2013-14)	5.61	Rs/kWh

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)	32.45%
Capital Cost	463.336

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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levillised benefit	0.14	(Rs/kWh)																			

Select State

TN

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	%	10%
			Auxillary Consumption after stabilisation	%	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	463.336
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	324.335
			Total Equity Amout	Rs Lacs	139.001
		<u>Debt Component</u>	Loan Amount	Rs Lacs	324.335
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	139.001
			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)	%	10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
		<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		%	13.50%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	4000
			During Stablization Period	Kcal/kwh	4000
		<u>Biomass</u>	Base Price	Rs/T	2439.83
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	25.37
		<u>Total O & M Expenses Escalation</u>		%	5.72%

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		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
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		168.39	217.62	228.50	239.92	251.92	264.51	277.74	291.63	306.21	321.52	337.59	354.47	372.20	390.81	410.35	430.86	452.41	475.03	498.78	523.72
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		25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh		27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Interest on term loan	Rs Lakh		40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		15.22	18.62	19.37	20.17	21.01	21.90	22.84	23.83	24.88	25.98	27.27	28.49	29.47	30.91	32.42	34.02	35.69	37.45	39.29	41.23
Return on Equity	Rs Lakh		27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh		135.81	137.15	135.92	134.83	133.87	133.06	132.40	131.90	131.58	131.43	131.16	130.70	129.99	128.97	127.62	125.94	123.92	121.55	118.81	115.70
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	4.62	3.29	3.45	3.62	3.80	3.99	4.19	4.40	4.62	4.85	5.10	5.35	5.62	5.90	6.20	6.51	6.83	7.17	7.53	7.91	8.30
O&M expn	Rs/kWh	0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh	0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.38	0.30	0.30	0.31	0.32	0.33	0.35	0.36	0.38	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.54	0.57	0.59	0.62	0.65
RoE	Rs/kWh	0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh	6.82	5.94	5.62	5.78	5.94	6.12	6.30	6.50	6.72	6.94	7.18	7.53	7.80	7.87	8.23	8.61	9.01	9.43	9.87	10.34	10.83
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.29	Rs/Kwh																				
Levillised Tariff (Fixed)	2.20	Rs/Kwh																				
Applicable Tariff (FY2013-14)	5.49	Rs/Kwh																				

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)	32.45%																				
Capital Cost	463.336																				
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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.14 (Rs/kWh)																				

Select State

Others

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	%	10%	
			Auxillary Consumption after stabilisation	%	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	463.336	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	324.335	
			Total Equity Amout	Rs Lacs	139.001	
			Debt Component	Loan Amount	Rs Lacs	324.335
				Moratorium Period	years	0
				Repayment Period(incld Moratorium)	years	12
				Interest Rate	%	13.00%
			Equity Component	Equity amount	Rs Lacs	139.001
				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)	%	10.95%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%	
			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	%	13.50%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	4000	
			During Stablization Period	Kcal/kwh	4000	
		Biomass	Base Price	Rs/T	2653.07	
			GCV - Biomass	Kcal/kg	3300	
			Biomass Price Escalation Factor	%	5.00%	
7	Operation & Maintenance	power plant	Total O & M Expenses	Rs Lacs	25.37	
			Escalation	%	5.72%	

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		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

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		183.11	236.63	248.47	260.89	273.93	287.63	302.01	317.11	332.97	349.62	367.10	385.45	404.72	424.96	446.21	468.52	491.95	516.54	542.37	569.49

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		25.37	26.82	28.36	29.98	31.69	33.50	35.42	37.45	39.59	41.85	44.25	46.78	49.45	52.28	55.27	58.44	61.78	65.31	69.05	73.00
Depreciation	Rs Lakh		27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61
Interest on term loan	Rs Lakh		40.41	36.89	33.38	29.87	26.35	22.84	19.32	15.81	12.30	8.78	5.27	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		16.24	19.93	20.75	21.62	22.54	23.50	24.52	25.59	26.72	27.92	29.30	30.63	31.71	33.27	34.90	36.62	38.42	40.31	42.30	44.39
Return on Equity	Rs Lakh		27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	27.80	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
Total Fixed Cost	Rs Lakh		136.83	138.46	137.30	136.28	135.39	134.66	134.08	133.66	133.42	133.37	139.20	139.54	126.14	130.52	135.14	140.02	145.16	150.59	156.32	162.36

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	5.02	3.57	3.75	3.94	4.14	4.34	4.56	4.79	5.03	5.28	5.54	5.82	6.11	6.42	6.74	7.07	7.43	7.80	8.19	8.60	9.03
O&M expn	Rs/kWh	0.61	0.50	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.88	0.93	0.98	1.04	1.09	1.16
Depreciation	Rs/kWh	0.39	0.53	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.34	0.79	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.41	0.32	0.32	0.33	0.34	0.36	0.37	0.39	0.41	0.42	0.44	0.46	0.49	0.50	0.53	0.55	0.58	0.61	0.64	0.67	0.70
RoE	Rs/kWh	0.48	0.54	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh	7.25	6.24	5.95	6.12	6.30	6.49	6.70	6.91	7.15	7.39	7.66	8.03	8.32	8.42	8.81	9.22	9.65	10.10	10.58	11.08	11.60

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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139

Variable Cost (FY2013-14)	3.57	Rs/Kwh
Levallised Tariff (Fixed)	2.23	Rs/Kwh
Applicable Tariff (FY2013-14)	5.80	Rs/Kwh

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)	32.45%
Capital Cost	463.336

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	12.23	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	24.46	13.34	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	231.67	208.50	18.53	3.71	0.74	0.15	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	219.44	184.04	-5.93	-20.76	-23.72	-24.32	-24.43	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-24.46	-13.34	0.00	0.00
Tax Benefit	Rs Lakh	71.20	59.71	-1.92	-6.73	-7.70	-7.89	-7.93	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-7.94	-4.33	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.78	0.95	-0.03	-0.11	-0.12	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.07	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	

Levillised benefit	0.14	(Rs/kWh)
---------------------------	-------------	-----------------

Select State

AP

Non Fossil Fuel based co-generation Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisatic	%	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	437.306
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	306.114
			Total Equity Amout	Rs Lacs	131.192
		Debt Component	Loan Amount	Rs Lacs	306.11
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	13.00%
		Equity Component	Equity amount	Rs Lacs	131.19
			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)	%	10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%
			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 exepenses)	15%
		Receivables for Debtors	Months	2	
		For Variable Charges	Months	4	
		Biomass Stock			
Interest On Working Capital	%	13.50%			
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		Biomass	Bagasse Price	Rs/T	1400.47
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant	Rs. Lacs	16.92	
		Total O & M Expenses Escalation	%	5.72%	

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		16.92	17.89	18.91	19.99	21.14	22.35	23.62	24.97	26.40	27.91	29.51	31.20	32.98	34.87	36.86	38.97	41.20	43.56	46.05	48.68
Depreciation	Rs Lakh		25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
Interest on term loan	Rs Lakh		38.14	34.82	31.50	28.19	24.87	21.56	18.24	14.92	11.61	8.29	4.97	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		9.10	9.38	9.69	10.01	10.34	10.71	11.09	11.50	11.93	12.39	12.99	13.51	13.75	14.40	15.09	15.81	16.57	17.36	18.20	19.08
Return on Equity	Rs Lakh		26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49
Total Fixed Cost	Rs Lakh		115.89	113.83	111.83	109.92	108.09	106.34	104.69	103.13	101.67	100.32	104.46	103.34	89.18	91.71	94.39	97.22	100.21	103.36	106.69	110.20
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	3.44	2.45	2.57	2.70	2.83	2.98	3.13	3.28	3.45	3.62	3.80	3.99	4.19	4.40	4.62	4.85	5.09	5.35	5.61	5.89	6.19
O&M expn	Rs/kWh	0.70	0.47	0.50	0.52	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
Depreciation	Rs/kWh	0.63	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Int. on term loan	Rs/kWh	0.54	1.06	0.97	0.87	0.78	0.69	0.60	0.51	0.41	0.32	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	0.32	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.36	0.37	0.38	0.40	0.42	0.44	0.46	0.48	0.50	0.53
RoE	Rs/kWh	0.77	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Total COG	Rs/kWh	6.39	5.66	5.73	5.80	5.88	5.97	6.07	6.18	6.31	6.44	6.58	6.89	7.05	6.87	7.16	7.47	7.79	8.12	8.48	8.85	9.24
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	2.45	Rs/Kwh																				
Levelling Tariff (Fixed)	2.95	Rs/Kwh																				
Applicable Tariff (FY2013-14)	5.40	Rs/Kwh																				

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)	32.445%
Capital Cost Rs. Lakh	437.306

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	11.54	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	12.59	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	218.65	196.79	17.49	3.50	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

Net Depreciation Benefit	Rs Lakh	207.11	173.70	-5.60	-19.59	-22.39	-22.95	-23.06	-23.08	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-12.59	0.00	0.00
Tax Benefit	Rs Lakh	67.20	56.36	-1.82	-6.36	-7.26	-7.45	-7.48	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-4.09	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
Per unit benefit	Rs/Unit	3.73	1.56	-0.05	-0.18	-0.20	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.11	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15

Levellised benefit **0.24** **(Rs/kWh)**

Select State

Harayana

Non Fossil Fuel based co-generation Projects

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	%	8.50%	
			Auxillary Consumption after stabilisation	%	8.50%	
			PLF(Stabilization for 6 months)	%	53%	
			PLF(during first year after Stabilization)	%	53%	
			PLF(second year onwards)	%	53%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	437.306	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	306.114	
		Debt Component	Total Equity Amount	Rs Lacs	131.192	
			Loan Amount	Rs Lacs	306.11	
			Moratorium Period	years	0	
			Repayment Period(incl Moratorium)	years	12	
		Equity Component	Interest Rate	%	13.00%	
			Equity amount	Rs Lacs	131.19	
			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%	
		4	Financial Assumptions	Fiscal Assumptions	Discount Rate (equiv. to WACC)	%
Income Tax	%				32.445%	
5	Working Capital	Depreciation	Depreciation Rate(power plant)	%	5.83%	
			Depreciation Rate 13th year onwards	%	2.51%	
6	Fuel Related Assumptions	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	%	13.50%	
			Heat Rate	After Stabilisation period	Kcal/kwh	3600
7	Operation & Maintenance	power plant	During Stabilization Period	Kcal/kwh	3600	
			Biomass	Bagasse Price	Rs/T	1991.94
			GCV - Bagasse	Kcal/kg	2250	
			Bagasse Price Escalation Factor	%	5.00%	
7	Operation & Maintenance	power plant	Total O & M Expenses Escalation	Rs. Lacs	16.92	
			Total O & M Expenses Escalation	%	5.72%	

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		16.92	17.89	18.91	19.99	21.14	22.35	23.62	24.97	26.40	27.91	29.51	31.20	32.98	34.87	36.86	38.97	41.20	43.56	46.05	48.68
Depreciation	Rs Lakh		25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
Interest on term loan	Rs Lakh		38.14	34.82	31.50	28.19	24.87	21.56	18.24	14.92	11.61	8.29	4.97	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		13.22	13.71	14.23	14.77	15.35	15.96	16.61	17.29	18.01	18.78	19.70	20.55	21.15	22.17	23.24	24.37	25.56	26.80	28.11	29.49
Return on Equity	Rs Lakh		26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49
Total Fixed Cost	Rs Lakh		120.01	118.15	116.37	114.69	113.09	111.60	110.20	108.92	107.76	106.71	111.17	110.39	96.57	99.48	102.55	105.79	109.20	112.80	116.60	120.61
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	4.89	3.48	3.66	3.84	4.03	4.23	4.45	4.67	4.90	5.15	5.40	5.67	5.96	6.26	6.57	6.90	7.24	7.60	7.98	8.38	8.80
O&M expn	Rs/kWh	0.59	0.40	0.42	0.45	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
Depreciation	Rs/kWh	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.46	0.90	0.82	0.74	0.66	0.59	0.51	0.43	0.35	0.27	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	0.41	0.31	0.32	0.33	0.35	0.36	0.38	0.39	0.41	0.42	0.44	0.46	0.48	0.50	0.52	0.55	0.57	0.60	0.63	0.66	0.69
RoE	Rs/kWh	0.65	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Total COG	Rs/kWh	7.54	6.31	6.44	6.58	6.73	6.90	7.07	7.26	7.47	7.68	7.92	8.29	8.56	8.53	8.91	9.31	9.73	10.17	10.64	11.13	11.64
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.48	Rs/Kwh																				
Levelling Tariff (Fixed)	2.64	Rs/Kwh																				
Applicable Tariff (FY2013-14)	6.13	Rs/Kwh																				

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)	32.445%
Capital Cost Rs. Lakh	437.306

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	11.54	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	12.59	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	218.65	196.79	17.49	3.50	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

Net Depreciation Benefit	Rs Lakh	207.11	173.70	-5.60	-19.59	-22.39	-22.95	-23.06	-23.08	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-12.59	0.00	0.00
Tax Benefit	Rs Lakh	67.20	56.36	-1.82	-6.36	-7.26	-7.45	-7.48	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-4.09	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
Per unit benefit	Rs/Unit	3.16	1.33	-0.04	-0.15	-0.17	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15

Levellised benefit **0.20** **(Rs/kWh)**

Select State

Maharashtra

Non Fossil Fuel based co-generation Projects

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	%	8.50%		
			Auxillary Consumption after stabilisation	%	8.50%		
			PLF(Stabilization for 6 months)	%	60%		
			PLF(during first year after Stabilization)	%	60%		
			PLF(second year onwards)	%	60%		
			Useful Life	Years	20		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	437.306		
3	Financial Assumptions	Debt: Equity	Debt	%	70%		
			Equity	%	30%		
			Total Debt Amount	Rs Lacs	306.114		
			Total Equity Amount	Rs Lacs	131.192		
			Debt Component		Loan Amount	Rs Lacs	306.11
					Moratorium Period	years	0
				Repayment Period(incl Moratorium)	years	12	
				Interest Rate	%	13.00%	
		Equity Component		Equity amount	Rs Lacs	131.19	
				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)	%	10.95%	
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%		
			Depreciation		Depreciation Rate(power plant)	%	5.83%
					Depreciation Rate 13th year onwards	%	2.51%
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	1		
					15%		
				Months	2		
				Months	4		
				%	13.50%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600		
			During Stabilization Period	Kcal/kwh	3600		
		Biomass	Bagasse Price	Rs/T	1963.01		
			GCV - Bagasse	Kcal/kg	2250		
			Bagasse Price Escalation Factor		5.00%		
7	Operation & Maintenance	power plant Total O & M Expenses Escalation		Rs. Lacs	16.92		
				%	5.72%		

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		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	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	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	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		16.92	17.89	18.91	19.99	21.14	22.35	23.62	24.97	26.40	27.91	29.51	31.20	32.98	34.87	36.86	38.97	41.20	43.56	46.05	48.68
Depreciation	Rs Lakh		25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49
Interest on term loan	Rs Lakh		38.14	34.82	31.50	28.19	24.87	21.56	18.24	14.92	11.61	8.29	4.97	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		14.40	14.95	15.53	16.14	16.79	17.47	18.19	18.95	19.76	20.61	21.62	22.57	23.27	24.40	25.58	26.83	28.14	29.51	30.96	32.47
Return on Equity	Rs Lakh		26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49
Total Fixed Cost	Rs Lakh		121.19	119.39	117.68	116.05	114.53	113.10	111.79	110.59	109.50	108.55	113.09	112.41	98.69	101.71	104.89	108.24	111.78	115.51	119.45	123.60
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	4.82	3.43	3.60	3.78	3.97	4.17	4.38	4.60	4.83	5.07	5.33	5.59	5.87	6.16	6.47	6.80	7.14	7.49	7.87	8.26	8.67
O&M expn	Rs/kWh	0.52	0.35	0.37	0.39	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.69	0.73	0.77	0.81	0.86	0.91	0.96	1.01
Depreciation	Rs/kWh	0.47	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Int. on term loan	Rs/kWh	0.40	0.79	0.72	0.66	0.59	0.52	0.45	0.38	0.31	0.24	0.17	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.40	0.30	0.31	0.32	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	0.59	0.61	0.64	0.68
RoE	Rs/kWh	0.57	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	7.19	5.95	6.09	6.23	6.39	6.55	6.73	6.92	7.13	7.35	7.58	7.94	8.21	8.22	8.59	8.98	9.39	9.82	10.27	10.74	11.24
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.43	Rs/kWh																				
Levelling Tariff (Fixed)	2.37	Rs/kWh																				
Applicable Tariff (FY2013-14)	5.80	Rs/kWh																				

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)		32.445%																				
Capital Cost Rs. Lakh		437.306																				
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	11.54	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	12.59	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	218.65	196.79	17.49	3.50	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	207.11	173.70	-5.60	-19.59	-22.39	-22.95	-23.06	-23.08	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-12.59	0.00	0.00
Tax Benefit	Rs Lakh	67.20	56.36	-1.82	-6.36	-7.26	-7.45	-7.48	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-4.09	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	2.79	1.17	-0.04	-0.13	-0.15	-0.15	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.08	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	
Levellised benefit	0.18	(Rs/kWh)																				

Select State

Punjab

Non Fossil Fuel based co-generation Projects

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	%	8.50%		
			Auxillary Consumption after stabilisation	%	8.50%		
			PLF(Stabilization for 6 months)	%	53%		
			PLF(during first year after Stabilization)	%	53%		
			PLF(second year onwards)	%	53%		
			Useful Life	Years	20		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	437.306		
3	Financial Assumptions	Debt: Equity	Debt	%	70%		
			Equity	%	30%		
			Total Debt Amount	Rs Lacs	306.114		
			Total Equity Amount	Rs Lacs	131.192		
			Debt Component		Loan Amount	Rs Lacs	306.11
					Moratorium Period	years	0
				Repayment Period(incl Moratorium)	years	12	
				Interest Rate	%	13.00%	
		Equity Component		Equity amount	Rs Lacs	131.19	
				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)	%	10.95%	
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%		
			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	%	13.50%	
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600		
			During Stabilization Period	Kcal/kwh	3600		
		Biomass		Bagasse Price	Rs/T	1753.00	
				GCV - Bagasse	Kcal/kg	2250	
				Bagasse Price Escalation Factor		5.00%	
7	Operation & Maintenance	power plant		Rs. Lacs	16.92		
		Total O & M Expenses Escalation		%	5.72%		

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	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	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	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	4.25
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		16.92	17.89	18.91	19.99	21.14	22.35	23.62	24.97	26.40	27.91	29.51	31.20	32.98	34.87	36.86	38.97	41.20	43.56	46.05	48.68	
Depreciation	Rs Lakh		25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
Interest on term loan	Rs Lakh		38.14	34.82	31.50	28.19	24.87	21.56	18.24	14.92	11.61	8.29	4.97	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		12.00	12.42	12.87	13.35	13.86	14.40	14.97	15.57	16.20	16.87	17.70	18.45	18.95	19.86	20.82	21.82	22.88	23.99	25.16	26.39	
Return on Equity	Rs Lakh		26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49
Total Fixed Cost	Rs Lakh		118.79	116.86	115.02	113.27	111.60	110.03	108.56	107.20	105.95	104.81	109.17	108.29	94.37	97.17	100.12	103.24	106.52	109.99	113.65	117.51	
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		4.31	3.07	3.22	3.38	3.55	3.73	3.91	4.11	4.31	4.53	4.76	4.99	5.24	5.50	5.78	6.07	6.37	6.69	7.03	7.38	7.75
O&M expn	Rs/kWh		0.59	0.40	0.42	0.45	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
Depreciation	Rs/kWh		0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh		0.46	0.90	0.82	0.74	0.66	0.59	0.51	0.43	0.35	0.27	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		0.37	0.28	0.29	0.30	0.31	0.33	0.34	0.35	0.37	0.38	0.40	0.42	0.43	0.45	0.47	0.49	0.51	0.54	0.56	0.59	0.62
RoE	Rs/kWh		0.65	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Total COG	Rs/kWh		6.91	5.86	5.97	6.09	6.21	6.35	6.50	6.66	6.84	7.02	7.22	7.56	7.79	7.73	8.07	8.43	8.80	9.20	9.62	10.05	10.51
Levallised Tariff																							
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.07	Rs/Kwh																					
Levallised Tariff (Fixed)	2.60	Rs/Kwh																					
Applicable Tariff (FY2013-14)	5.67	Rs/Kwh																					

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)		32.445%																				
Capital Cost Rs. Lakh		437.306																				
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	11.54	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	12.59	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	218.65	196.79	17.49	3.50	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	
Net Depreciation Benefit	Rs Lakh	207.11	173.70	-5.60	-19.59	-22.39	-22.95	-23.06	-23.08	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-12.59	0.00	0.00	
Tax Benefit	Rs Lakh	67.20	56.36	-1.82	-6.36	-7.26	-7.45	-7.48	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-4.09	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	
Per unit benefit	Rs/Unit	3.16	1.33	-0.04	-0.15	-0.17	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	
Levellised benefit	0.20	(Rs/kWh)																				

Select State

UP

Non Fossil Fuel based co-generation Projects

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	%	8.50%
			Auxillary Consumption after stabilisation	%	8.50%
			PLF(Stabilization for 6 months)	%	45%
			PLF(during first year after Stabilization)	%	45%
			PLF(second year onwards)	%	45%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	437.306
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	306.114
			Total Equity Amount	Rs Lacs	131.192
		Debt Component	Loan Amount	Rs Lacs	306.11
			Moratorium Period	years	0
			Repayment Period(incl Moratorium)	years	12
			Interest Rate	%	13.00%
		Equity Component	Equity amount	Rs Lacs	131.19
			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)	%	10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%
		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		%	13.50%
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stabilization Period	Kcal/kwh	3600
		Biomass	Bagasse Price	Rs/T	1562.27
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs. Lacs	16.92
		Total O & M Expenses Escalation		%	5.72%

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																						
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		16.92	17.89	18.91	19.99	21.14	22.35	23.62	24.97	26.40	27.91	29.51	31.20	32.98	34.87	36.86	38.97	41.20	43.56	46.05	48.68
Depreciation	Rs Lakh		25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
Interest on term loan	Rs Lakh		38.14	34.82	31.50	28.19	24.87	21.56	18.24	14.92	11.61	8.29	4.97	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		9.81	10.12	10.46	10.82	11.20	11.61	12.03	12.49	12.97	13.48	14.14	14.71	15.02	15.73	16.49	17.28	18.11	18.98	19.90	20.86
Return on Equity	Rs Lakh		26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49
Total Fixed Cost	Rs Lakh		116.60	114.57	112.61	110.73	108.94	107.24	105.63	104.12	102.71	101.42	105.61	104.55	90.44	93.04	95.79	98.69	101.75	104.98	108.39	111.98
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	3.84	2.73	2.87	3.01	3.16	3.32	3.49	3.66	3.84	4.04	4.24	4.45	4.67	4.91	5.15	5.41	5.68	5.96	6.26	6.57	6.90
O&M expn	Rs/kWh	0.70	0.47	0.50	0.52	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
Depreciation	Rs/kWh	0.63	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Int. on term loan	Rs/kWh	0.54	1.06	0.97	0.87	0.78	0.69	0.60	0.51	0.41	0.32	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	0.35	0.27	0.28	0.29	0.30	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	0.53	0.55	0.58
RoE	Rs/kWh	0.77	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Total COG	Rs/kWh	6.82	5.96	6.04	6.13	6.23	6.34	6.46	6.59	6.73	6.88	7.05	7.38	7.57	7.41	7.73	8.06	8.42	8.78	9.17	9.58	10.01
Levallised Tariff																						
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	2.73	Rs/Kwh																				
Levallised Tariff (Fixed)	2.98	Rs/Kwh																				
Applicable Tariff (FY2013-14)	5.71	Rs/Kwh																				

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)	32.445%
Capital Cost Rs. Lakh	437.306

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	11.54	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	12.59	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	218.65	196.79	17.49	3.50	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

Net Depreciation Benefit	Rs Lakh	207.11	173.70	-5.60	-19.59	-22.39	-22.95	-23.06	-23.08	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-12.59	0.00	0.00
Tax Benefit	Rs Lakh	67.20	56.36	-1.82	-6.36	-7.26	-7.45	-7.48	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-4.09	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
Per unit benefit	Rs/Unit	3.73	1.56	-0.05	-0.18	-0.20	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.11	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15

Levellised benefit **0.24** **(Rs/kWh)**

Select State

TN

Non Fossil Fuel based co-generation Projects

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	%	8.50%	
			Auxillary Consumption after stabilisation	%	8.50%	
			PLF(Stabilization for 6 months)	%	60%	
			PLF(during first year after Stabilization)	%	60%	
			PLF(second year onwards)	%	60%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	437.306	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	306.114	
			Total Equity Amount	Rs Lacs	131.192	
			Debt Component	Loan Amount	Rs Lacs	306.11
				Moratorium Period	years	0
				Repayment Period(incl Moratorium)	years	12
				Interest Rate	%	13.00%
			Equity Component	Equity amount	Rs Lacs	131.19
				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)	%	10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%	
			Depreciation	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
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	1	
				Months	15%	
				Months	2	
				Months	4	
				%	13.50%	
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600	
			During Stabilization Period	Kcal/kwh	3600	
			Biomass	Bagasse Price	Rs/T	1508.69
				GCV - Bagasse	Kcal/kg	2250
				Bagasse Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant Total O & M Expenses Escalation		Rs. Lacs	16.92	
				%	5.72%	

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		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	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	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	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		16.92	17.89	18.91	19.99	21.14	22.35	23.62	24.97	26.40	27.91	29.51	31.20	32.98	34.87	36.86	38.97	41.20	43.56	46.05	48.68
Depreciation	Rs Lakh		25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
Interest on term loan	Rs Lakh		38.14	34.82	31.50	28.19	24.87	21.56	18.24	14.92	11.61	8.29	4.97	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		11.76	12.18	12.62	13.09	13.58	14.10	14.66	15.24	15.86	16.52	17.33	18.06	18.53	19.42	20.36	21.34	22.38	23.46	24.61	25.81
Return on Equity	Rs Lakh		26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49
Total Fixed Cost	Rs Lakh		118.55	116.62	114.77	113.00	111.32	109.74	108.25	106.87	105.60	104.45	108.79	107.90	93.96	96.73	99.66	102.76	106.02	109.46	113.10	116.93
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	3.71	2.64	2.77	2.91	3.05	3.21	3.37	3.54	3.71	3.90	4.09	4.30	4.51	4.74	4.97	5.22	5.48	5.76	6.05	6.35	6.67
O&M expn	Rs/kWh	0.52	0.35	0.37	0.39	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.69	0.73	0.77	0.81	0.86	0.91	0.96	1.01
Depreciation	Rs/kWh	0.47	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Int. on term loan	Rs/kWh	0.40	0.79	0.72	0.66	0.59	0.52	0.45	0.38	0.31	0.24	0.17	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.32	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.34	0.36	0.38	0.39	0.40	0.42	0.44	0.47	0.49	0.51	0.54
RoE	Rs/kWh	0.57	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	6.00	5.10	5.19	5.29	5.40	5.52	5.65	5.79	5.93	6.09	6.26	6.56	6.76	6.69	6.99	7.30	7.62	7.96	8.32	8.70	9.10
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	2.64	Rs/kwh																				
Levallised Tariff (Fixed)	2.29	Rs/kwh																				
Applicable Tariff (FY2013-14)	4.93	Rs/kwh																				

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)	32.445%
Capital Cost Rs. Lakh	437.306

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	11.54	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	12.59	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	218.65	196.79	17.49	3.50	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	207.11	173.70	-5.60	-19.59	-22.39	-22.95	-23.06	-23.08	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-12.59	0.00	0.00
Tax Benefit	Rs Lakh	67.20	56.36	-1.82	-6.36	-7.26	-7.45	-7.48	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-4.09	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	2.79	1.17	-0.04	-0.13	-0.15	-0.15	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.16	-0.08	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	

Levellised benefit **0.18** **(Rs/kWh)**

Select State

Others

Non Fossil Fuel based co-generation Projects

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	%	8.50%
			Auxillary Consumption after stabilisation	%	8.50%
			PLF(Stabilization for 6 months)	%	53%
			PLF(during first year after Stabilization)	%	53%
			PLF(second year onwards)	%	53%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	437.306
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	306.114
			Total Equity Amount	Rs Lacs	131.192
		<u>Debt Component</u>	Loan Amount	Rs Lacs	306.11
			Moratorium Period	years	0
			Repayment Period(incl Moratorium)	years	12
			Interest Rate	%	13.00%
		<u>Equity Component</u>	Equity amount	Rs Lacs	131.19
			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)	%	10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%
		<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		%	13.50%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3600
			During Stabilization Period	Kcal/kwh	3600
		<u>Biomass</u>	Bagasse Price	Rs/T	1696.20
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs. Lacs	16.92
		Total O & M Expenses Escalation		%	5.72%

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		16.92	17.89	18.91	19.99	21.14	22.35	23.62	24.97	26.40	27.91	29.51	31.20	32.98	34.87	36.86	38.97	41.20	43.56	46.05	48.68
Depreciation	Rs Lakh		25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
Interest on term loan	Rs Lakh		38.14	34.82	31.50	28.19	24.87	21.56	18.24	14.92	11.61	8.29	4.97	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		11.70	12.12	12.55	13.02	13.51	14.03	14.58	15.16	15.77	16.42	17.23	17.95	18.42	19.31	20.24	21.22	22.25	23.33	24.46	25.65
Return on Equity	Rs Lakh		26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	26.24	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49	31.49
Total Fixed Cost	Rs Lakh		118.49	116.56	114.70	112.93	111.25	109.66	108.17	106.79	105.52	104.36	103.69	102.79	93.85	96.62	99.54	102.63	105.89	109.32	112.95	116.78
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	4.17	2.97	3.11	3.27	3.43	3.61	3.79	3.97	4.17	4.38	4.60	4.83	5.07	5.33	5.59	5.87	6.17	6.47	6.80	7.14	7.50
O&M expn	Rs/kWh	0.59	0.40	0.42	0.45	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
Depreciation	Rs/kWh	0.54	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.46	0.90	0.82	0.74	0.66	0.59	0.51	0.43	0.35	0.27	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	0.36	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.36	0.37	0.39	0.41	0.42	0.43	0.45	0.48	0.50	0.52	0.55	0.58	0.60
RoE	Rs/kWh	0.65	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Total COG	Rs/kWh	6.76	5.76	5.86	5.97	6.09	6.22	6.37	6.52	6.69	6.87	7.06	7.39	7.61	7.54	7.87	8.22	8.58	8.97	9.37	9.80	10.24
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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	2.97	Rs/Kwh																				
Levelling Tariff (Fixed)	2.59	Rs/Kwh																				
Applicable Tariff (FY2013-14)	5.56	Rs/Kwh																				

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)	32.445%
Capital Cost Rs. Lakh	437.306

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	11.54	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	12.59	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	218.65	196.79	17.49	3.50	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

Net Depreciation Benefit	Rs Lakh	207.11	173.70	-5.60	-19.59	-22.39	-22.95	-23.06	-23.08	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-23.09	-12.59	0.00	0.00
Tax Benefit	Rs Lakh	67.20	56.36	-1.82	-6.36	-7.26	-7.45	-7.48	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-7.49	-4.09	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
Per unit benefit	Rs/Unit	3.16	1.33	-0.04	-0.15	-0.17	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.10	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15

Levelling benefit **0.20** **(Rs/kWh)**

Assumption for Solar PV Power Projects Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Asumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Capacity Utilization Factor	%	19.0%	
			Useful Life	Years	25	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	800	
3	Financial Assumptions		Tariff Period	Years	25	
			<u>Debt: Equity</u>			
			Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	560.00	
			Total Equity Amount	Rs Lacs	240.00	
			<u>Debt Component</u>			
			Loan Amount	Rs Lacs	560.00	
			Moratorium Period	years	0	
			Repayment Period(incl'd Moratorium)	years	12	
			Interest Rate	%	13.00%	
			<u>Equity Component</u>			
			Equity amount	Rs Lacs	240.00	
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		10.95%				
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%	
			<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		%	13.50%
6	Operation & Maintenance		power plant	Rs. Lacs	11.63	
			Total O & M Expenses Escalation	%	5.72%	

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		1.66	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	1.66
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		11.63	12.30	13.00	13.74	14.53	15.36	16.24	17.17	18.15	19.19	20.28	21.44	22.67	23.97	25.34	26.79	28.32	29.94	31.65	33.46	35.38	37.40	39.54	41.80	44.19
Depreciation	Rs Lakh		46.64	46.64	46.64	46.64	46.64	46.64	46.64	46.64	46.64	46.64	46.64	46.64	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33	12.33
Interest on term loan	Rs Lakh		69.77	63.70	57.63	51.57	45.50	39.43	33.37	27.30	21.23	15.17	9.10	3.03	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		4.43	4.32	4.22	4.12	4.03	3.93	3.84	3.76	3.67	3.59	3.73	3.65	2.86	2.93	3.01	3.09	3.17	3.26	3.36	3.46	3.56	3.68	3.79	3.92	4.05
Return on Equity	Rs Lakh		48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	48.00	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60	57.60
Total Fixed Cost	Rs Lakh		180.46	174.96	169.49	164.07	158.70	153.37	148.09	142.86	137.69	132.58	137.35	132.37	95.47	96.83	98.28	99.81	101.43	103.14	104.94	106.85	108.87	111.01	113.27	115.65	118.18
Levellised COG																											
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	21	22	23	24	25
O&M expn	Rs/kWh	1.11	0.70	0.74	0.78	0.83	0.87	0.92	0.98	1.03	1.09	1.15	1.22	1.29	1.36	1.44	1.52	1.61	1.70	1.80	1.90	2.01	2.13	2.25	2.38	2.51	2.66
Depreciation	Rs/kWh	2.33	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	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
Int. on term loan	Rs/kWh	2.02	4.19	3.83	3.46	3.10	2.73	2.37	2.00	1.64	1.28	0.91	0.55	0.18	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	0.23	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.22	0.22	0.17	0.18	0.18	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.24
RoE	Rs/kWh	3.06	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46
Total COG	Rs/kWh		10.84	10.51	10.18	9.86	9.53	9.21	8.90	8.58	8.27	7.97	8.25	7.95	5.74	5.82	5.90	6.00	6.09	6.20	6.31	6.42	6.54	6.67	6.81	6.95	7.10
Discount Factor			1	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139	0.125	0.113	0.102	0.092	0.083
Levellised Tariff	8.75	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)	32.445%
Capital Cost	800.0

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%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Book Depreciation	Rs Lakh	21.12	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	42.24	23.04	0.00	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 Depm.	Rs Lakh	400.00	360.00	32.00	6.40	1.28	0.26	0.05	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	378.88	317.76	-10.24	-35.84	-40.96	-41.98	-42.19	-42.23	-42.24	-42.24	-42.24	-42.24	-42.24	-42.24	-42.24	-42.24	-42.24	-23.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	122.93	103.10	-3.32	-11.63	-13.29	-13.62	-13.69	-13.70	-13.70	-13.70	-13.70	-13.70	-13.70	-13.70	-13.70	-13.70	-13.70	-7.48	0.00	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	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	
Levellised benefit	0.88	Rs/Unit																									

Assumptions for Solar Thermal Power Projects Parameters							
S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions		
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1		
			Capacity Utilization Factor	%	23.0%		
			Auxiliary Consumption Factor	%	10.0%		
			Useful Life	Years	25		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	1200.00		
3	Sources of Fund	Debt: Equity	Tariff Period	Years	25		
			Debt	%	70%		
			Equity	%	30%		
			Total Debt Amount	Rs Lacs	840		
		Debt Component	Total Equity Amount	Rs Lacs	360		
			Loan Amount	Rs Lacs	840.00		
			Moratorium Period	years	0		
			Repayment Period(incld Moratorium)	years	12		
		Equity Component	Interest Rate	%	13.00%		
			Equity amount	Rs Lacs	360.00		
			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	%	10.95%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%		
			Depreciation	Depreciation Rate for first 12 years	%	5.83%	
				Depreciation Rate 13th year onwards	%	1.54%	
5	Working Capital	For Fixed Charges	(%) of O&M exepenses)				
		O&M Charges				Months	1
		Maintenance Spare				%	15%
		Receivables for Debtors				Months	2
		For Variable Charges					
Interest On Working Capital	%	13.50%					
6	Operation & Maintenance	power plant		Rs Lacs	15.86		
		Total O & M Expenses Escalation		%	5.72%		

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	
Levellised COG																												
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		15.86	16.77	17.73	18.74	19.81	20.95	22.14	23.41	24.75	26.16	27.66	29.24	30.92	32.68	34.55	36.53	38.62	40.83	43.17	45.63	48.24	51.00	53.92	57.01	60.27	
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	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
Interest on term loan	Rs Lakh		104.65	95.55	86.45	77.35	68.25	59.15	50.05	40.95	31.85	22.75	13.65	4.55	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		6.55	6.39	6.24	6.08	5.93	5.79	5.64	5.50	5.37	5.24	5.11	5.00	4.89	4.78	4.68	4.59	4.50	4.42	4.34	4.26	4.18	4.11	4.04	3.97	3.91	
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	86.40
Total Fixed Cost	Rs Lakh		269.02	260.67	252.37	244.13	235.96	227.84	219.80	211.82	203.93	196.11	203.11	195.47	139.94	141.80	143.78	145.86	148.07	150.40	152.86	155.47	158.22	161.13	164.21	167.47	170.91	
Levellised COG																												
Per Unit Cost of Generation	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	
O&M expn	Rs/kWh	1.39	0.87	0.92	0.98	1.03	1.09	1.16	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	
Depreciation	Rs/kWh	3.21	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	
Int. on term loan	Rs/kWh	2.78	5.77	5.27	4.77	4.27	3.76	3.26	2.76	2.26	1.76	1.25	0.75	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	0.31	0.36	0.35	0.34	0.34	0.33	0.32	0.31	0.30	0.30	0.29	0.30	0.29	0.23	0.23	0.24	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.31	0.32	
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	
Total COG	Rs/kWh	11.90	14.84	14.38	13.92	13.46	13.01	12.56	12.12	11.68	11.25	10.82	11.20	10.78	7.72	7.82	7.93	8.04	8.17	8.29	8.43	8.57	8.73	8.89	9.06	9.24	9.43	
Levellised Tariff	11.90	Rs/Unit																										

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)	32.445%
Capital Cost	1200.0

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%	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	34.56	0.00	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	%	50.00%	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%	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%	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

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	-34.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	184.39	154.65	-4.98	-17.44	-19.93	-20.43	-20.53	-20.55	-20.56	-20.56	-20.56	-20.56	-20.56	-20.56	-20.56	-20.56	-20.56	-11.21	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
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09

Levellised benefit	1.21	Rs/Unit
---------------------------	-------------	---------

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(Stabilization for 6 months)	%	85%	
			PLF(during first year after Stabilization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
			2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)
			Power Plant Cost (after subsidy)	Rs Lacs/MW	422.663	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	295.864	
			Total Equity Amount	Rs Lacs	126.799	
			Debt Component	Loan Amount	Rs Lacs	295.86
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	13.00%
			Equity Component	Equity amount	Rs Lacs	126.80
				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)		10.95%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%	
			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		%	13.50%		
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	2480.55	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	power plant		Rs Lacs	42.29	
			Total O & M Expenses Escalation	%	5.72%	

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		25.59	26.72	27.90	29.15	30.46	31.85	33.31	34.84	36.46	38.17	40.08	41.97	43.67	45.84	48.12	50.52	53.04	55.68	58.46	61.38
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		154.74	155.08	155.62	156.36	157.33	158.53	159.98	161.69	163.67	165.95	173.72	176.62	167.13	174.01	181.28	188.95	197.03	205.57	214.58	224.08
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	4.84	3.45	3.62	3.80	3.99	4.19	4.40	4.62	4.85	5.09	5.34	5.61	5.89	6.19	6.50	6.82	7.16	7.52	7.90	8.29	8.71
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.52	0.38	0.40	0.42	0.43	0.45	0.48	0.50	0.52	0.54	0.57	0.60	0.63	0.65	0.68	0.72	0.75	0.79	0.83	0.87	0.92
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	7.30	5.75	5.93	6.12	6.32	6.54	6.76	7.00	7.26	7.53	7.82	8.20	8.53	8.68	9.09	9.53	9.98	10.46	10.96	11.49	12.05
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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	3.45	Rs/kWh																				
Levallised Tariff (Fixed)	2.46	Rs/kWh																				
Applicable Tariff (FY2013-14)	5.91	Rs/kWh																				

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)	32.445%
Capital Cost	422.663

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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.12 (Rs/kWh)																				

Select State

Harayana

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	295.864
			Total Equity Amount	Rs Lacs	126.799
		Debt Component	Loan Amount	Rs Lacs	295.86
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	13.00%
			Equity Component	Equity amount	Rs Lacs
		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)		10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%
			Depreciation	Depreciation Rate(power plant)	%
		Depreciation Rate 13th year onwards		%	2.51%
		5	Working Capital	For Fixed Charges	O&M Charges
Maintenance Spare	(% of O&M exepenses)				15%
For Variable Charges	Receivables for Debtors			Months	2
	Biomass Stock			Months	4
Interest On Working Capital	%			13.50%	
6	Fuel Related Assumptions			Biomass	Specific Fuel Consumption
		Base Price	Rs/T		2823.44
		Biomass Price Escalation Factor			5.00%
7	Operation & Maintenance	power plant		Rs Lacs	42.29
		Total O & M Expenses Escalation		%	5.72%

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		28.53	29.80	31.14	32.55	34.03	35.60	37.24	38.98	40.80	42.72	44.87	46.99	48.95	51.38	53.94	56.63	59.45	62.42	65.53	68.81
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		157.68	158.17	158.86	159.76	160.90	162.28	163.92	165.82	168.01	170.51	178.50	181.65	172.41	179.56	187.10	195.05	203.45	212.31	221.65	231.51
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	5.51	3.92	4.12	4.32	4.54	4.77	5.00	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
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.58	0.43	0.44	0.46	0.49	0.51	0.53	0.56	0.58	0.61	0.64	0.67	0.70	0.73	0.77	0.80	0.84	0.89	0.93	0.98	1.03
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	8.04	6.27	6.48	6.69	6.92	7.17	7.43	7.70	7.99	8.30	8.63	9.05	9.42	9.62	10.07	10.56	11.06	11.60	12.16	12.74	13.36
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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	3.92	Rs/Kwh																				
Levallised Tariff (Fixed)	2.53	Rs/Kwh																				
Applicable Tariff (FY2013-14)	6.45	Rs/Kwh																				

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)	32.445%																				
Capital Cost	422.663																				
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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.12 (Rs/kWh)																				

Select State

Maharashtra

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)		572.663
			Power Plant Cost (after subsidy)	Rs Lacs/MW	422.663
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	295.864
			Total Equity Amount	Rs Lacs	126.799
		Debt Component	Loan Amount	Rs Lacs	295.86
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	13.00%
		Equity Component	Equity amount	Rs Lacs	126.80
			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)		10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%
		Depreciation	Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	2.51%
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		%	13.50%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25
			Base Price	Rs/T	2887.73
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	42.29
		Total O & M Expenses Escalation		%	5.72%

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		29.08	30.38	31.75	33.19	34.70	36.30	37.98	39.75	41.62	43.58	45.76	47.94	49.94	52.42	55.03	57.77	60.65	63.68	66.86	70.20
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		158.23	158.74	159.46	160.40	161.57	162.98	164.66	166.60	168.83	171.36	179.40	182.59	173.40	180.59	188.19	196.20	204.65	213.57	222.98	232.90
Levallised tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levllised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	5.64	4.01	4.21	4.42	4.64	4.88	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
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.59	0.43	0.45	0.47	0.50	0.52	0.54	0.57	0.59	0.62	0.65	0.68	0.72	0.75	0.78	0.82	0.86	0.91	0.95	1.00	1.05
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	8.17	6.37	6.58	6.80	7.04	7.29	7.55	7.83	8.13	8.44	8.78	9.21	9.58	9.79	10.26	10.75	11.27	11.81	12.38	12.98	13.61
Levllised 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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	4.01	Rs/kwh																				
Levllised Tariff (Fixed)	2.54	Rs/kwh																				
Applicable Tariff (FY2013-14)	6.55	Rs/kwh																				

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)		32.445%																				
Capital Cost		422.663																				
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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	
Levellised benefit	0.12 (Rs/kWh)																					

Select State

Punjab

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)		572.663
			Power Plant Cost (after subsidy)	Rs Lacs/MW	422.663
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	295.864
			Total Equity Amout	Rs Lacs	126.799
		Debt Component	Loan Amount	Rs Lacs	295.86
			Moratorium Period	years	0
			Repayment Period(inclnd Moratorium)	years	12
			Interest Rate	%	13.00%
		Equity Component	Equity amount	Rs Lacs	126.80
			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)		10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%
		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	%	13.50%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25
			Base Price	Rs/T	2953.09
			Biomass Price Escalation Factor		5.00%
7	Operation & Maintenance	power plant		Rs Lacs	42.29
		Total O & M Expenses Escalation		%	5.72%

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		29.64	30.97	32.36	33.83	35.38	37.01	38.73	40.54	42.44	44.45	46.67	48.90	50.95	53.48	56.14	58.94	61.87	64.96	68.21	71.61
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		158.79	159.33	160.08	161.05	162.25	163.70	165.41	167.39	169.66	172.23	180.31	183.55	174.40	181.65	189.30	197.36	205.87	214.85	224.32	234.32
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	5.76	4.10	4.31	4.52	4.75	4.99	5.23	5.50	5.77	6.06	6.36	6.68	7.01	7.37	7.73	8.12	8.53	8.95	9.40	9.87	10.36
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.61	0.44	0.46	0.48	0.50	0.53	0.55	0.58	0.60	0.63	0.66	0.70	0.73	0.76	0.80	0.84	0.88	0.92	0.97	1.02	1.07
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	8.31	6.47	6.68	6.91	7.15	7.41	7.68	7.96	8.27	8.59	8.93	9.37	9.75	9.97	10.44	10.95	11.47	12.03	12.61	13.22	13.86
Levallised Tariff																						
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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	4.10	Rs/Kwh																				
Levallised Tariff (Fixed)	2.55	Rs/Kwh																				
Applicable Tariff (FY2013-14)	6.65	Rs/Kwh																				

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)	32.445%
Capital Cost	422.663

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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.12 (Rs/kWh)																				

Select State

Rajasthan

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(Stabilization for 6 months)	%	85%	
			PLF(during first year after Stabilization)	%	85%	
			PLF(second year onwards)	%	85%	
			Useful Life	Years	20	
			2	Project Cost	Capital Cost/MW	Power Plant Cost (before subsidy)
Power Plant Cost (after subsidy)	Rs Lacs/MW	422.663				
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	295.864	
			Total Equity Amount	Rs Lacs	126.799	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	295.86
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	13.00%
			<u>Equity Component</u>	Equity amount	Rs Lacs	126.80
				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)		10.95%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%	
			<u>Depreciation</u>	Depreciation Rate(power plant)	%	5.83%
				Depreciation Rate 13th year onwards	%	2.51%
				5	Working Capital	<u>For Fixed Charges</u>
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	%	13.50%			
6	Fuel Related Assumptions	<u>Biomass</u>	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	2464.48	
			Biomass Price Escalation Factor		5.00%	
			7	Operation & Maintenance	power plant	Total O & M Expenses Escalation
Total O & M Expenses Escalation	%	5.72%				

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		25.46	26.57	27.75	28.99	30.29	31.67	33.12	34.65	36.26	37.95	39.85	41.73	43.43	45.58	47.85	50.23	52.73	55.36	58.13	61.03
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		154.61	154.94	155.46	156.20	157.16	158.36	159.79	161.49	163.47	165.73	173.49	176.39	166.88	173.75	181.01	188.66	196.73	205.25	214.25	223.73
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	4.81	3.42	3.59	3.77	3.96	4.16	4.37	4.59	4.82	5.06	5.31	5.58	5.85	6.15	6.45	6.78	7.12	7.47	7.85	8.24	8.65
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.52	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	0.68	0.71	0.75	0.79	0.83	0.87	0.91
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	7.27	5.73	5.91	6.09	6.29	6.51	6.73	6.97	7.23	7.50	7.78	8.16	8.49	8.64	9.05	9.48	9.93	10.41	10.91	11.43	11.99
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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	3.42	Rs/kwh																				
Levallised Tariff (Fixed)	2.46	Rs/kwh																				
Applicable Tariff (FY2013-14)	5.88	Rs/kwh																				

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)	32.445%
Capital Cost	422.663

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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	
Levellised benefit	0.12 (Rs/kWh)																					

Select State

UP

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)
Power Plant Cost (after subsidy)	Rs Lacs/MW	422.663				
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	295.864	
			Total Equity Amount	Rs Lacs	126.799	
			Debt Component	Loan Amount	Rs Lacs	295.86
				Moratorium Period	years	0
				Repayment Period(incld Moratorium)	years	12
				Interest Rate	%	13.00%
			Equity Component	Equity amount	Rs Lacs	126.80
				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)		10.95%				
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%	
			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	%	13.50%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	2523.41	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	power plant	Total O & M Expenses Escalation	Rs Lacs	42.29	
				%	5.72%	

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	10.59	10.59	10.59	10.59	10.59	10.59	10.59
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		25.96	27.10	28.30	29.57	30.91	32.31	33.80	35.36	37.00	38.74	40.68	42.60	44.33	46.54	48.85	51.28	53.84	56.52	59.34	62.31
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		155.11	155.47	156.02	156.79	157.78	159.00	160.47	162.21	164.22	166.52	174.32	177.25	167.79	174.71	182.01	189.71	197.84	206.41	215.46	225.01
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	4.92	3.50	3.68	3.86	4.06	4.26	4.47	4.70	4.93	5.18	5.44	5.71	5.99	6.29	6.61	6.94	7.29	7.65	8.03	8.43	8.86
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.61	0.64	0.66	0.69	0.73	0.77	0.80	0.84	0.89	0.93
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	7.40	5.82	6.00	6.19	6.40	6.61	6.85	7.09	7.35	7.63	7.92	8.31	8.64	8.80	9.22	9.66	10.12	10.60	11.11	11.65	12.21
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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	3.50	Rs/Kwh																				
Levallised Tariff (Fixed)	2.47	Rs/Kwh																				
Applicable Tariff (FY2013-14)	5.98	Rs/Kwh																				

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)	32.445%
Capital Cost	422.663

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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15	
Levillised benefit	0.12 (Rs/kWh)																					

Select State

TN

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)		572.663	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	422.663	
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	295.864	
			Total Equity Amount	Rs Lacs	126.799	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	295.86
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	12
				Interest Rate	%	13.00%
			<u>Equity Component</u>	Equity amount	Rs Lacs	126.80
				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)		10.95%				
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	32.445%	
			<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	%	13.50%
			6	Fuel Related Assumptions	<u>Biomass</u>	Specific Fuel Consumption
Base Price	Rs/T	2439.83				
Biomass Price Escalation Factor		5.00%				
7	Operation & Maintenance	power plant		Rs Lacs	42.29	
			Total O & M Expenses Escalation	%	5.72%	

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		25.24	26.35	27.51	28.74	30.04	31.40	32.84	34.35	35.95	37.63	39.51	41.37	43.05	45.18	47.43	49.79	52.27	54.88	57.62	60.50
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		154.39	154.71	155.23	155.96	156.91	158.09	159.51	161.20	163.16	165.41	173.15	176.03	166.50	173.36	180.59	188.22	196.27	204.77	213.74	223.20
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	4.76	3.39	3.56	3.74	3.92	4.12	4.32	4.54	4.77	5.01	5.26	5.52	5.80	6.09	6.39	6.71	7.04	7.40	7.77	8.16	8.56
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.38	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.54	0.56	0.59	0.62	0.64	0.67	0.71	0.74	0.78	0.82	0.86	0.90
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	7.22	5.69	5.87	6.05	6.25	6.46	6.68	6.92	7.17	7.44	7.73	8.10	8.42	8.57	8.98	9.40	9.85	10.33	10.82	11.34	11.89
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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	3.39	Rs/kwh																				
Levillised Tariff (Fixed)	2.46	Rs/kwh																				
Applicable Tariff (FY2013-14)	5.85	Rs/kwh																				

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)	32.445%
Capital Cost	422.663

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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.12 (Rs/kWh)																				

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	Capital Cost/MW	Power Plant Cost (before subsidy)		572.663	
			Power Plant Cost (after subsidy)	Rs Lacs/MW	422.663	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	295.864	
			Total Equity Amount	Rs Lacs	126.799	
			Debt Component	Loan Amount	Rs Lacs	295.86
				Moratorium Period	years	0
				Repayment Period(incld Moratorium)	years	12
				Interest Rate	%	13.00%
			Equity Component	Equity amount	Rs Lacs	126.80
				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)		10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%	
			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	%	13.50%
6	Fuel Related Assumptions	Biomass	Specific Fuel Consumption	kg/kWh	1.25	
			Base Price	Rs/T	2653.07	
			Biomass Price Escalation Factor		5.00%	
7	Operation & Maintenance	power plant	Total O & M Expenses	Rs Lacs	42.29	
			Escalation	%	5.72%	

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
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64	10.59	10.59	10.59	10.59	10.59	10.59	10.59	10.59
Interest on term loan	Rs Lakh		36.86	33.65	30.45	27.24	24.04	20.83	17.63	14.42	11.22	8.01	4.81	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		27.07	28.27	29.53	30.86	32.26	33.73	35.29	36.92	38.65	40.46	42.49	44.50	46.33	48.63	51.05	53.59	56.26	59.07	62.02	65.12
Return on Equity	Rs Lakh		25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	25.36	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43	30.43
Total Fixed Cost	Rs Lakh		156.22	156.63	157.25	158.07	159.13	160.42	161.96	163.77	165.86	168.24	176.13	179.15	169.78	176.80	184.21	192.02	200.26	208.96	218.14	227.82
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	5.18	3.68	3.87	4.06	4.27	4.48	4.70	4.94	5.18	5.44	5.72	6.00	6.30	6.62	6.95	7.30	7.66	8.04	8.45	8.87	9.31
O&M expn	Rs/kWh	0.94	0.63	0.67	0.71	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
Depreciation	Rs/kWh	0.33	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Int. on term loan	Rs/kWh	0.28	0.55	0.50	0.45	0.41	0.36	0.31	0.26	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	0.55	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	0.97
RoE	Rs/kWh	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Total COG	Rs/kWh	7.67	6.02	6.21	6.41	6.62	6.85	7.10	7.35	7.63	7.92	8.23	8.63	8.98	9.15	9.59	10.04	10.53	11.03	11.56	12.12	12.71
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	0.81	0.73	0.66	0.59	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.26	0.23	0.21	0.19	0.17	0.15	0.14
Variable Cost (FY 2013-14)	3.68	Rs/Kwh																				
Levillised Tariff (Fixed)	2.49	Rs/Kwh																				
Applicable Tariff (FY2013-14)	6.18	Rs/Kwh																				

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)	32.445%
Capital Cost	422.663

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	11.16	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	22.32	12.17	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	211.33	190.20	16.91	3.38	0.68	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	200.17	167.88	-5.41	-18.94	-21.64	-22.18	-22.29	-22.31	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-22.32	-12.17	0.00	0.00
Tax Benefit	Rs Lakh	64.95	54.47	-1.76	-6.14	-7.02	-7.20	-7.23	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-7.24	-3.95	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	1.94	0.81	-0.03	-0.09	-0.10	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11	-0.06	0.00	0.00
Discounting Factor		1.00	0.95	0.86	0.77	0.70	0.63	0.56	0.51	0.46	0.41	0.37	0.34	0.30	0.27	0.25	0.22	0.20	0.18	0.16	0.15
Levellised benefit	0.12 (Rs/kWh)																				

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	1145.325
			Power Plant Cost (after subsidy)	Rs Lacs/MW	845.325
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	591.728
			Total Equity Amount	Rs Lacs	253.598
		Debt Component	Loan Amount	Rs Lacs	591.73
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	12
			Interest Rate	%	13.00%
		Equity Component	Equity amount	Rs Lacs	253.60
			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)	%	10.95%
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	32.445%
		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%
		For Variable Charges	Receivables for Debtors	Months	2
			Biomass Stock	Months	4
		Interest On Working Capital	%	13.50%	
		6	Fuel Related Assumptions	Biomass	Fuel Price
Specific Fuel Consumption	kg/kWh				3
Substrates Price Escalation Factor					5.00%
7	Operation & Maintenance	power plant	Total O & M Expenses Escalation	Rs Lacs	42.29
				%	5.72%

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
Vaiable 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		250.90	263.45	276.62	290.45	304.97	320.22	336.23	353.04	370.69	389.23	408.69	429.12	450.58	473.11	496.77	521.60	547.68	575.07	603.82	634.01
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		42.29	44.71	47.27	49.97	52.83	55.85	59.04	62.42	65.99	69.77	73.76	77.98	82.44	87.15	92.14	97.41	102.98	108.87	115.10	121.68
Depreciation	Rs Lakh		49.28	49.28	49.28	49.28	49.28	49.28	49.28	49.28	49.28	49.28	49.28	49.28	21.18	21.18	21.18	21.18	21.18	21.18	21.18	21.18
Interest on term loan	Rs Lakh		73.72	67.31	60.90	54.49	48.08	41.67	35.26	28.85	22.44	16.03	9.62	3.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		23.66	24.51	25.42	26.37	27.39	28.46	29.59	30.79	32.06	33.40	35.05	36.55	37.56	39.37	41.28	43.29	45.40	47.61	49.94	52.39
Return on Equity	Rs Lakh		50.72	50.72	50.72	50.72	50.72	50.72	50.72	50.72	50.72	50.72	60.86	60.86	60.86	60.86	60.86	60.86	60.86	60.86	60.86	60.86
Total Fixed Cost	Rs Lakh		239.67	236.53	233.58	230.83	228.29	225.98	223.90	222.06	220.49	219.20	228.57	227.88	202.03	208.56	215.46	222.74	230.42	238.52	247.08	256.11
Levallised tariff corresponding to Useful life																						
Per Unit Cost of Generation	Unit	Levllised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	5.08	3.62	3.80	3.99	4.19	4.40	4.62	4.85	5.09	5.34	5.61	5.89	6.19	6.49	6.82	7.16	7.52	7.89	8.29	8.70	9.14
O&M expn	Rs/kWh	0.90	0.61	0.64	0.68	0.72	0.76	0.80	0.85	0.90	0.95	1.01	1.06	1.12	1.19	1.26	1.33	1.40	1.48	1.57	1.66	1.75
Depreciation	Rs/kWh	0.64	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Int. on term loan	Rs/kWh	0.54	1.06	0.97	0.88	0.79	0.69	0.60	0.51	0.42	0.32	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	0.45	0.34	0.35	0.37	0.38	0.39	0.41	0.43	0.44	0.46	0.48	0.51	0.53	0.54	0.57	0.60	0.62	0.65	0.69	0.72	0.76
RoE	Rs/kWh	0.77	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Total COG	Rs/kWh	8.38	7.07	7.21	7.35	7.51	7.69	7.87	8.07	8.29	8.52	8.77	9.19	9.47	9.41	9.83	10.27	10.73	11.22	11.73	12.26	12.83
Levllised 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	0.901	0.812	0.732	0.660	0.595	0.536	0.483	0.436	0.393	0.354	0.319	0.287	0.259	0.234	0.210	0.190	0.171	0.154	0.139
Variable Cost (FY2013-14)	3.62	Rs/kwh																				
Levllised Tariff (Fixed)	3.30	Rs/kwh																				
Applicable Tariff (FY2013-14)	6.91	Rs/kwh																				

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)		32.445%																			
Capital Cost		845.325																			
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	22.32	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	44.63	44.63	24.35	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	422.66	380.40	33.81	6.76	1.35	0.27	0.05	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	400.35	335.76	-10.82	-37.87	-43.28	-44.36	-44.58	-44.62	-44.63	-44.63	-44.63	-44.63	-44.63	-44.63	-44.63	-44.63	-44.63	-24.35	0.00	0.00
Tax Benefit	Rs Lakh	129.89	108.94	-3.51	-12.29	-14.04	-14.39	-14.46	-14.48	-14.48	-14.48	-14.48	-14.48	-14.48	-14.48	-14.48	-14.48	-14.48	-7.90	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
Per unit benefit	Rs/Unit	3.74	1.57	-0.05	-0.18	-0.20	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21	-0.11	0.00	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
Levellised benefit	0.24 (Rs/kWh)																				