

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. /SM/2026(Suo-Motu)

Coram:

Shri Jishnu Barua, Chairperson

Shri Ramesh Babu V., Member

Shri Harish Dudani, Member

Shri. Ravinder Singh Dhillon, Member

Date of Proposal: 03rd July, 2026

IN THE MATTER OF

Determination of levellised generic tariff for third year of Control Period (for FY 26-27) under Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2024.

PROPOSAL

1. The Commission has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2024, on 12.06.2024 (hereinafter referred to as "the RE Tariff Regulations"), which provide for terms and conditions and the procedure for determination of tariff of the following categories of Renewable Energy (RE) generating stations:
 - a. Small Hydro Projects;
 - b. Biomass Power Projects with Rankine Cycle technology;
 - c. Non-fossil fuel-based co-generation Project;
 - d. Biomass Gasifier-based Power Projects;
 - e. Biogas-based Power Projects
 - f. Refuse-Derived Fuel-based Municipal Solid Waste Power Projects;
2. As per Regulation 7 of the RE Tariff Regulations, the Commission shall determine project-specific tariff, on a case to case basis, for the following RE technologies:
 - a. Solar PV power projects, floating solar projects and solar thermal power projects;
 - b. Wind power projects (both on-shore and off-shore);



- c. Biomass Projects, Biomass gasifier-based power projects and biogas-based power projects – if a project developer opts for project-specific tariff;
- d. Municipal solid waste-based power projects and refuse-derived fuel-based municipal solid waste power projects – if a project developer opts for project-specific tariff;
- e. Renewable hybrid energy projects;
- f. Renewable energy with storage projects; and
- g. Any other project based on new renewable energy sources or technologies approved by the Central Government.

3. Further, Regulation 8(1) of the RE Tariff Regulations provides as under:

“8. Petition and proceedings for determination of tariff

1) In case of renewable energy projects for which generic tariff has to be determined as per these regulations, the Commission shall determine such generic tariff prior to the commencement of year for each year of the Control Period:

Provided that for first year of Control Period i.e., from 01.07.2024 to 31.3.26, the Generic Tariff Order shall be determined upon issuance of these regulations.”

- 4. The Commission, in due discharge of the mandate under Regulation 8(1) of the RE Tariff Regulations, proposes to determine the generic tariff of the RE projects for the third year of the control period (i.e. from 01.08.2026 to 31.03.2027) as per the proposal enclosed as Annexure-I.
- 5. The comments/suggestions of the stakeholders on the above proposal are invited by 21st July, 2026.

Ravinder Singh Dhillon
Member

Harish Dudani
Member

Ramesh Babu. V
Member

Jishnu Barua
Chairperson

New Delhi, 03.07.2026



ANNEXURE I

PROPOSED LEVELLISED GENERIC TARIFF FOR VARIOUS RENEWABLE ENERGY TECHNOLOGIES FOR THIRD YEAR OF CONTROL PERIOD (FY 2026-27)

1. The proposed levellised generic tariffs for Small Hydro Projects, Biomass Power Projects with Rankine Cycle, Non-fossil fuel-based co-generation, Biomass Gasifier-based Power Projects, Biogas-based Power Projects and RDF-based MSW projects, FY 2026-27, are discussed in the following paragraphs.
2. For RE projects covered under Regulation 7 of the RE Tariff Regulations, the Commission is required to determine a project-specific tariff. A separate petition is required to be filed for the determination of project-specific tariff as per Regulation 8 of the RE Tariff Regulations.

A. Useful Life

3. The clause (hh) of sub-Regulation (1) of Regulation 2 of the RE Tariff Regulations defines 'useful life' in relation to a project, including a dedicated evacuation system, from the date of commercial operation (COD) of such project, and shall mean the following:

Renewable Energy Projects	Years
Small Hydro Project	40
Biomass power project with Rankine Cycle technology	25
Non-fossil fuel-based co-generation	25
Biomass Gasifier based Power Project	25
Biogas based Power Projects	25
Refuse Derived Fuel based Municipal Solid Waste	20

B. Control Period

4. Regulation 5 of the RE Tariff Regulations specifies that the Control Period for the determination of the tariff for renewable energy projects (RE projects) shall be from 01.07.2024 to 31.03.2027. The proviso to this regulation specifies that the tariff determined for the RE projects commissioned during the control period shall remain valid for the tariff period (Useful life of the project). Accordingly, the tariff proposed in this proposal is for the third year of the control period and shall be applicable to the Projects commissioned from August 1, 2026, to March 31, 2027.

C. Tariff Structure

5. Regulation 9 of the RE Tariff Regulations stipulates that the tariff for renewable energy sources shall consist of the following components:



- a. Return on equity;
 - b. Interest on loan capital;
 - c. Depreciation;
 - d. Interest on working capital; and
 - e. Operation and Maintenance expenses
6. For renewable energy technologies having a fuel cost component, like biomass power projects with Rankine cycle technology, non-fossil fuel-based cogeneration, biomass gasifier-based projects and biogas-based power projects, a single-part tariff with two components, i.e. fixed cost component and fuel cost component, is to be proposed.

D. Tariff Design

7. In terms of Regulation 10 of the RE Tariff Regulations, the tariff design for renewable energy generating stations is as follows:

“(1) The generic tariff shall be determined, on levellised basis, considering the year of commissioning of the project, for the tariff period of the project:

Provided that for renewable energy projects having single part tariff with two components, the fixed cost component shall be determined on a levellised basis considering the year of commissioning of the project while the fuel cost component shall be determined on a year of operation basis in the Tariff Order to be issued by the Commission.”

E. Levellised Tariff

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

F. Discount Factor

9. Regulation 10 (2) of the RE Tariff Regulations specifies the methodology to calculate the discount factor for the purpose of levellised tariff computation as under:

“10. Tariff Design

... ..

(2) For the purpose of levellised tariff computation, a discount factor equivalent to the post-tax weighted average cost of capital shall be considered.”

10. Accordingly, the discount factor considered for this exercise is equal to the post-tax weighted average cost of capital on the basis of the normative debt: equity ratio (70:30) specified in the Regulations. Considering the normative debt-to-equity ratio and the weighted average of the post-tax rates for the debt and equity components, the discount factor is calculated.



11. The interest rate considered for the loan component (i.e., 70% of capital cost) is 10.71%. For the equity component (i.e., 30% of capital cost), the Return on Equity (ROE) is set at a post-tax rate of 14% (for all technologies except SHP; for SHP, ROE is set at a post-tax rate of 15%). Further, the corporate tax rate has been considered as 34.94%¹. Accordingly, the discount factor derived by this method for all technologies (except SHP) is 9.08% $[\{(10.71\% \times 0.70) \times (1 - 34.94\%)\} + (14.0\% \times 0.30)]$ and that for SHP is 9.38% $[\{(10.71\% \times 0.70) \times (1 - 34.94\%)\} + (15.0\% \times 0.30)]$.

G. Capital Cost

12. Regulation 12 of the Renewable Energy Tariff Regulations, 2024 specifies as follows:

“12. Capital Cost

Norms for capital cost, as specified in relevant chapters of these regulations, shall be inclusive of land cost, pre-development expenses, all capital work including plant & machinery, civil work, erection, commissioning, financing cost, interest during construction and evacuation infrastructure up to an interconnection point.”

13. As per RE Tariff Regulations 2024, the capital cost for different RE technologies, as specified for the first year of the Control Period, will remain applicable for the entire duration of the Control Period unless reviewed by the Commission. Accordingly, the Commission has compared the capital cost norms specified by various SERCs for different RE technologies in respective States with the corresponding norms under the RE Tariff Regulations, 2024, including project-specific orders based on prevailing market conditions. The review of capital cost based on prevailing market conditions and norms specified by various SERCs indicates that, for most RE technologies, the capital cost approved or specified by the State Commission is either aligned with or broadly comparable to that specified under the CERC RE Tariff Regulations, 2024. In cases where variations exist, such differences are attributable to factors such as older control periods, technology-specific considerations, state-specific approaches, or project-specific tariff determination. Accordingly, based on the available information, no change in the normative capital cost of the RE technologies is proposed for the third year (i.e. 2026-27) of the Control Period
14. Therefore, the Commission has considered the normative capital cost as specified in the RE Tariff Regulations, 2024, applicable for the third year of the control period, for various RE technologies, viz. Small Hydro Power, Biomass Power based on Rankine cycle, Non-Fossil Fuel based Cogeneration, Biomass Gasifier, Biogas, Refuse Derived

¹ Corporate Tax of 30% + 12% surcharge + 4% Health and Education cess



Fuel- based Municipal Solid Waste power projects. The capital cost of RE projects is discussed as follows:

Capital Cost of Small Hydro Projects (SHP)

15. 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 plants and machinery and with an installed capacity up to and including 25 MW.
16. Normative capital cost for small hydro projects for FY 2026-27 in accordance with Regulation 27 (1) of the RE Tariff Regulations as under:

Region	Project Size	Capital Cost (Rs. Lakh/MW)
Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States	Below 5 MW	1200
	5 MW to 25 MW	1200
Other States	Below 5 MW	890
	5 MW to 25 MW	1027

Capital cost of Biomass power projects based on Rankine cycle technology

17. Normative capital cost for Biomass power projects based on Rankine cycle technology for FY 2026-27 in accordance with Regulation 31 of the RE Tariff Regulations as under

Biomass power projects based on Rankine cycle technology	Capital Cost (Rs. lakhs/ MW)
Project [other than rice straw and juliflora (plantation) based project] with a water-cooled condenser	638
Project [other than rice straw and Juliflora(plantation) based project] with air-cooled condenser	685
For a rice straw and juliflora (plantation) based project with a water-cooled condenser	697
For a rice straw and juliflora (plantation) based project with an air-cooled condenser	744

Capital cost of Non-fossil fuel based co-generation projects

18. 'Non-fossil fuel-based cogeneration project' means a generating station that uses the process in which more than one form of energy (such as steam and electricity) is produced in a sequential manner by the use of biomass. As per Regulation 4(d) of the RE Tariff Regulations, 2024, a project to qualify as non-fossil based co-generation project must be using new plant and machinery with topping cycle mode of operation which uses the non-fossil fuel input for power generation and utilizes the thermal energy generated for useful heat applications in other industrial activities simultaneously, and where the sum of useful power output and half of useful thermal output is greater than 45% of the plant's energy consumption during the season.

19. Normative capital cost for Non-fossil fuel-based cogeneration projects for FY 2026-27 in accordance with Regulation 39 of the RE Tariff Regulations as Rs. 562 lakhs/MW

Capital cost of Biomass Gasifier-based power projects

20. Normative capital cost for Biomass Gasifier-based power projects for FY 2026-27 in accordance with Regulation 50 of the RE Tariff Regulations is Rs. 677 lakhs/MW.

Capital cost of Biogas-based Power Projects

21. Normative capital cost for Biogas-based Power Projects for FY 2026-27 in accordance with Regulation 56 of the RE Tariff Regulations is Rs. 1354 lakhs/MW.

Capital cost of Refuse-Derived Fuel (RDF) based Municipal Solid Waste (MSW) power projects

22. Normative capital cost for Refuse Derived Fuel (RDF) based Municipal Solid Waste (MSW) power projects for FY 2026-27 in accordance with Regulation 62 of RE Tariff Regulations as Rs. 2200 Lakhs/MW

23. The capital cost for the third year of the control period in respect of the renewable energy power generating stations is summarised as following:

Renewable Energy Projects	Capital Cost Norm for third year of the Control Period (Rs. lakh/MW)
Small Hydro	
Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States (Below 5 MW)	1200



Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States (5 MW to 25 MW)	1200
Other States (Below 5 MW)	890
Other States (5 MW to 25 MW)	1027
Biomass Projects Based on Rankine Cycle	
Project [other than rice straw and juliflora (plantation) based project] with water-cooled condenser	638
Project [other than rice straw and Juliflora(plantation) based project] with air-cooled condenser	685
For rice straw and juliflora (plantation) based project with water-cooled condenser	697
For rice straw and juliflora (plantation) based project with air-cooled condenser	744
Non-fossil fuel co-generation	562
Biomass Gasifier based Power Projects	677
Biogas based Power Projects	1354
RDF based MSW project	2200

H. Debt-Equity Ratio

24. Sub-Regulation (1) of Regulation 13 of the RE Tariff Regulations, 2024, as stipulated below, specifies a debt-equity ratio of 70:30 for the determination of a generic tariff.

25. 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 following:

Renewable Energy Projects	Debt Amount (Rs. Lakh)	Equity Amount (Rs. Lakh)	Capital Cost Norm for the third year of the Control Period (Rs. lakh/MW)
Small Hydro			
Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States (Below 5 MW)	840.00	360.00	1,200.00



Renewable Energy Projects	Debt Amount (Rs. Lakh)	Equity Amount (Rs. Lakh)	Capital Cost Norm for the third year of the Control Period (Rs. lakh/MW)
Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States (5 MW to 25 MW)	840.00	360.00	1,200.00
Other States (Below 5 MW)	623.00	267.00	890.00
Other States (5 MW to 25 MW)	718.90	308.10	1,027.00
Biomass Projects Based on the Rankine Cycle			
Project [other than rice straw and juliflora (plantation) based project] with a water-cooled condenser	446.60	191.40	638.00
Project [other than rice straw and Juliflora(plantation) based project] with air-cooled condenser	479.50	205.50	685.00
For a rice straw and juliflora (plantation) based project with a water-cooled condenser	487.90	209.10	697.00
For a rice straw and juliflora (plantation) based project with an air- cooled condenser	520.80	223.20	744.00
Non-fossil fuel co-generation	393.40	168.60	562.00
Biomass Gasifier-based Power Projects	473.90	203.10	677.00
Biogas-based Power Projects	947.80	406.20	1,354.00
Refuse-derived fuel-based Municipal Solid waste power projects	1,540.00	660.00	2,200.00

I. Return on Equity

26. As regards Rate of Return on Equity, sub-Regulation (2) of Regulation 16 of the RE Tariff Regulations, 2024, specifies as under:

“16. Return on Equity

... ..

(2) The normative Return on Equity for renewable energy projects other than small hydro projects shall be 14%, and that for the small hydro projects shall be 15%. The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternate Tax (MAT) rate for the first 20 years of



the Tariff Period and by the latest available notified Corporate Tax rate for the remaining Tariff Period.”

27. For the computation of the Rate of Return on Equity, the MAT Rate of 17.47% and the Corporate Tax rate of 34.94% has been considered. Accordingly, the rate of Return for RE projects other than small hydro projects has been computed as 16.96% [i.e. 14%/(1-17.47%)] for the first 20 years and 21.52% [i.e. 14%/(1-34.94%)] after 20 years. For small hydro projects, the rate of return has been computed as 18.18% % [i.e. 15%/(1-17.47%)] for the first 20 years and 23.06% [i.e. 15%/(1-34.94%)] after 20 years.

J. Loan Tenure and Interest on Loan

28. Sub-Regulation (1) of Regulation 14 of the RE Regulations, 2024, specifies the loan tenure of 15 years for the purpose of determining the generic and project-specific tariff for RE projects, which is reproduced as under:

“(1) Loan Tenure

For determination of generic tariff and project specific tariff, loan tenure of 15 years shall be considered.

(2) Interest on Loan

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

(b) For the purpose of computation of tariff, the normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months shall be considered.

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

29. The monthly data of MCLR for the last available six months (from 15th November, 2025 till 14th May, 2026) from State Bank of India and the average MCLR is shown in following table:

Effective Date	One (1) Year Tenor MCLR rates ²
15.04.2026 to 14.05.2026	8.70%
15.03.2026 to 14.04.2026	8.70%
15.02.2026 to 14.03.2026	8.70%

² Source: <https://www.sbi.co.in/web/interest-rates/interest-rates/mclr-historical-data>



15.01.2026 to 14.02.2026	8.70%
15.12.2025 to 14.01.2026	8.70%
15.11.2025 to 14.12.2025	8.75%
Avg. for last available 6 months	8.71%

30. Accordingly, the interest rate for loan component is determined as 10.71% [i.e. 8.71% plus 200 basis points] .

K. Depreciation

31. Regulation 15 of the RE Tariff Regulations, 2024, specifies computation of depreciation in the following manner:

“(1) The value base for the purpose of depreciation shall be the capital cost of the project admitted by the Commission. The salvage value of the project shall be considered as 10%, and depreciation shall be allowed up to a maximum of 90% of the capital cost of the project:

Provided that no depreciation shall be allowed to the extent of grant or capital subsidy received for the project.

(2) Depreciation rate of 4.67% per annum shall be considered for the first 15 years and the remaining depreciation shall be evenly spread during the remaining Useful Life of the project.

(3) Depreciation shall be computed from the first year of commercial operation:

Provided that, for determination of project specific tariff, in case of commercial operation of the project for part of the year, depreciation shall be computed on a pro rata basis.”

32. In accordance with the above, the rate of depreciation for the first 15 years is specified as 4.67% and the rate of depreciation from the 16th year onwards is to be spread over the balance useful life of the RE project as under:

Details	Small Hydro	Biomass project Based on Rankine Cycle	Non-fossil fuel co-generation	Biomass Gasifier	Biogas	RDF
Useful Life (in Years)	40	25	25	25	25	20
Rate of depreciation for 15 years (%)	4.67	4.67	4.67	4.67	4.67	4.67
Rate of depreciation from 16th year onwards (%)	0.80	2.00	2.00	2.00	2.00	4.00

L. Interest on Working Capital

33. Regulation 17 of the RE Tariff Regulations, 2024 specifies the working capital requirements of the RE projects as under:

“(1) The Working Capital requirement in respect of wind power projects, small hydro projects, solar PV power projects, floating solar projects, solar thermal power projects, municipal solid waste-based power projects and refuse derived fuel-based power projects and renewable energy with storage projects shall be computed in accordance with the following:

a) Operation and Maintenance expenses for one month;

b) Receivables equivalent to 45 days of tariff for the sale of electricity calculated on the normative Capacity Utilisation Factor or Plant Load Factor, as the case may be; and

c) Maintenance spares equivalent to 15% of Operation and Maintenance expenses.

(2) The Working Capital requirement in respect of biomass power projects with Rankine cycle technology, biogas power projects, biomass gasifier-based power projects and non-fossil fuel-based co-generation projects shall be computed in accordance with the following:

a) Fuel costs for four months equivalent to normative Plant Load Factor;

b) Operation and Maintenance expenses for one month;

c) Receivables equivalent to 45 days of tariff for the sale of electricity calculated on the plant load factor; and

d) Maintenance spares equivalent to 15% of Operation and Maintenance expenses.

(3) In the case of renewable hybrid energy projects, the Working Capital requirement shall be the sum of the Working Capital requirement determined as per norms applicable for renewable energy sources in proportion to their rated capacity in the project.

(4) Interest on Working Capital shall be at an interest rate equivalent to the normative interest rate of three hundred and twenty-five (325) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenor) prevalent during the last available six months.”

34. Receivables equivalent to forty-five (45) days of tariff for sale of electricity calculated on the plant load factor and four months of fuel cost, (as applicable for biomass power, non-fossil fuel-based co- generation, biomass gasifier and biogas power) have been considered.

35. Interest rate has been computed as average of State Bank of India MCLR (One Year Tenor) prevalent during the last available six months (i.e. from 15th November, 2025 till



14th May, 2026) plus 325 basis points, which comes to the interest rate of 11.96% (i.e. 8.71 % plus 325 basis points).

36. The parameters considered for computation of the interest on working capital are stipulated in following table:

Details	Small Hydro and RDF-based MSW	Biomass-Based (Rankine Cycle), Non-Fossil-Fuel Generation, Biomass Gasifier and Biogas.
(a) For Fixed Charge		
O&M Charges (Month)	1 month	1 month
Maintenance Spares (%) of O&M Expenses	15%	15%
Receivables (Days)	45 days	45 days
(b) For Variable Charge		
Biomass/Bagasse Stock (Months)	-	4 months
(c) Rate of Interest on working capital (%)	11.96%	11.96%

M. Operation and Maintenance Expenses

37. Regulation 19 of the RE Tariff Regulations, 2024 specifies for Operation and Maintenance Expenses (O&M expenses) in respect of RE projects as following:

“19. Operation and Maintenance Expenses

(1) Operation and Maintenance expenses shall be determined for the Tariff Period of the project based on normative O&M expenses specified in these regulations for the first year of the Control Period.

(2) Normative O&M expenses allowed during the first year of the Control Period, i.e. financial year 2024-25, under these regulations, shall be escalated at the rate of 5.25% per annum for the Tariff Period.”

38. The normative O&M expenses for various RE technologies specified under the relevant provisions of the RE Tariff Regulations, 2024 are as under:

- I. **Small Hydro Projects (SHP):** Regulation 30 of the RE Tariff Regulations, 2024 provide for the normative O&M expenses for small hydro projects for the third year of the Control Period, which shall be escalated at the rate of 5.25% per annum over the tariff period for determination of the levellised tariff. Accordingly, the table below represents the O&M cost for SHP as specified by the Commission:



Region	Project Size	O&M Expenses (Rs. Lakh/MW)
Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh and North Eastern States	Below 5 MW	54.55
	5 MW to 25 MW	40.91
Other States	Below 5 MW	43.93
	5 MW to 25 MW	31.81

- II. **Biomass power projects based on Rankine cycle technology:** Normative O&M Expenses for the third year of the Control Period as per Regulation 35 of the RE Tariff Regulations, 2024, shall be Rs.60.59 lakhs per MW
- III. **Non-fossil fuel-based co-generation projects:** Normative O&M Expenses for the third year of the Control Period as per Regulation 45 of RE Tariff Regulations, 2024, shall be Rs. 32.01 lakhs per MW
- IV. **Biomass gasifier-based power projects:** Normative O&M Expenses for the third year of the Control Period as per Regulation 54 of the RE Tariff Regulations, 2024, shall be Rs. 80.04 lakhs per MW
- V. **Biogas-based power projects:** Normative O&M Expenses for the third year of the Control Period as per Regulation 59 of the RE Tariff Regulations, 2024, shall be Rs. 80.04 lakhs per MW
- VI. **Refuse-derived fuel-based municipal solid waste power projects:** Normative O&M Expenses for the third year of the Control Period, as per Regulation 65 of the RE Tariff Regulations, 2024 shall be 8.5% of the Capital cost of RDF-based MSW power project i.e. Rs. 207.15lakh per MW.

N. Capacity Utilisation Factor (CUF)/Plant Load Factor (PLF)

39. Regulation 18 of the RE Tariff Regulations, 2024, as defined below, specifies the number of hours for calculation of CUF/PLF as 8766.

“The number of hours in a year for calculation of the capacity utilization factor and plant load factor, as the case may be, shall be considered as 8766.”

40. Small Hydro Projects: Regulation 28 of the RE Tariff Regulations, 2024 specifies the norms for Capacity Utilization Factor (CUF) of units generated in a year in respect of the Small Hydro generating stations as per the details given in the table below:



Small Hydro Projects	CUF (%)
Himachal Pradesh, Uttarakhand, West Bengal, Union Territory of Jammu and Kashmir, Union Territory of Ladakh, North Eastern States and Odisha	45%
Punjab	40%
Other States	30%

41. Further, the Commission has considered the Plant Load Factor (PLF) for Biomass (Rankine Cycle), Biomass Gasifier, and Biogas-based renewable energy generating stations as specified in Regulations 32, 51 and 57 of the RE Tariff Regulations, 2024, which are given in the following table:

Renewable Energy Projects	PLF (%)
Biomass-Based (Rankine Cycle)	80%
Biomass Gasifier	85%
Biogas	90%

42. Further, as regards Non-fossil Fuel based Co-generation projects, the Commission has considered PLF as specified in Regulation 40, which is given in the following Table:

Non-fossil Fuel based Co- generation Projects	PLF (%)
Uttar Pradesh and Andhra Pradesh	45%
Tamil Nadu and Maharashtra	60%
Other States	53%

43. Plant load factor for determining tariff for refuse-derived fuel-based municipal solid waste power projects, as per Regulation 63 (1) of the RE Tariff Regulations, 2024, shall be:

Plant Load Factor	RDF
During stabilization period	65%
During the remaining period of the first year (after the stabilization period)	65%
2nd Year Onwards	80%

O. Auxiliary Consumption

44. The Commission has considered the Auxiliary Consumption as specified in Regulations 29, 33, 41, 52, 58 and 64 of the RE Tariff Regulations 2024, which is shown in the following Table:



Renewable Energy Projects	(%)
Small Hydro	1.00%
Biomass Projects based on Rankine cycle	
- Using water cooled condenser	10%
- Using air cooled condenser	12%
Non-Fossil Fuel based co-generation	8.5%
Biomass Gasifier	10%
Biogas	12%
Refuse derived fuel-based municipal solid waste power projects	15%

P. Station Heat Rate

45. The Station Heat Rates (SHR) specified under Regulations 34 and 42 of the RE Tariff Regulations, 2024, for biomass power projects based on the Rankine Cycle and non-fossil fuel-based co-generation projects are as under:

Renewable Energy Projects	SHR (kcal/Kwh)
Biomass power project based on Rankine Cycle	a) For projects using travelling grate boilers: 4200 kCal/kWh b) For projects using AFBC boilers: 4125 kCal/kWh
Non-Fossil Fuel based co-generation	3600 kCal/kWh

Q. Fuel Parameters

a) Fuel Mix

46. Regulation 53 of the RE Tariff Regulations, 2024 specifies that the normative specific fuel consumption shall be 1.25 kg per kWh for a biomass gasifier-based power project.

47. Also, Regulation 60 of the RE Tariff Regulations, 2024 specifies that the normative specific fuel consumption shall be 3 kg of substrate mix per kWh for a biogas-based power project.

48. The Commission has considered the fuel mix for Biomass Gasifier-based power projects and Biogas-based power projects as specified above.

b) Calorific Value

49. The Commission has considered the calorific value for biomass fuel used as 3100 kCal/kg as per Regulation 37 of the RE Tariff Regulations, 2024.



50. Also, the gross calorific value for bagasse in the case of non-fossil fuel cogeneration projects has been considered as 2250 kCal/kg as per Regulation 43 of the RE Tariff Regulations, 2024 and for the use of biomass fuels other than bagasse, the calorific value as specified in the above Para shall be applicable.

c) Fuel Cost

51. The Commission, as per Regulation 38 of the RE Tariff Regulations, 2024, has specified the Biomass fuel price for the third year of the Control Period in the table below. The fuel prices have been derived by escalating the notified prices of the first year of the control period by 3.45%. For each subsequent year of the Tariff Period, a normative escalation factor of 3.45% per annum shall be applicable, unless reviewed and ordered otherwise by the Commission.

States	Biomass Fuel Price for 3rd year of Control Period (Rs. /MT)
Andhra Pradesh	4262.57
Haryana	4852.24
Maharashtra	4962.47
Punjab	5074.84
Rajasthan	4235.81
Tamil Nadu	4193.01
Telangana	4262.57
Uttar Pradesh	4337.48
Other States	4559.01

52. The Commission, as per Regulation 44 (1) of the RE Tariff Regulations, 2024, has specified the Bagasse fuel price during the third year of the Control Period in the following table. The fuel prices have been derived by escalating the notified prices of the first year of the control period by 3.45%. For each subsequent year of the Tariff Period, a normative escalation factor of 3.45% per annum shall be applicable, unless reviewed and ordered otherwise by the Commission.

States	Bagasse Price for 3rd year of Control Period (Rs. /MT)
Andhra Pradesh	2406.86
Haryana	3423.54
Maharashtra	3373.24
Punjab	3012.59

Tamil Nadu	2593.07
Telangana	2405.79
Uttar Pradesh	2685.11
Other States	2914.13

53. As per Regulation 55 of the RE Tariff Regulations, the biomass fuel price for Biomass gasifier-based power projects applicable for the third year of the Control Period shall be the same as for biomass-based power projects (Rankine cycle), as determined in accordance with Regulation 38 and as mentioned in Clause 50 of this Order.

54. The Commission, as per Regulation 61 of the RE Tariff Regulations, 2024, has specified the feedstock price for Biogas-based power projects during the third year of the Control Period at Rs.1821.46/MT. The fuel prices have been derived by escalating the notified prices of the first year of the control period by 3.45%. For each subsequent year of the Tariff Period, a normative escalation factor of 3.45% per annum shall be applicable, unless reviewed and ordered otherwise by the Commission.

R. Subsidy or Incentives by State/Central Government

55. Regulation 22 (1) of the RE Tariff Regulations provides as under:

“(1) The Commission shall take into consideration any incentive, grant or subsidy from the Central or State Government, including accelerated depreciation benefit, availed by the project 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 and corporate income tax rate as per relevant provisions of the Income Tax Act, 1961, as amended from time to time; and

ii. Capitalization of renewable energy projects during the second half of the fiscal year.

iii. Per unit benefit shall be derived on a levelized basis at a discount factor equivalent to the weighted average cost of capital.

(2) Any grant, subsidy or incentive availed by renewable energy project, which is not considered at the time of determination of tariff, shall be deducted by the beneficiary in subsequent bills after receipt of such grant, subsidy or incentive in suitable instalments or within such period as may be stipulated by the Commission.

(3) In case the Central or State Government or their agencies provide any generation- based incentive, which is specifically over and above the tariff, such incentive shall neither be taken into account while determining the tariff nor be deducted by the beneficiary in subsequent bills raised by the particular Renewable energy project.”

56. Capital subsidy provided by the Government as per the prevailing scheme/policy has not been considered, while considering the capital cost of the project in this Tariff Order. Therefore, any grant, subsidy or incentive availed by the renewable energy project shall be deducted by the beneficiaries in subsequent bills after receipt of such grant, subsidy or incentive.
57. In terms of the above regulation, for the projects availing the benefit of accelerated depreciation, an applicable Corporate tax rate of 34.94% has been considered. For the purpose of determining net depreciation benefits, depreciation @ 5.28% as per the straight line method (Book depreciation as per Companies Act, 1956) has been compared with depreciation as per the Income Tax Act, i.e. 40% of the written down value method. Moreover, an 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 (iia) of the Income Tax Act.
58. Depreciation for the first year has been calculated at the rate of 50% of accelerated depreciation (40%) and 50% of additional depreciation (20%) (as the project is capitalized during the second half of the financial year as per proviso to sub regulation (1) of Regulation 22). Income tax benefits of accelerated depreciation and additional depreciation, have been worked out as per the normal tax rate on the net depreciation benefit. Per unit Levelised accelerated depreciation benefit has been computed considering the post- tax weighted average cost of capital as the discount factor. Accelerated depreciation benefit has been computed as per the existing provisions of the Income Tax Act.
59. In the light of the discussion made in the preceding paragraphs, the generic tariffs of different RE projects for the third year of the Control Period have been arrived as follows:

GENERIC TARIFF FOR RE TECHNOLOGIES FOR THE THIRD YEAR OF THE CONTROL PERIOD

12. The Generic Tariff for RE Technologies computed for the third year of the control period is shown in the subsequent Tables:



Particulars	Levellised Total Tariff (Rs/kWh)
Small Hydro Power Project	
Himachal Pradesh, Uttarakhand, West Bengal, North Eastern States, Union Territories of Jammu and Kashmir & Ladakh (Below 5 MW)	6.69
Himachal Pradesh, Uttarakhand, West Bengal, North Eastern States, Union Territories of Jammu and Kashmir & Ladakh (5 MW to 25 MW)	6.02
Odisha (Below 5 MW)	5.13
Odisha (5 MW to 25 MW)	5.00
Punjab (Below 5 MW)	5.77
Punjab (5 MW to 25 MW)	5.62
Others States (Below 5 MW)	7.70
Others States (5 MW to 25 MW)	7.49

State	Levellised Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levellised tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and travelling grate boiler					
AP	3.41	6.42	9.82	0.14	9.68
Haryana	3.47	7.30	10.78	0.14	10.64
Maharashtra	3.48	7.47	10.95	0.14	10.81
Punjab	3.50	7.64	11.14	0.14	11.00
Rajasthan	3.40	6.38	9.78	0.14	9.64
Tamil Nadu	3.40	6.31	9.71	0.14	9.57
Telangana	3.41	6.42	9.82	0.14	9.68
UP	3.41	6.53	9.94	0.14	9.80
Others	3.44	6.86	10.30	0.14	10.16

State	Levellised Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levellised tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and travelling grate boiler					
AP	3.58	6.56	10.15	0.15	9.99



State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levelled tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
Haryana	3.65	7.47	11.12	0.15	10.97
Maharashtra	3.66	7.64	11.30	0.15	11.15
Punjab	3.68	7.81	11.49	0.15	11.34
Rajasthan	3.58	6.52	10.10	0.15	9.95
Tamil Nadu	3.58	6.46	10.03	0.15	9.88
Telangana	3.58	6.56	10.15	0.15	9.99
UP	3.59	6.68	10.27	0.15	10.12
Others	3.62	7.02	10.64	0.15	10.48

State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levelled tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and travelling grate boiler					
AP	3.53	6.42	9.95	0.15	9.79
Haryana	3.60	7.30	10.90	0.15	10.75
Maharashtra	3.61	7.47	11.08	0.15	10.93
Punjab	3.62	7.64	11.26	0.15	11.11
Rajasthan	3.53	6.38	9.90	0.15	9.75
Tamil Nadu	3.52	6.31	9.83	0.15	9.68
Telangana	3.53	6.42	9.95	0.15	9.79
UP	3.54	6.53	10.07	0.15	9.92
Others	3.56	6.86	10.43	0.15	10.27

State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levelled tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and travelling grate boiler					
AP	3.71	6.56	10.27	0.17	10.11
Haryana	3.78	7.47	11.25	0.17	11.08
Maharashtra	3.79	7.64	11.43	0.17	11.27
Punjab	3.80	7.81	11.62	0.17	11.45
Rajasthan	3.71	6.52	10.23	0.17	10.06
Tamil Nadu	3.70	6.46	10.16	0.17	9.99
Telangana	3.71	6.56	10.27	0.17	10.11
UP	3.72	6.68	10.40	0.17	10.23



State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levellised tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
Others	3.75	7.02	10.76	0.17	10.60

State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levellised tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and AFBC boiler					
AP	3.40	6.30	9.70	0.14	9.56
Haryana	3.46	7.17	10.64	0.14	10.50
Maharashtra	3.47	7.34	10.81	0.14	10.67
Punjab	3.49	7.50	10.99	0.14	10.85
Rajasthan	3.39	6.26	9.66	0.14	9.52
Tamil Nadu	3.39	6.20	9.59	0.14	9.45
Telangana	3.40	6.30	9.70	0.14	9.56
UP	3.41	6.41	9.82	0.14	9.68
Others	3.43	6.74	10.17	0.14	10.03

State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levellised tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and AFBC boiler					
AP	3.58	6.45	10.02	0.15	9.87
Haryana	3.64	7.34	10.98	0.15	10.83
Maharashtra	3.65	7.50	11.16	0.15	11.00
Punjab	3.67	7.67	11.34	0.15	11.19
Rajasthan	3.57	6.40	9.98	0.15	9.82
Tamil Nadu	3.57	6.34	9.91	0.15	9.75
Telangana	3.58	6.45	10.02	0.15	9.87
UP	3.58	6.56	10.14	0.15	9.99
Others	3.61	6.89	10.50	0.15	10.35



State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levelled tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and AFBC boiler					
AP	3.52	6.30	9.82	0.15	9.67
Haryana	3.59	7.17	10.76	0.15	10.61
Maharashtra	3.60	7.34	10.94	0.15	10.78
Punjab	3.61	7.50	11.11	0.15	10.96
Rajasthan	3.52	6.26	9.78	0.15	9.63
Tamil Nadu	3.51	6.20	9.71	0.15	9.56
Telangana	3.52	6.30	9.82	0.15	9.67
UP	3.53	6.41	9.94	0.15	9.79
Others	3.55	6.74	10.29	0.15	10.14

State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levelled tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and AFBC boiler					
AP	3.70	6.45	10.15	0.17	9.98
Haryana	3.77	7.34	11.11	0.17	10.94
Maharashtra	3.78	7.50	11.29	0.17	11.12
Punjab	3.79	7.67	11.47	0.17	11.30
Rajasthan	3.70	6.40	10.10	0.17	9.94
Tamil Nadu	3.69	6.34	10.04	0.17	9.87
Telangana	3.70	6.45	10.15	0.17	9.98
UP	3.71	6.56	10.27	0.17	10.10
Others	3.74	6.89	10.63	0.17	10.46

State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levelled tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Bagasse Based Co-generation Project					
AP	3.85	4.21	8.06	0.22	7.84
Haryana	3.45	5.99	9.43	0.18	9.25
Maharashtra	3.09	5.90	8.99	0.16	8.83
Punjab	3.39	5.27	8.66	0.18	8.48
Tamil Nadu	2.99	4.53	7.52	0.16	7.36



State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levellised tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
Telangana	3.31	4.21	7.52	0.18	7.34
UP	3.88	4.70	8.58	0.22	8.36
Others	3.38	5.10	8.48	0.18	8.29

State	Levelling Fixed Cost	Variable Cost	Applicable Tariff Rates	Benefit of Accelerated Depreciation (if availed)	Net levellised tariff (upon adjusting for Accelerated Depreciation Benefit) (if availed)
	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Biomass Gasifier Power Project					
AP	3.66	5.72	9.38	0.14	9.24
Haryana	3.72	6.51	10.23	0.14	10.09
Maharashtra	3.73	6.66	10.39	0.14	10.25
Punjab	3.74	6.81	10.55	0.14	10.41
Rajasthan	3.66	5.69	9.34	0.14	9.2
Tamil Nadu	3.65	5.63	9.28	0.14	9.14
Telangana	3.66	5.72	9.38	0.14	9.24
UP	3.67	5.82	9.49	0.14	9.35
Others	3.69	6.12	9.81	0.14	9.67
Biogas based generation					
Biogas	4.96	6.21	11.17	0.27	10.90
RDF Technology					
RDF	10.69	-	10.69	0.55	10.14

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

Sl. No.	Renewable Energy Projects	Annexure
A	Small Hydro Power Projects	
	<i>Projects Less than 5 MW for HP, Uttarakhand, West Bengal, Jammu and Kashmir, Ladakh and NE States</i>	<i>Annexure 1A</i>
	<i>Projects between 5 MW and 25 MW for HP, Uttarakhand, West Bengal, Jammu and Kashmir, Ladakh and NE States</i>	<i>Annexure 1B</i>
	<i>Projects less than 5 MW for Odisha</i>	<i>Annexure 1C</i>
	<i>Projects between 5 MW and 25 MW for Odisha</i>	<i>Annexure 1D</i>
	<i>Projects less than 5 MW for Punjab</i>	<i>Annexure 1E</i>
	<i>Projects between 5 MW and 25 MW for Punjab</i>	<i>Annexure 1F</i>
	<i>Projects less than 5 MW for other States</i>	<i>Annexure 1G</i>
	<i>Projects between 5 MW and 25 MW for other states</i>	<i>Annexure 1H</i>
B.1	Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Water Cooled	



Sl. No.	Renewable Energy Projects	Annexure
	Condenser and using Travelling Grate	
	<i>Andhra Pradesh</i>	<i>Annexure 2.1A</i>
	<i>Haryana</i>	<i>Annexure 2.1B</i>
	<i>Maharashtra</i>	<i>Annexure 2.1C</i>
	<i>Punjab</i>	<i>Annexure 2.1D</i>
	<i>Rajasthan</i>	<i>Annexure 2.1E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.1F</i>
	<i>Telangana</i>	<i>Annexure 2.1G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.1H</i>
	<i>Others</i>	<i>Annexure 2.1I</i>
B.2	Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using Travelling Grate boiler	
	<i>Andhra Pradesh</i>	<i>Annexure 2.2A</i>
	<i>Haryana</i>	<i>Annexure 2.2B</i>
	<i>Maharashtra</i>	<i>Annexure 2.2C</i>
	<i>Punjab</i>	<i>Annexure 2.2D</i>
	<i>Rajasthan</i>	<i>Annexure 2.2E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.2F</i>
	<i>Telangana</i>	<i>Annexure 2.2G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.2H</i>
	<i>Others</i>	<i>Annexure 2.2I</i>
B.3	Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and using Travelling Grate boiler	
	<i>Andhra Pradesh</i>	<i>Annexure 2.3A</i>
	<i>Haryana</i>	<i>Annexure 2.3B</i>
	<i>Maharashtra</i>	<i>Annexure 2.3C</i>
	<i>Punjab</i>	<i>Annexure 2.3D</i>
	<i>Rajasthan</i>	<i>Annexure 2.3E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.3F</i>
	<i>Telangana</i>	<i>Annexure 2.3G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.3H</i>
	<i>Others</i>	<i>Annexure 2.3I</i>
B.4	Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using Travelling Grate boiler	
	<i>Andhra Pradesh</i>	<i>Annexure 2.4A</i>
	<i>Haryana</i>	<i>Annexure 2.4B</i>
	<i>Maharashtra</i>	<i>Annexure 2.4C</i>
	<i>Punjab</i>	<i>Annexure 2.4D</i>
	<i>Rajasthan</i>	<i>Annexure 2.4E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.4F</i>
	<i>Telangana</i>	<i>Annexure 2.4G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.4H</i>
	<i>Others</i>	<i>Annexure 2.4I</i>
B.5	Biomass Power Projects [other than Rice Straw and	



Sl. No.	Renewable Energy Projects	Annexure
	Juliflora (plantation) based project] with Water Cooled Condenser and using AFBC boiler	
	<i>Andhra Pradesh</i>	<i>Annexure 2.5A</i>
	<i>Haryana</i>	<i>Annexure 2.5B</i>
	<i>Maharashtra</i>	<i>Annexure 2.5C</i>
	<i>Punjab</i>	<i>Annexure 2.5D</i>
	<i>Rajasthan</i>	<i>Annexure 2.5E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.5F</i>
	<i>Telangana</i>	<i>Annexure 2.5G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.5H</i>
	<i>Others</i>	<i>Annexure 2.5I</i>
B.6	Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using AFBC	
	<i>Andhra Pradesh</i>	<i>Annexure 2.6A</i>
	<i>Haryana</i>	<i>Annexure 2.6B</i>
	<i>Maharashtra</i>	<i>Annexure 2.6C</i>
	<i>Punjab</i>	<i>Annexure 2.6D</i>
	<i>Rajasthan</i>	<i>Annexure 2.6E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.6F</i>
	<i>Telangana</i>	<i>Annexure 2.6G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.6H</i>
	<i>Others</i>	<i>Annexure 2.6I</i>
B.7	Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Water Cooled Condenser and using AFBC boiler	
	<i>Andhra Pradesh</i>	<i>Annexure 2.7A</i>
	<i>Haryana</i>	<i>Annexure 2.7B</i>
	<i>Maharashtra</i>	<i>Annexure 2.7C</i>
	<i>Punjab</i>	<i>Annexure 2.7D</i>
	<i>Rajasthan</i>	<i>Annexure 2.7E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.7F</i>
	<i>Telangana</i>	<i>Annexure 2.7G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.7H</i>
	<i>Others</i>	<i>Annexure 2.7I</i>
B.8	Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with Air Cooled Condenser and using AFBC boiler	
	<i>Andhra Pradesh</i>	<i>Annexure 2.8A</i>
	<i>Haryana</i>	<i>Annexure 2.8B</i>
	<i>Maharashtra</i>	<i>Annexure 2.8C</i>
	<i>Punjab</i>	<i>Annexure 2.8D</i>
	<i>Rajasthan</i>	<i>Annexure 2.8E</i>
	<i>Tamil Nadu</i>	<i>Annexure 2.8F</i>
	<i>Telangana</i>	<i>Annexure 2.8G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 2.8H</i>
	<i>Others</i>	<i>Annexure 2.8I</i>
C	Non-Fossil Fuel Based Cogeneration	



Sl. No.	Renewable Energy Projects	Annexure
	<i>Andhra Pradesh</i>	<i>Annexure 3A</i>
	<i>Haryana</i>	<i>Annexure 3B</i>
	<i>Maharashtra</i>	<i>Annexure 3C</i>
	<i>Punjab</i>	<i>Annexure 3D</i>
	<i>Tamil Nadu</i>	<i>Annexure 3E</i>
	<i>Telangana</i>	<i>Annexure 3F</i>
	<i>Uttar Pradesh</i>	<i>Annexure 3G</i>
	<i>Others</i>	<i>Annexure 3H</i>
D	Biomass Gasifier Power Projects	
	<i>Andhra Pradesh</i>	<i>Annexure 4A</i>
	<i>Haryana</i>	<i>Annexure 4B</i>
	<i>Maharashtra</i>	<i>Annexure 4C</i>
	<i>Punjab</i>	<i>Annexure 4D</i>
	<i>Rajasthan</i>	<i>Annexure 4E</i>
	<i>Tamil Nadu</i>	<i>Annexure 4F</i>
	<i>Telangana</i>	<i>Annexure 4G</i>
	<i>Uttar Pradesh</i>	<i>Annexure 4H</i>
	<i>Others</i>	<i>Annexure 4I</i>
E	Biogas Power Projects	<i>Annexure 5</i>
F	RDF based MSW Power Projects	<i>Annexure 6</i>



Assumption for Small Hydro based Project Parameters			Projects Less than 5 MW for HP, Uttarakhand, West Bengal, J&K, Ladakh and NE States		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	45%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	1,200.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	1,200.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	840.00
			Total Equity Amount	Rs Lacs	360.00
		<u>Debt Component</u>	Loan Amount	Rs Lacs	840.00
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	360.00
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	54.55
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
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		54.55	57.41	60.42	63.60	66.93	70.45	74.15	78.04	82.14	86.45	90.99	95.76	100.79	106.08	111.65	117.52	123.68	130.18	137.01	144.21
Depreciation	Rs Lakh		56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	9.60	9.60	9.60	9.60	9.60
Interest on term loan	Rs Lakh		86.95	80.95	74.96	68.96	62.96	56.97	50.97	44.97	38.98	32.98	26.98	20.99	14.99	8.99	3.00	-	-	-	-	-
Interest on working Capital	Rs Lakh		5.53	5.57	5.61	5.66	5.71	5.77	5.84	5.92	6.01	6.10	6.21	6.33	6.45	6.59	6.75	6.25	6.52	6.80	7.10	7.41
Return on Equity	Rs Lakh		65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43
Total Fixed Cost	Rs Lakh		268.46	265.37	262.42	259.65	257.04	254.62	252.39	250.37	248.55	246.97	245.62	244.51	243.67	243.11	242.83	198.80	205.24	212.01	219.14	226.65
Per unit Fixed Cost	Rs/kWh		6.87	6.80	6.72	6.65	6.58	6.52	6.46	6.41	6.36	6.32	6.29	6.26	6.24	6.23	6.22	5.09	5.26	5.43	5.61	5.80
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	2.56	1.40	1.47	1.55	1.63	1.71	1.80	1.90	2.00	2.10	2.21	2.33	2.45	2.58	2.72	2.86	3.01	3.17	3.33	3.51	3.69
Depreciation	Rs/kWh	1.15	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	0.25	0.25	0.25	0.25	0.25
Int. on term loan	Rs/kWh	1.07	2.23	2.07	1.92	1.77	1.61	1.46	1.31	1.15	1.00	0.84	0.69	0.54	0.38	0.23	0.08	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.17	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.18	0.19
RoE	Rs/kWh	1.74	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68
Total COG	Rs/kWh	6.69	6.87	6.80	6.72	6.65	6.58	6.52	6.46	6.41	6.36	6.32	6.29	6.26	6.24	6.23	6.22	5.09	5.26	5.43	5.61	5.80
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	6.69																					
Levellised Tariff	6.69	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	151.78	159.74	168.13	176.96	186.25	196.03	206.32	217.15	228.55	240.55	253.18	266.47	280.46	295.18	310.68	326.99	344.16	362.23	381.24	401.26
Depreciation	Rs Lakh	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	8.01	8.35	8.72	9.10	9.51	9.93	10.38	10.85	11.35	11.87	12.42	13.00	13.61	14.25	14.92	15.63	16.38	17.16	17.99	18.86
Return on Equity	Rs Lakh	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01
Total Fixed Cost	Rs Lakh	252.39	260.70	269.46	278.67	288.36	298.56	309.30	320.61	332.50	345.02	358.20	372.07	386.67	402.03	418.21	435.23	453.14	471.99	491.84	512.72
Per unit Fixed Cost	Rs/kWh	6.46	6.68	6.90	7.14	7.38	7.65	7.92	8.21	8.51	8.83	9.17	9.53	9.90	10.29	10.71	11.14	11.60	12.09	12.59	13.13
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	3.89	4.09	4.31	4.53	4.77	5.02	5.28	5.56	5.85	6.16	6.48	6.82	7.18	7.56	7.96	8.37	8.81	9.28	9.76	10.27
Depreciation	Rs/kWh	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Int. on term loan	Rs/kWh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.21	0.21	0.22	0.23	0.24	0.25	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.36	0.38	0.40	0.42	0.44	0.46	0.48
RoE	Rs/kWh	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13
Total COG	Rs/kWh	6.46	6.68	6.90	7.14	7.38	7.65	7.92	8.21	8.51	8.83	9.17	9.53	9.90	10.29	10.71	11.14	11.60	12.09	12.59	13.13
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03



Assumption for Small Hydro based Project Parameters			Projects between 5 MW and 25 MW for HP, Uttarakhand, West Bengal, J&K, Ladakh and NE States		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	45%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	1,200.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	1,200.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	840.00
			Total Equity Amount	Rs Lacs	360.00
		<u>Debt Component</u>	Loan Amount	Rs Lacs	840.00
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.91%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	360.00
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	40.91
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
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		40.91	43.06	45.32	47.70	50.20	52.84	55.61	58.53	61.60	64.84	68.24	71.82	75.59	79.56	83.74	88.14	92.76	97.63	102.76	108.15
Depreciation	Rs Lakh		56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	9.60	9.60	9.60	9.60	9.60
Interest on term loan	Rs Lakh		86.95	80.95	74.96	68.96	62.96	56.97	50.97	44.97	38.98	32.98	26.98	20.99	14.99	8.99	3.00	-	-	-	-	-
Interest on working Capital	Rs Lakh		4.94	4.94	4.95	4.96	4.98	5.01	5.04	5.07	5.11	5.16	5.22	5.29	5.36	5.44	5.53	4.97	5.17	5.39	5.61	5.84
Return on Equity	Rs Lakh		65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43	65.43
Total Fixed Cost	Rs Lakh		254.23	250.39	246.66	243.05	239.58	236.24	233.05	230.01	227.13	224.41	221.88	219.53	217.38	215.43	213.70	168.14	172.97	178.05	183.40	189.03
Per unit Fixed Cost	Rs/kWh		6.51	6.41	6.32	6.22	6.13	6.05	5.97	5.89	5.82	5.75	5.68	5.62	5.57	5.52	5.47	4.31	4.43	4.56	4.70	4.84
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	1.92	1.05	1.10	1.16	1.22	1.29	1.35	1.42	1.50	1.58	1.66	1.75	1.84	1.94	2.04	2.14	2.26	2.38	2.50	2.63	2.77
Depreciation	Rs/kWh	1.15	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	0.25	0.25	0.25	0.25	0.25
Int. on term loan	Rs/kWh	1.07	2.23	2.07	1.92	1.77	1.61	1.46	1.31	1.15	1.00	0.84	0.69	0.54	0.38	0.23	0.08	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	0.14	0.14	0.14	0.14	0.13	0.13	0.14	0.14	0.15
RoE	Rs/kWh	1.74	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68
Total COG	Rs/kWh	6.02	6.51	6.41	6.32	6.22	6.13	6.05	5.97	5.89	5.82	5.75	5.68	5.62	5.57	5.52	5.47	4.31	4.43	4.56	4.70	4.84
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	6.02																					
Levellised Tariff	6.02	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	113.83	119.81	126.10	132.72	139.69	147.02	154.74	162.86	171.41	180.41	189.88	199.85	210.34	221.39	233.01	245.24	258.12	271.67	285.93	300.94
Depreciation	Rs Lakh	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60	9.60
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	6.36	6.62	6.89	7.18	7.48	7.80	8.14	8.49	8.86	9.25	9.67	10.10	10.56	11.04	11.54	12.07	12.63	13.22	13.84	14.50
Return on Equity	Rs Lakh	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01	83.01
Total Fixed Cost	Rs Lakh	212.79	219.03	225.59	232.50	239.77	247.43	255.48	263.96	272.88	282.27	292.15	302.56	313.51	325.03	337.16	349.92	363.36	377.50	392.38	408.05
Per unit Fixed Cost	Rs/kWh	5.45	5.61	5.78	5.95	6.14	6.34	6.54	6.76	6.99	7.23	7.48	7.75	8.03	8.32	8.63	8.96	9.30	9.67	10.05	10.45
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	2.91	3.07	3.23	3.40	3.58	3.76	3.96	4.17	4.39	4.62	4.86	5.12	5.39	5.67	5.97	6.28	6.61	6.96	7.32	7.71
Depreciation	Rs/kWh	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Int. on term loan	Rs/kWh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.30	0.31	0.32	0.34	0.35	0.37
RoE	Rs/kWh	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13
Total COG	Rs/kWh	5.45	5.61	5.78	5.95	6.14	6.34	6.54	6.76	6.99	7.23	7.48	7.75	8.03	8.32	8.63	8.96	9.30	9.67	10.05	10.45
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03



Assumption for Small Hydro based Project Parameters			Projects less than 5 MW for Odisha		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	45%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	890.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	890.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	623.00
			Total Equity Amount	Rs Lacs	267.00
		<u>Debt Component</u>	Loan Amount	Rs Lacs	623.00
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	267.00
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	43.93
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
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		43.93	46.24	48.67	51.22	53.91	56.74	59.72	62.86	66.16	69.63	73.29	77.13	81.18	85.44	89.93	94.65	99.62	104.85	110.36	116.15
Depreciation	Rs Lakh		41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	7.12	7.12	7.12	7.12	7.12
Interest on term loan	Rs Lakh		64.49	60.04	55.59	51.15	46.70	42.25	37.80	33.36	28.91	24.46	20.01	15.57	11.12	6.67	2.22	-	-	-	-	-
Interest on working Capital	Rs Lakh		4.26	4.29	4.33	4.37	4.42	4.48	4.54	4.61	4.68	4.77	4.86	4.96	5.07	5.18	5.31	4.96	5.18	5.41	5.65	5.90
Return on Equity	Rs Lakh		48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53
Total Fixed Cost	Rs Lakh		202.74	200.63	198.65	196.80	195.09	193.53	192.13	190.88	189.81	188.92	188.22	187.72	187.43	187.36	187.53	155.26	160.45	165.91	171.65	177.70
Per unit Fixed Cost	Rs/kWh		5.19	5.14	5.09	5.04	5.00	4.96	4.92	4.89	4.86	4.84	4.82	4.81	4.80	4.80	4.80	3.98	4.11	4.25	4.40	4.55
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	2.06	1.12	1.18	1.25	1.31	1.38	1.45	1.53	1.61	1.69	1.78	1.88	1.98	2.08	2.19	2.30	2.42	2.55	2.68	2.83	2.97
Depreciation	Rs/kWh	0.85	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	0.79	1.65	1.54	1.42	1.31	1.20	1.08	0.97	0.85	0.74	0.63	0.51	0.40	0.28	0.17	0.06	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.13	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.14	0.13	0.13	0.14	0.14	0.15
RoE	Rs/kWh	1.29	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Total COG	Rs/kWh	5.13	5.19	5.14	5.09	5.04	5.00	4.96	4.92	4.89	4.86	4.84	4.82	4.81	4.80	4.80	4.80	3.98	4.11	4.25	4.40	4.55
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	5.13																					
Levellised Tariff	5.13	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	122.25	128.67	135.42	142.53	150.01	157.89	166.18	174.90	184.08	193.75	203.92	214.63	225.89	237.75	250.24	263.37	277.20	291.75	307.07	323.19
Depreciation	Rs Lakh	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	6.36	6.64	6.93	7.24	7.57	7.91	8.27	8.65	9.05	9.47	9.91	10.38	10.87	11.38	11.93	12.50	13.10	13.73	14.40	15.10
Return on Equity	Rs Lakh	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56
Total Fixed Cost	Rs Lakh	197.29	203.99	211.04	218.45	226.26	234.48	243.13	252.23	261.82	271.90	282.52	293.69	305.44	317.82	330.85	344.55	358.98	374.17	390.15	406.97
Per unit Fixed Cost	Rs/kWh	5.05	5.22	5.40	5.59	5.79	6.00	6.23	6.46	6.70	6.96	7.23	7.52	7.82	8.14	8.47	8.82	9.19	9.58	9.99	10.42
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	3.13	3.29	3.47	3.65	3.84	4.04	4.26	4.48	4.71	4.96	5.22	5.50	5.78	6.09	6.41	6.74	7.10	7.47	7.86	8.28
Depreciation	Rs/kWh	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.27	0.28	0.29	0.31	0.32	0.34	0.35	0.37	0.39
RoE	Rs/kWh	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	5.05	5.22	5.40	5.59	5.79	6.00	6.23	6.46	6.70	6.96	7.23	7.52	7.82	8.14	8.47	8.82	9.19	9.58	9.99	10.42
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03



Assumption for Small Hydro based Project Parameters			Projects between 5 MW and 25 MW for Odisha		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	45%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	1,027.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	1,027.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	718.90
			Total Equity Amount	Rs Lacs	308.10
		<u>Debt Component</u>	Loan Amount	Rs Lacs	718.90
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	308.10
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	31.81
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
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		31.81	33.49	35.24	37.09	39.04	41.09	43.25	45.52	47.91	50.42	53.07	55.86	58.79	61.88	65.12	68.54	72.14	75.93	79.91	84.11
Depreciation	Rs Lakh		47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	8.22	8.22	8.22	8.22	8.22
Interest on term loan	Rs Lakh		74.42	69.28	64.15	59.02	53.89	48.76	43.62	38.49	33.36	28.23	23.09	17.96	12.83	7.70	2.57	-	-	-	-	-
Interest on working Capital	Rs Lakh		4.09	4.09	4.08	4.09	4.09	4.10	4.12	4.14	4.17	4.20	4.24	4.28	4.33	4.39	4.45	3.96	4.11	4.28	4.45	4.63
Return on Equity	Rs Lakh		56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00
Total Fixed Cost	Rs Lakh		214.25	210.78	207.40	204.12	200.95	197.88	194.92	192.08	189.36	186.77	184.33	182.02	179.87	177.88	176.06	136.71	140.47	144.42	148.58	152.96
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	1.50	0.81	0.86	0.90	0.95	1.00	1.05	1.11	1.17	1.23	1.29	1.36	1.43	1.51	1.58	1.67	1.76	1.85	1.94	2.05	2.15
Depreciation	Rs/kWh	0.98	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	0.21	0.21	0.21	0.21	0.21
Int. on term loan	Rs/kWh	0.91	1.91	1.77	1.64	1.51	1.38	1.25	1.12	0.99	0.85	0.72	0.59	0.46	0.33	0.20	0.07	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.12	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.11	0.11	0.11	0.12
RoE	Rs/kWh	1.49	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Total COG	Rs/kWh	5.00	5.49	5.40	5.31	5.23	5.15	5.07	4.99	4.92	4.85	4.78	4.72	4.66	4.61	4.56	4.51	3.50	3.60	3.70	3.80	3.92
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	5.00																					
Levellised Tariff	5.00	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	88.53	93.17	98.07	103.21	108.63	114.34	120.34	126.66	133.31	140.30	147.67	155.42	163.58	172.17	181.21	190.72	200.74	211.27	222.37	234.04
Depreciation	Rs Lakh	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	5.05	5.26	5.47	5.69	5.93	6.18	6.44	6.71	7.00	7.31	7.63	7.96	8.32	8.69	9.09	9.50	9.93	10.39	10.88	11.38
Return on Equity	Rs Lakh	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04
Total Fixed Cost	Rs Lakh	172.83	177.68	182.79	188.16	193.82	199.77	206.03	212.62	219.56	226.86	234.55	242.64	251.16	260.12	269.55	279.48	289.93	300.92	312.50	324.68
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	2.27	2.39	2.51	2.64	2.78	2.93	3.08	3.24	3.41	3.59	3.78	3.98	4.19	4.41	4.64	4.88	5.14	5.41	5.69	5.99
Depreciation	Rs/kWh	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.13	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.27	0.28	0.29
RoE	Rs/kWh	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
Total COG	Rs/kWh	4.43	4.55	4.68	4.82	4.96	5.12	5.28	5.44	5.62	5.81	6.01	6.21	6.43	6.66	6.90	7.16	7.42	7.71	8.00	8.31
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03



Assumption for Small Hydro based Project Parameters			Projects less than 5 MW for Punjab		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	40%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	890.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	890.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	623.00
			Total Equity Amount	Rs Lacs	267.00
		<u>Debt Component</u>	Loan Amount	Rs Lacs	623.00
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	267.00
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	43.93
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47
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		43.93	46.24	48.67	51.22	53.91	56.74	59.72	62.86	66.16	69.63	73.29	77.13	81.18	85.44	89.93	94.65	99.62	104.85	110.36	116.15
Depreciation	Rs Lakh		41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	7.12	7.12	7.12	7.12	7.12
Interest on term loan	Rs Lakh		64.49	60.04	55.59	51.15	46.70	42.25	37.80	33.36	28.91	24.46	20.01	15.57	11.12	6.67	2.22	-	-	-	-	-
Interest on working Capital	Rs Lakh		4.26	4.29	4.33	4.37	4.42	4.48	4.54	4.61	4.68	4.77	4.86	4.96	5.07	5.18	5.31	4.96	5.18	5.41	5.65	5.90
Return on Equity	Rs Lakh		48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53
Total Fixed Cost	Rs Lakh		202.74	200.63	198.65	196.80	195.09	193.53	192.13	190.88	189.81	188.92	188.22	187.72	187.43	187.36	187.53	155.26	160.45	165.91	171.65	177.70
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	2.32	1.27	1.33	1.40	1.48	1.55	1.63	1.72	1.81	1.91	2.01	2.11	2.22	2.34	2.46	2.59	2.73	2.87	3.02	3.18	3.35
Depreciation	Rs/kWh	0.96	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	0.21	0.21	0.21	0.21	0.21
Int. on term loan	Rs/kWh	0.89	1.86	1.73	1.60	1.47	1.35	1.22	1.09	0.96	0.83	0.70	0.58	0.45	0.32	0.19	0.06	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.15	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.14	0.15	0.16	0.16	0.17
RoE	Rs/kWh	1.45	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Total COG	Rs/kWh	5.77	5.84	5.78	5.72	5.67	5.62	5.58	5.53	5.50	5.47	5.44	5.42	5.41	5.40	5.40	5.40	4.47	4.62	4.78	4.94	5.12
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	5.77																					
Levellised Tariff	5.77	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	122.25	128.67	135.42	142.53	150.01	157.89	166.18	174.90	184.08	193.75	203.92	214.63	225.89	237.75	250.24	263.37	277.20	291.75	307.07	323.19
Depreciation	Rs Lakh	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	6.36	6.64	6.93	7.24	7.57	7.91	8.27	8.65	9.05	9.47	9.91	10.38	10.87	11.38	11.93	12.50	13.10	13.73	14.40	15.10
Return on Equity	Rs Lakh	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56
Total Fixed Cost	Rs Lakh	197.29	203.99	211.04	218.45	226.26	234.48	243.13	252.23	261.82	271.90	282.52	293.69	305.44	317.82	330.85	344.55	358.98	374.17	390.15	406.97
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	3.52	3.71	3.90	4.11	4.32	4.55	4.79	5.04	5.30	5.58	5.87	6.18	6.51	6.85	7.21	7.59	7.99	8.40	8.85	9.31
Depreciation	Rs/kWh	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.29	0.30	0.31	0.33	0.34	0.36	0.38	0.40	0.41	0.44
RoE	Rs/kWh	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
Total COG	Rs/kWh	5.68	5.88	6.08	6.29	6.52	6.75	7.00	7.27	7.54	7.83	8.14	8.46	8.80	9.16	9.53	9.93	10.34	10.78	11.24	11.72
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03



Assumption for Small Hydro based Project Parameters			Projects between 5 MW and 25 MW for Punjab		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	40%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	1,027.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	1,027.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	718.90
			Total Equity Amount	Rs Lacs	308.10
		<u>Debt Component</u>	Loan Amount	Rs Lacs	718.90
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	308.10
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	31.81
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47
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		31.81	33.49	35.24	37.09	39.04	41.09	43.25	45.52	47.91	50.42	53.07	55.86	58.79	61.88	65.12	68.54	72.14	75.93	79.91	84.11
Depreciation	Rs Lakh		47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	8.22	8.22	8.22	8.22	8.22
Interest on term loan	Rs Lakh		74.42	69.28	64.15	59.02	53.89	48.76	43.62	38.49	33.36	28.23	23.09	17.96	12.83	7.70	2.57	-	-	-	-	-
Interest on working Capital	Rs Lakh		4.09	4.09	4.08	4.09	4.09	4.10	4.12	4.14	4.17	4.20	4.24	4.28	4.33	4.39	4.45	3.96	4.11	4.28	4.45	4.63
Return on Equity	Rs Lakh		56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00
Total Fixed Cost	Rs Lakh		214.25	210.78	207.40	204.12	200.95	197.88	194.92	192.08	189.36	186.77	184.33	182.02	179.87	177.88	176.06	136.71	140.47	144.42	148.58	152.96
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	1.68	0.92	0.96	1.02	1.07	1.12	1.18	1.25	1.31	1.38	1.45	1.53	1.61	1.69	1.78	1.88	1.97	2.08	2.19	2.30	2.42
Depreciation	Rs/kWh	1.11	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	1.03	2.14	2.00	1.85	1.70	1.55	1.40	1.26	1.11	0.96	0.81	0.67	0.52	0.37	0.22	0.07	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.11	0.12	0.12	0.13	0.13
RoE	Rs/kWh	1.68	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61
Total COG	Rs/kWh	5.62	6.17	6.07	5.97	5.88	5.79	5.70	5.62	5.53	5.45	5.38	5.31	5.24	5.18	5.12	5.07	3.94	4.05	4.16	4.28	4.41
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	5.62																					
Levellised Tariff	5.62	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	88.53	93.17	98.07	103.21	108.63	114.34	120.34	126.66	133.31	140.30	147.67	155.42	163.58	172.17	181.21	190.72	200.74	211.27	222.37	234.04
Depreciation	Rs Lakh	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	5.05	5.26	5.47	5.69	5.93	6.18	6.44	6.71	7.00	7.31	7.63	7.96	8.32	8.69	9.09	9.50	9.93	10.39	10.88	11.38
Return on Equity	Rs Lakh	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04
Total Fixed Cost	Rs Lakh	172.83	177.68	182.79	188.16	193.82	199.77	206.03	212.62	219.56	226.86	234.55	242.64	251.16	260.12	269.55	279.48	289.93	300.92	312.50	324.68
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	2.55	2.68	2.82	2.97	3.13	3.29	3.47	3.65	3.84	4.04	4.25	4.48	4.71	4.96	5.22	5.49	5.78	6.09	6.41	6.74
Depreciation	Rs/kWh	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.15	0.16	0.16	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.29	0.30	0.31	0.33
RoE	Rs/kWh	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
Total COG	Rs/kWh	4.98	5.12	5.27	5.42	5.58	5.75	5.94	6.13	6.32	6.54	6.76	6.99	7.24	7.49	7.77	8.05	8.35	8.67	9.00	9.35
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03

Assumption for Small Hydro based Project Parameters			Projects less than 5 MW for other States		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	30%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	890.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	890.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	623.00
			Total Equity Amount	Rs Lacs	267.00
		<u>Debt Component</u>	Loan Amount	Rs Lacs	623.00
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	267.00
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	43.93
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		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
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		43.93	46.24	48.67	51.22	53.91	56.74	59.72	62.86	66.16	69.63	73.29	77.13	81.18	85.44	89.93	94.65	99.62	104.85	110.36	116.15
Depreciation	Rs Lakh		41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	41.53	7.12	7.12	7.12	7.12	7.12
Interest on term loan	Rs Lakh		64.49	60.04	55.59	51.15	46.70	42.25	37.80	33.36	28.91	24.46	20.01	15.57	11.12	6.67	2.22	-	-	-	-	-
Interest on working Capital	Rs Lakh		4.26	4.29	4.33	4.37	4.42	4.48	4.54	4.61	4.68	4.77	4.86	4.96	5.07	5.18	5.31	4.96	5.18	5.41	5.65	5.90
Return on Equity	Rs Lakh		48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53	48.53
Total Fixed Cost	Rs Lakh		202.74	200.63	198.65	196.80	195.09	193.53	192.13	190.88	189.81	188.92	188.22	187.72	187.43	187.36	187.53	155.26	160.45	165.91	171.65	177.70
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	3.10	1.69	1.78	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.12	3.28	3.45	3.64	3.83	4.03	4.24	4.46
Depreciation	Rs/kWh	1.28	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	0.27	0.27	0.27	0.27	0.27
Int. on term loan	Rs/kWh	1.19	2.48	2.31	2.14	1.96	1.79	1.62	1.45	1.28	1.11	0.94	0.77	0.60	0.43	0.26	0.09	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.20	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.19	0.20	0.21	0.22	0.23
RoE	Rs/kWh	1.94	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86
Total COG	Rs/kWh	7.70	7.79	7.71	7.63	7.56	7.49	7.43	7.38	7.33	7.29	7.26	7.23	7.21	7.20	7.20	7.20	5.96	6.16	6.37	6.59	6.83
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	7.70																					
Levellised Tariff	7.70	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	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
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	122.25	128.67	135.42	142.53	150.01	157.89	166.18	174.90	184.08	193.75	203.92	214.63	225.89	237.75	250.24	263.37	277.20	291.75	307.07	323.19
Depreciation	Rs Lakh	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	6.36	6.64	6.93	7.24	7.57	7.91	8.27	8.65	9.05	9.47	9.91	10.38	10.87	11.38	11.93	12.50	13.10	13.73	14.40	15.10
Return on Equity	Rs Lakh	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56	61.56
Total Fixed Cost	Rs Lakh	197.29	203.99	211.04	218.45	226.26	234.48	243.13	252.23	261.82	271.90	282.52	293.69	305.44	317.82	330.85	344.55	358.98	374.17	390.15	406.97
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	4.70	4.94	5.20	5.47	5.76	6.06	6.38	6.72	7.07	7.44	7.83	8.24	8.68	9.13	9.61	10.12	10.65	11.21	11.79	12.41
Depreciation	Rs/kWh	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Int. on term loan	Rs/kWh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.24	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.36	0.38	0.40	0.42	0.44	0.46	0.48	0.50	0.53	0.55	0.58
RoE	Rs/kWh	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
Total COG	Rs/kWh	7.58	7.84	8.11	8.39	8.69	9.01	9.34	9.69	10.06	10.44	10.85	11.28	11.73	12.21	12.71	13.23	13.79	14.37	14.99	15.63
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03



Assumption for Small Hydro based Project Parameters			Projects between 5 MW and 25 MW for other states		
S No.	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameter
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption	%	1%
			PLF	%	30%
			Useful Life	Years	40.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	1,027.00
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	1,027.00
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	718.90
			Total Equity Amount	Rs Lacs	308.10
		<u>Debt Component</u>	Loan Amount	Rs Lacs	718.90
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	308.10
			Return on Equity (up to 20 Years)	%	18.18%
			Return on Equity (after 20 Years)	%	23.06%
			Discount Rate (equ. To WACC)	%	9.38%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	0.80%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	31.81
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Small Hydro Projects of Capacity -) : 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
Installed Capacity	MW		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
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		31.81	33.49	35.24	37.09	39.04	41.09	43.25	45.52	47.91	50.42	53.07	55.86	58.79	61.88	65.12	68.54	72.14	75.93	79.91	84.11
Depreciation	Rs Lakh		47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	47.93	8.22	8.22	8.22	8.22	8.22
Interest on term loan	Rs Lakh		74.42	69.28	64.15	59.02	53.89	48.76	43.62	38.49	33.36	28.23	23.09	17.96	12.83	7.70	2.57	-	-	-	-	-
Interest on working Capital	Rs Lakh		4.09	4.09	4.08	4.09	4.09	4.10	4.12	4.14	4.17	4.20	4.24	4.28	4.33	4.39	4.45	3.96	4.11	4.28	4.45	4.63
Return on Equity	Rs Lakh		56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00	56.00
Total Fixed Cost	Rs Lakh		214.25	210.78	207.40	204.12	200.95	197.88	194.92	192.08	189.36	186.77	184.33	182.02	179.87	177.88	176.06	136.71	140.47	144.42	148.58	152.96
Levallised tariff corresponding to Useful life																						
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
O&M expn	Rs/kWh	2.24	1.22	1.29	1.35	1.42	1.50	1.58	1.66	1.75	1.84	1.94	2.04	2.15	2.26	2.38	2.50	2.63	2.77	2.92	3.07	3.23
Depreciation	Rs/kWh	1.48	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	0.32	0.32	0.32	0.32	0.32
Int. on term loan	Rs/kWh	1.37	2.86	2.66	2.46	2.27	2.07	1.87	1.68	1.48	1.28	1.08	0.89	0.69	0.49	0.30	0.10	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.15	0.16	0.16	0.17	0.18
RoE	Rs/kWh	2.23	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
Total COG	Rs/kWh	7.49	8.23	8.10	7.97	7.84	7.72	7.60	7.49	7.38	7.27	7.17	7.08	6.99	6.91	6.83	6.76	5.25	5.40	5.55	5.71	5.88
Discount Factor			1	0.91	0.84	0.76	0.70	0.64	0.58	0.53	0.49	0.45	0.41	0.37	0.34	0.31	0.29	0.26	0.24	0.22	0.20	0.18
Fixed Cost	7.49																					
Levelling Tariff	7.49	Rs/Unit																				



Template for (Small Hydro Projects of Capacity -) : Determination of Tariff Component																					
Units Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Installed Capacity	MW	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
Fixed Cost	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M Expenses	Rs Lakh	88.53	93.17	98.07	103.21	108.63	114.34	120.34	126.66	133.31	140.30	147.67	155.42	163.58	172.17	181.21	190.72	200.74	211.27	222.37	234.04
Depreciation	Rs Lakh	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22	8.22
Interest on term loan	Rs Lakh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh	5.05	5.26	5.47	5.69	5.93	6.18	6.44	6.71	7.00	7.31	7.63	7.96	8.32	8.69	9.09	9.50	9.93	10.39	10.88	11.38
Return on Equity	Rs Lakh	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04	71.04
Total Fixed Cost	Rs Lakh	172.83	177.68	182.79	188.16	193.82	199.77	206.03	212.62	219.56	226.86	234.55	242.64	251.16	260.12	269.55	279.48	289.93	300.92	312.50	324.68
Levallised tariff corresponding to Useful life																					
Per Unit Cost of Generation	Unit	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
O&M expn	Rs/kWh	3.40	3.58	3.77	3.96	4.17	4.39	4.62	4.86	5.12	5.39	5.67	5.97	6.28	6.61	6.96	7.33	7.71	8.12	8.54	8.99
Depreciation	Rs/kWh	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
Int. on term loan	Rs/kWh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.31	0.32	0.33	0.35	0.36	0.38	0.40	0.42	0.44
RoE	Rs/kWh	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73
Total COG	Rs/kWh	6.64	6.82	7.02	7.23	7.44	7.67	7.91	8.17	8.43	8.71	9.01	9.32	9.65	9.99	10.35	10.73	11.14	11.56	12.00	12.47
Discount Factor		0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	Rs/kWh		6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48
Fixed Cost	Unit	Year---->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.82	27.68	28.59	29.52	30.50	31.51	32.56	33.65	34.79	35.97	37.19	38.47	39.79	41.17	42.59	43.85	45.44	47.09	48.80	50.58	52.56	54.48	56.47	58.53	60.68
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.88	196.74	197.80	199.08	200.57	202.30	204.27	206.50	209.00	211.78	214.86	218.25	221.97	226.04	230.46	219.62	228.06	236.93	246.24	256.01	275.12	285.88	297.19	309.06	321.53

Levillised tariff corresponding to Useful life

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	
Per unit Variable Cost	Rs/kWh	8.57	6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.44	0.45	0.47	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.75	0.77	0.80	0.83	0.86	0.89	0.93	0.96
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.98	9.52	9.76	10.00	10.26	10.53	10.81	11.10	11.41	11.73	12.06	12.41	12.78	13.16	13.55	13.97	14.15	14.65	15.18	15.72	16.28	17.00	17.61	18.24	18.90	19.58

Variable Cost (Rs/Unit)	6.42
Levillised Tariff (Fixed) (Rs/Unit)	3.41
Levillised Tariff(Rs/Unit)	9.82

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs./Unit)		8.43																									
Electricity Generation (Levellised) (Rs./Unit)		6.03																									
Levellised benefit (Rs./Unit)		0.14																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		461.02	476.93	493.38	510.40	528.01	546.23	565.07	584.57	604.74	625.60	647.18	669.51	692.61	716.50	741.22	766.79	793.25	820.62	848.93	878.22	908.51	939.86	972.28	1,005.83	1,040.53
Per unit Variable Cost	Rs/kWh		7.30	7.56	7.82	8.09	8.37	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39	14.89	15.40	15.94	16.49
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		29.93	30.91	31.92	32.97	34.07	35.20	36.38	37.60	38.88	40.20	41.57	42.99	44.47	46.01	47.61	49.03	50.80	52.64	54.54	56.52	58.70	60.83	63.04	65.33	67.71
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47
Total Fixed Cost	Rs Lakh		199.00	199.97	201.14	202.53	204.14	205.99	208.09	210.45	213.09	216.01	219.24	222.78	226.65	230.88	235.48	224.80	233.43	242.48	251.98	261.94	281.26	292.24	303.77	315.86	328.56

Levellised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.76	7.30	7.56	7.82	8.09	8.37	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39	14.89	15.40	15.94	16.49
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.63	0.47	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.80	0.83	0.86	0.90	0.93	0.96	1.00	1.04	1.07
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	13.23	10.46	10.72	11.00	11.30	11.60	11.92	12.25	12.60	12.96	13.33	13.73	14.14	14.56	15.01	15.47	15.71	16.27	16.84	17.44	18.06	18.85	19.52	20.22	20.94	21.69

Variable Cost (Rs/Unit)	7.30
Levllised Tariff (Fixed) (Rs/Unit)	3.47
Levellised Tariff(Rs/Unit)	10.78

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depm.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)		8.43																								
Electricity Generation (Levellised) (Rs./Unit)		6.03																								
Levellised benefit (Rs./Unit)		0.14																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	0%
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		471.50	487.76	504.59	522.00	540.01	558.64	577.91	597.85	618.47	639.81	661.88	684.72	708.34	732.78	758.06	784.21	811.27	839.26	868.21	898.17	929.15	961.21	994.37	1,028.68	1,064.17
Per unit Variable Cost	Rs/kWh		7.47	7.73	7.99	8.27	8.56	8.85	9.16	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.43	12.85	13.30	13.76	14.23	14.72	15.23	15.75	16.30	16.86
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		30.52	31.51	32.54	33.62	34.73	35.89	37.09	38.34	39.64	40.99	42.39	43.84	45.35	46.92	48.54	50.00	51.80	53.67	55.62	57.63	59.85	62.02	64.27	66.61	69.03
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		199.58	200.57	201.76	203.17	204.81	206.68	208.81	211.19	213.85	216.80	220.05	223.62	227.53	231.79	236.41	225.77	234.43	243.52	253.05	263.05	282.41	293.43	304.99	317.14	329.88

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.98	7.47	7.73	7.99	8.27	8.56	8.85	9.16	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.43	12.85	13.30	13.76	14.23	14.72	15.23	15.75	16.30	16.86
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.64	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.77	0.79	0.82	0.85	0.88	0.91	0.95	0.98	1.02	1.06	1.09
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	13.47	10.63	10.91	11.19	11.49	11.80	12.13	12.46	12.82	13.19	13.57	13.97	14.39	14.83	15.28	15.76	16.00	16.57	17.16	17.77	18.40	19.20	19.88	20.59	21.32	22.09

Variable Cost (Rs/Unit)	7.47
Levillised Tariff (Fixed) (Rs/Unit)	3.48
Levillised Tariff(Rs/Unit)	10.95

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)		8.43																								
Electricity Generation (Levillised) (Rs./Unit)		6.03																								
Levillised benefit (Rs./Unit)		0.14																								

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		482.17	498.81	516.02	533.82	552.23	571.29	591.00	611.39	632.48	654.30	676.87	700.22	724.38	749.37	775.23	801.97	829.64	858.26	887.87	918.50	950.19	982.97	1,016.89	1,051.97	1,088.26
Per unit Variable Cost	Rs/kWh		7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.72	11.09	11.48	11.87	12.28	12.71	13.14	13.60	14.07	14.55	15.05	15.57	16.11	16.67	17.24
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		31.11	32.13	33.18	34.28	35.41	36.60	37.82	39.10	40.42	41.79	43.22	44.70	46.24	47.84	49.50	50.99	52.82	54.73	56.71	58.76	61.02	63.23	65.52	67.90	70.37
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47
Total Fixed Cost	Rs Lakh		200.18	201.18	202.40	203.83	205.49	207.39	209.53	211.94	214.63	217.61	220.89	224.49	228.42	232.71	237.37	242.76	245.45	244.57	254.14	264.19	283.58	294.64	306.25	318.43	331.22

Levillised tariff corresponding to Useful life

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	
Per unit Variable Cost	Rs/kWh	10.21	7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.72	11.09	11.48	11.87	12.28	12.71	13.14	13.60	14.07	14.55	15.05	15.57	16.11	16.67	17.24
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.65	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.78	0.81	0.84	0.87	0.90	0.93	0.97	1.00	1.04	1.08	1.11
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	13.70	10.81	11.09	11.38	11.69	12.01	12.34	12.68	13.04	13.42	13.81	14.22	14.65	15.10	15.56	16.04	16.30	16.88	17.47	18.09	18.74	19.55	20.24	20.96	21.71	22.49

Variable Cost (Rs/Unit)	7.64
Levllised Tariff (Fixed) (Rs/Unit)	3.50
Levillised Tariff(Rs/Unit)	11.14

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.10
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.11

Tax Benefit Levillised (Rs./Unit)	8.43
Electricity Generation (Levillised) (Rs./Unit)	6.03
Levillised benefit (Rs./Unit)	0.14



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		402.45	416.34	430.70	445.56	460.93	476.84	493.29	510.30	527.91	546.12	564.96	584.46	604.62	625.48	647.06	669.38	692.47	716.36	741.08	766.65	793.10	820.46	848.76	878.05	908.34
Per unit Variable Cost	Rs/kWh		6.38	6.60	6.82	7.06	7.30	7.55	7.82	8.09	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.67	27.54	28.43	29.37	30.33	31.34	32.39	33.47	34.60	35.77	36.99	38.26	39.58	40.95	42.37	43.61	45.19	46.84	48.54	50.31	52.28	54.19	56.17	58.22	60.36
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47
Total Fixed Cost	Rs Lakh		195.74	196.60	197.65	198.92	200.41	202.13	204.10	206.32	208.81	211.59	214.66	218.05	221.76	225.82	230.24	219.38	227.82	236.68	245.98	255.74	274.84	285.60	296.89	308.75	321.21

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.52	6.38	6.60	6.82	7.06	7.30	7.55	7.82	8.09	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.96
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.92	9.48	9.71	9.96	10.21	10.48	10.76	11.05	11.35	11.67	12.01	12.35	12.71	13.09	13.49	13.90	14.08	14.58	15.10	15.64	16.20	16.92	17.52	18.15	18.80	19.48

Variable Cost (Rs/Unit)	6.38
Levillised Tariff (Fixed) (Rs/Unit)	3.40
Levillised Tariff(Rs/Unit)	9.78

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs /Unit)	8.43																										
Electricity Generation (Levellised) (Rs./Unit)	6.03																										
Levellised benefit (Rs./Unit)	0.14																										



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		398.39	412.13	426.35	441.06	456.27	472.02	488.30	505.15	522.57	540.60	559.25	578.55	598.51	619.16	640.52	662.62	685.48	709.13	733.59	758.90	785.08	812.17	840.19	869.17	899.16
Per unit Variable Cost	Rs/kWh		6.31	6.53	6.76	6.99	7.23	7.48	7.74	8.00	8.28	8.57	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.24	11.62	12.02	12.44	12.87	13.31	13.77	14.25
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.45	27.30	28.19	29.11	30.07	31.07	32.11	33.19	34.30	35.47	36.68	37.93	39.24	40.59	42.00	43.23	44.80	46.43	48.12	49.88	51.84	53.73	55.69	57.73	59.85
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.51	196.36	197.41	198.67	200.15	201.86	203.82	206.03	208.52	211.28	214.34	217.72	221.42	225.47	229.87	219.01	227.43	236.28	245.56	255.31	274.39	285.13	296.42	308.26	320.70
Levillised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	8.43	6.31	6.53	6.76	6.99	7.23	7.48	7.74	8.00	8.28	8.57	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.24	11.62	12.02	12.44	12.87	13.31	13.77	14.25
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.67	0.68	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.91	0.95
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.83	9.41	9.64	9.88	10.14	10.40	10.68	10.97	11.27	11.58	11.91	12.26	12.62	12.99	13.38	13.79	13.97	14.46	14.98	15.51	16.07	16.79	17.39	18.01	18.66	19.33
Variable Cost (Rs/Unit)		6.31																									
Levillised Tariff (Fixed) (Rs/Unit)		3.40																									
Levillised Tariff(Rs/Unit)		9.71																									

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Deprn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs./Unit)	8.43																										
Electricity Generation (Levellised) (Rs./Unit)	6.03																										
Levellised benefit (Rs./Unit)	0.14																										



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	Rs/kWh		6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.82	27.68	28.59	29.52	30.50	31.51	32.56	33.65	34.79	35.97	37.19	38.47	39.79	41.17	42.59	43.85	45.44	47.09	48.80	50.58	52.56	54.48	56.47	58.53	60.68
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.88	196.74	197.80	199.08	200.57	202.30	204.27	206.50	209.00	211.78	214.86	218.25	221.97	226.04	230.46	219.62	228.06	236.93	246.24	256.01	275.12	285.88	297.19	309.06	321.53

Levellised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.57	6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.44	0.45	0.47	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.75	0.77	0.80	0.83	0.86	0.89	0.93	0.96
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.98	9.52	9.76	10.00	10.26	10.53	10.81	11.10	11.41	11.73	12.06	12.41	12.78	13.16	13.55	13.97	14.15	14.65	15.18	15.72	16.28	17.00	17.61	18.24	18.90	19.58

Variable Cost (Rs/Unit)	6.42
Levellised Tariff (Fixed) (Rs/Unit)	3.41
Levellised Tariff(Rs/Unit)	9.82

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	

Tax Benefit Levellised (Rs./Unit)	8.43
Electricity Generation (Levellised) (Rs./kWh)	6.03
Levellised benefit (Rs./Unit)	0.14



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			-
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			-
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		412.11	426.33	441.04	456.26	472.00	488.28	505.13	522.55	540.58	559.23	578.52	598.48	619.13	640.49	662.59	685.45	709.10	733.56	758.87	785.05	812.13	840.15	869.14	899.12	930.14
Per unit Variable Cost	Rs/kWh		6.53	6.75	6.99	7.23	7.48	7.74	8.00	8.28	8.56	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.23	11.62	12.02	12.44	12.87	13.31	13.77	14.25	14.74
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		27.21	28.09	29.01	29.96	30.95	31.98	33.04	34.15	35.31	36.50	37.75	39.04	40.38	41.78	43.23	44.50	46.12	47.79	49.53	51.34	53.34	55.28	57.30	59.40	61.57
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		196.28	197.15	198.23	199.51	201.02	202.77	204.76	207.00	209.52	212.32	215.41	218.83	222.57	226.65	231.10	220.28	228.75	237.63	246.97	256.76	275.90	286.69	298.03	309.93	322.42

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.72	6.53	6.75	6.99	7.23	7.48	7.74	8.00	8.28	8.56	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.23	11.62	12.02	12.44	12.87	13.31	13.77	14.25	14.74
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.45	0.46	0.47	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.78	0.81	0.85	0.88	0.91	0.94	0.98
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	12.14	9.64	9.88	10.13	10.39	10.66	10.95	11.25	11.56	11.88	12.22	12.58	12.95	13.34	13.74	14.16	14.35	14.86	15.39	15.94	16.51	17.24	17.85	18.49	19.16	19.85

Variable Cost (Rs/Unit)	6.53
Levillised Tariff (Fixed) (Rs/Unit)	3.41
Levillised Tariff(Rs/Unit)	9.94

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs./Unit)		8.43																									
Electricity Generation (Levellised) (Rs./Unit)		6.03																									
Levellised benefit (Rs./Unit)		0.14																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		433.16	448.11	463.56	479.56	496.10	513.22	530.92	549.24	568.19	587.79	608.07	629.05	650.75	673.20	696.43	720.46	745.31	771.02	797.62	825.14	853.61	883.06	913.53	945.04	977.65
Per unit Variable Cost	Rs/kWh		6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47	14.97	15.49
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		28.38	29.30	30.26	31.26	32.29	33.36	34.48	35.64	36.84	38.09	39.39	40.74	42.14	43.60	45.11	46.45	48.13	49.88	51.69	53.57	55.65	57.67	59.77	61.95	64.22
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		197.45	198.36	199.48	200.81	202.37	204.15	206.19	208.49	211.05	213.91	217.06	220.53	224.33	228.47	232.98	222.23	230.76	239.72	249.12	258.99	278.20	289.08	300.50	312.48	325.07

Levelling tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.17	6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47	14.97	15.49
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.60	0.45	0.46	0.48	0.50	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.91	0.95	0.98	1.02
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	12.61	9.99	10.24	10.51	10.78	11.07	11.37	11.68	12.01	12.35	12.70	13.07	13.46	13.86	14.29	14.73	14.94	15.46	16.01	16.58	17.18	17.93	18.57	19.24	19.92	20.64

Variable Cost (Rs/Unit)	6.86
Levelling Tariff (Fixed) (Rs/Unit)	3.44
Levelling Tariff (Rs/Unit)	10.30

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)		8.43																								
Electricity Generation (Levellised) (Rs./Unit)		6.03																								
Levellised benefit (Rs./Unit)		0.14																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	Rs/kWh		6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.94	27.80	28.70	29.63	30.60	31.61	32.66	33.75	34.88	36.06	37.28	38.55	39.87	41.24	42.67	43.90	45.49	47.14	48.85	50.63	52.62	54.54	56.53	58.59	60.74
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		203.99	204.62	205.44	206.47	207.73	209.22	210.95	212.94	215.20	217.75	220.59	223.74	227.22	231.05	235.24	223.00	231.45	240.31	249.62	259.39	279.15	289.92	301.23	313.10	325.56
Levellers tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	8.77	6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.58	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.58	0.60	0.62	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.98
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.35	9.87	10.10	10.35	10.61	10.88	11.17	11.46	11.77	12.10	12.43	12.79	13.16	13.54	13.94	14.36	14.53	15.04	15.58	16.13	16.70	17.46	18.08	18.72	19.39	20.09
Variable Cost (Rs/Unit)		6.56																									
Levellers Tariff (Fixed) (Rs/Unit)		3.58																									
Levellers Tariff(Rs/Unit)		10.15																									

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.05																									
Electricity Generation (Levellers) (Rs./Unit)	5.89																									
Levellers benefit (Rs./Unit)	0.15																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		461.02	476.93	493.38	510.40	528.01	546.23	565.07	584.57	604.74	625.60	647.18	669.51	692.61	716.50	741.22	766.79	793.25	820.62	848.93	878.22	908.51	939.86	972.28	1,005.83	1,040.53
Per unit Variable Cost	Rs/kWh		7.47	7.73	7.99	8.27	8.56	8.85	9.16	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.43	12.85	13.30	13.76	14.23	14.72	15.23	15.75	16.30	16.86

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		30.05	31.03	32.04	33.08	34.17	35.30	36.48	37.70	38.97	40.29	41.65	43.08	44.55	46.09	47.68	49.08	50.85	52.69	54.59	56.57	58.76	60.89	63.10	65.40	67.77
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		207.11	207.84	208.78	209.92	211.30	212.91	214.77	216.89	219.29	221.98	224.96	228.27	231.91	235.89	240.25	228.19	236.81	245.86	255.36	265.33	285.29	296.27	307.80	319.90	332.60

Levilled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.98	7.47	7.73	7.99	8.27	8.56	8.85	9.16	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.43	12.85	13.30	13.76	14.23	14.72	15.23	15.75	16.30	16.86
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.65	0.49	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.70	0.72	0.75	0.77	0.80	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.06	1.10
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	13.63	10.83	11.10	11.38	11.67	11.98	12.30	12.64	12.99	13.35	13.73	14.13	14.55	14.98	15.43	15.90	16.12	16.69	17.28	17.89	18.53	19.34	20.03	20.74	21.48	22.25

Variable Cost (Rs/Unit)	7.47
Levilled Tariff (Fixed) (Rs/Unit)	3.65
Levilled Tariff(Rs/Unit)	11.12

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levilled (Rs./Unit)	9.05
Electricity Generation (Levilled) (Rs./Unit)	5.89
Levilled benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		471.50	487.76	504.59	522.00	540.01	558.64	577.91	597.85	618.47	639.81	661.88	684.72	708.34	732.78	758.06	784.21	811.27	839.26	868.21	898.17	929.15	961.21	994.37	1,028.68	1,064.17
Per unit Variable Cost	Rs/kWh		7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.73	11.10	11.48	11.87	12.28	12.71	13.15	13.60	14.07	14.55	15.06	15.58	16.11	16.67	17.24

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.70	31.70	31.70	31.70	31.70	31.70	31.70	31.70	31.70
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		30.64	31.63	32.66	33.73	34.84	35.99	37.19	38.44	39.73	41.08	42.47	43.92	45.43	46.99	48.61	50.05	51.85	53.72	55.67	57.68	59.91	62.08	64.33	66.67	69.09
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		207.69	208.44	209.40	210.57	211.97	213.60	215.49	217.63	220.06	222.77	225.78	229.11	232.78	236.80	241.19	229.16	237.81	246.90	256.43	266.44	286.44	297.46	309.03	321.17	333.91

Levelling tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	10.21	7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.73	11.10	11.48	11.87	12.28	12.71	13.15	13.60	14.07	14.55	15.06	15.58	16.11	16.67	17.24
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.66	0.50	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.74	0.76	0.79	0.81	0.84	0.87	0.90	0.93	0.97	1.01	1.04	1.08	1.12
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	13.87	11.01	11.28	11.57	11.87	12.19	12.51	12.86	13.21	13.59	13.98	14.38	14.81	15.25	15.71	16.19	16.42	17.00	17.60	18.22	18.87	19.70	20.40	21.12	21.87	22.65

Variable Cost (Rs/Unit)	7.64
Levelling Tariff (Fixed) (Rs/Unit)	3.66
Levelling Tariff (Rs/Unit)	11.30

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levellised (Rs./Unit)	9.05
Electricity Generation (Levellised) (Rs./Unit)	5.89
Levellised benefit (Rs./Unit)	0.15

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		482.17	498.81	516.02	533.82	552.23	571.29	591.00	611.39	632.48	654.30	676.87	700.22	724.38	749.37	775.23	801.97	829.64	858.26	887.87	918.50	950.19	982.97	1,016.89	1,051.97	1,088.26
Per unit Variable Cost	Rs/kWh		7.81	8.08	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.60	10.97	11.35	11.74	12.14	12.56	13.00	13.44	13.91	14.39	14.88	15.40	15.93	16.48	17.05	17.63
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		31.23	32.24	33.29	34.39	35.52	36.70	37.92	39.19	40.51	41.88	43.31	44.78	46.32	47.91	49.57	51.04	52.88	54.78	56.76	58.81	61.08	63.29	65.58	67.96	70.43
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		208.29	209.06	210.03	211.23	212.65	214.31	216.21	218.39	220.83	223.57	226.61	229.98	233.67	237.72	242.14	230.14	238.84	247.96	257.53	267.57	287.61	298.67	310.28	322.47	335.25
Levellers tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	10.44	7.81	8.08	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.60	10.97	11.35	11.74	12.14	12.56	13.00	13.44	13.91	14.39	14.88	15.40	15.93	16.48	17.05	17.63
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.67	0.51	0.52	0.54	0.56	0.58	0.59	0.61	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.80	0.83	0.86	0.89	0.92	0.95	0.99	1.03	1.06	1.10	1.14
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	14.12	11.19	11.47	11.77	12.07	12.39	12.73	13.08	13.45	13.83	14.23	14.64	15.07	15.52	16.00	16.49	16.72	17.31	17.93	18.56	19.22	20.06	20.77	21.51	22.27	23.07
Variable Cost (Rs/Unit)		7.81																									
Levellers Tariff (Fixed) (Rs/Unit)		3.68																									
Levellers Tariff(Rs/Unit)		11.49																									

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs./Unit)	9.05																										
Electricity Generation (Levellised) (Rs./Unit)	5.89																										
Levellised benefit (Rs./Unit)	0.15																										

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		402.45	416.34	430.70	445.56	460.93	476.84	493.29	510.30	527.91	546.12	564.96	584.46	604.62	625.48	647.06	669.38	692.47	716.36	741.08	766.65	793.10	820.46	848.76	878.05	908.34
Per unit Variable Cost	Rs/kWh		6.52	6.75	6.98	7.22	7.47	7.73	7.99	8.27	8.55	8.85	9.15	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.42	12.85	13.29	13.75	14.23	14.72

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.80	27.65	28.55	29.48	30.44	31.44	32.49	33.57	34.69	35.86	37.08	38.34	39.66	41.02	42.44	43.66	45.24	46.89	48.59	50.36	52.34	54.25	56.23	58.29	60.42
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		203.85	204.47	205.29	206.32	207.57	209.05	210.78	212.76	215.02	217.55	220.39	223.54	227.01	230.83	235.01	222.77	231.20	240.06	249.36	259.12	278.87	289.63	300.93	312.79	325.24

Levelised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Per unit Variable Cost	Rs/kWh	8.71	6.52	6.75	6.98	7.22	7.47	7.73	7.99	8.27	8.55	8.85	9.15	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.42	12.85	13.29	13.75	14.23	14.72
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.69	0.71	0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.94	0.98
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.30	9.82	10.06	10.31	10.56	10.83	11.11	11.41	11.72	12.04	12.37	12.73	13.09	13.48	13.88	14.29	14.46	14.97	15.50	16.05	16.62	17.37	17.99	18.63	19.30	19.99

Variable Cost (Rs/Unit)	6.52
Levelised Tariff (Fixed) (Rs/Unit)	3.58
Levelised Tariff(Rs/Unit)	10.10

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAIT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levelised (Rs/Unit)	9.05
Electricity Generation (Levelised) (Rs / MU)	5.89
Levelised benefit (Rs/Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		398.39	412.13	426.35	441.06	456.27	472.02	488.30	505.15	522.57	540.60	559.25	578.55	598.51	619.16	640.52	662.62	685.48	709.13	733.59	758.90	785.08	812.17	840.19	869.17	899.16
Per unit Variable Cost	Rs/kWh		6.46	6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.57	27.42	28.31	29.23	30.18	31.18	32.21	33.28	34.40	35.56	36.76	38.01	39.32	40.67	42.07	43.28	44.85	46.48	48.18	49.93	51.90	53.79	55.75	57.79	59.91
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		203.63	204.24	205.05	206.07	207.31	208.78	210.50	212.48	214.72	217.25	220.07	223.21	226.67	230.48	234.65	222.39	230.81	239.66	248.94	258.69	278.43	289.17	300.45	312.30	324.73

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.63	6.46	6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.44	0.46	0.47	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.20	9.76	9.99	10.23	10.49	10.75	11.03	11.32	11.63	11.95	12.28	12.63	12.99	13.37	13.77	14.18	14.34	14.85	15.37	15.92	16.49	17.23	17.85	18.48	19.14	19.83

Variable Cost (Rs/Unit)	6.46
Levelised Tariff (Fixed) (Rs/Unit)	3.58
Levelised Tariff(Rs/Unit)	10.03

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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%	0.00%
Book Depreciation	Rs Lakh	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13

Tax Benefit Levelised (Rs./Unit)	9.05
Electricity Generation (Levelised) (Rs./Unit)	5.89
Levelised benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	RskWh		6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.94	27.80	28.70	29.63	30.60	31.61	32.66	33.75	34.88	36.06	37.28	38.55	39.87	41.24	42.67	43.90	45.49	47.14	48.85	50.63	52.62	54.54	56.53	58.59	60.74
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		203.99	204.62	205.44	206.47	207.73	209.22	210.95	212.94	215.20	217.75	220.59	223.74	227.22	231.05	235.24	223.00	231.45	240.31	249.62	259.39	279.15	289.92	301.23	313.10	325.56

Levelled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.77	6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.58	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.58	0.60	0.62	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.98
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.35	9.87	10.10	10.35	10.61	10.88	11.17	11.46	11.77	12.10	12.43	12.79	13.16	13.54	13.94	14.36	14.53	15.04	15.58	16.13	16.70	17.46	18.08	18.72	19.39	20.09

Variable Cost (Rs/Unit)	6.56
Levllised Tariff (Fixed) (Rs/Unit)	3.58
Levelled Tariff(Rs/Unit)	10.15

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelled (Rs/Unit)		9.05																								
Electricity Generation (Levelled) (Rs/kWh)		5.89																								
Levelled benefit (Rs/Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		412.11	426.33	441.04	456.26	472.00	488.28	505.13	522.55	540.58	559.23	578.52	598.48	619.13	640.49	662.59	685.45	709.10	733.56	758.87	785.05	812.13	840.15	869.14	899.12	930.14
Per unit Variable Cost	Rs/kWh		6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57	15.07
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		27.33	28.21	29.12	30.07	31.06	32.08	33.14	34.25	35.40	36.59	37.83	39.12	40.46	41.86	43.30	44.55	46.17	47.84	49.58	51.39	53.40	55.34	57.36	59.46	61.63
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		204.39	205.03	205.86	206.91	208.18	209.69	211.44	213.44	215.72	218.28	221.14	224.32	227.82	231.66	235.88	223.66	232.13	241.02	250.35	260.14	279.93	290.73	302.06	313.96	326.46

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.92	6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57	15.07
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.59	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.66	0.68	0.70	0.72	0.75	0.78	0.80	0.83	0.87	0.90	0.93	0.96	1.00
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.52	9.99	10.23	10.48	10.75	11.02	11.31	11.61	11.93	12.26	12.60	12.96	13.33	13.72	14.13	14.56	14.73	15.25	15.79	16.35	16.94	17.70	18.32	18.98	19.66	20.36

Variable Cost (Rs/Unit)	6.68
Levillised Tariff (Fixed) (Rs/Unit)	3.59
Levillised Tariff(Rs/Unit)	10.27

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs./Unit)		9.05																									
Electricity Generation (Levellised) (Rs./Unit)		5.89																									
Levellised benefit (Rs./Unit)		0.15																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		433.16	448.11	463.56	479.56	496.10	513.22	530.92	549.24	568.19	587.79	608.07	629.05	650.75	673.20	696.43	720.46	745.31	771.02	797.62	825.14	853.61	883.06	913.53	945.04	977.65
Per unit Variable Cost	Rs/kWh		7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80	15.31	15.84

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		28.50	29.42	30.38	31.37	32.40	33.47	34.58	35.73	36.94	38.18	39.48	40.82	42.22	43.68	45.19	46.50	48.18	49.93	51.74	53.62	55.71	57.73	59.83	62.01	64.28
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		205.56	206.24	207.12	208.21	209.52	211.07	212.87	214.93	217.26	219.87	222.79	226.02	229.58	233.49	237.76	225.61	234.14	243.10	252.50	262.37	282.24	293.11	304.53	316.52	329.10

Levelling tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.38	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80	15.31	15.84
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.61	0.46	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97	1.00	1.04
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	13.00	10.35	10.60	10.87	11.14	11.43	11.74	12.05	12.38	12.73	13.09	13.46	13.86	14.26	14.69	15.14	15.33	15.87	16.43	17.02	17.62	18.41	19.06	19.74	20.44	21.17

Variable Cost (Rs/Unit)	7.02
Levllised Tariff (Fixed) (Rs/Unit)	3.62
Levelling Tariff(Rs/Unit)	10.64

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																													
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13	0.13	

Tax Benefit Levellised (Rs./Unit)	9.05
Electricity Generation (Levellised) (Rs./Unit)	5.89
Levelling benefit (Rs./Unit)	0.15

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	0%
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	Rs/kWh		6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.97	27.83	28.73	29.66	30.63	31.64	32.68	33.77	34.90	36.08	37.30	38.57	39.89	41.26	42.68	43.91	45.50	47.15	48.87	50.64	52.64	54.55	56.54	58.61	60.75
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	45.00	45.00	45.00	45.00	45.00
Total Fixed Cost	Rs Lakh		206.07	206.63	207.39	208.36	209.56	210.98	212.66	214.59	216.79	219.27	222.05	225.14	228.56	232.33	236.46	223.87	232.31	241.18	250.48	260.25	280.18	290.95	302.26	314.13	326.59

Levelled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.57	6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.75	0.77	0.80	0.83	0.86	0.90	0.93	0.96
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	12.10	9.68	9.91	10.15	10.41	10.67	10.95	11.23	11.54	11.85	12.18	12.53	12.89	13.26	13.65	14.06	14.22	14.72	15.24	15.78	16.35	17.08	17.69	18.32	18.98	19.66

Variable Cost (Rs/Unit)	6.42
Levllised Tariff (Fixed) (Rs/Unit)	3.53
Levelled Tariff(Rs/Unit)	9.95

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																												
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31		
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12		
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13		

Tax Benefit Levelled (Rs./Unit)	9.21
Electricity Generation (Levelled) (Rs./MU)	6.03
Levelled benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		461.02	476.93	493.38	510.40	528.01	546.23	565.07	584.57	604.74	625.60	647.18	669.51	692.61	716.50	741.22	766.79	793.25	820.62	848.93	878.22	908.51	939.86	972.28	1,005.83	1,040.53
Per unit Variable Cost	Rs/kWh		7.30	7.56	7.82	8.09	8.37	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39	14.89	15.40	15.94	16.49
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		30.09	31.06	32.06	33.11	34.20	35.33	36.51	37.73	38.99	40.31	41.68	43.10	44.57	46.10	47.70	49.09	50.86	52.70	54.61	56.58	58.78	60.91	63.12	65.41	67.79
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		209.18	209.85	210.72	211.81	213.13	214.68	216.48	218.54	220.88	223.50	226.43	229.67	233.25	237.17	241.47	229.05	237.67	246.72	256.22	266.19	286.32	297.30	308.83	320.93	333.63

Levilled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.76	7.30	7.56	7.82	8.09	8.37	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39	14.89	15.40	15.94	16.49
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.63	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.78	0.81	0.83	0.87	0.90	0.93	0.97	1.00	1.04	1.07
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	13.36	10.62	10.88	11.16	11.44	11.74	12.06	12.38	12.72	13.08	13.45	13.84	14.25	14.67	15.11	15.57	15.78	16.33	16.91	17.51	18.13	18.93	19.60	20.30	21.02	21.77

Variable Cost (Rs/Unit)	7.30
Levilled Tariff (Fixed) (Rs/Unit)	3.60
Levilled Tariff (Rs/Unit)	10.90

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs./Unit)	9.21																										
Electricity Generation (Levillised) (Rs./Unit)	6.03																										
Levillised benefit (Rs./Unit)	0.15																										



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		471.50	487.76	504.59	522.00	540.01	558.64	577.91	597.85	618.47	639.81	661.88	684.72	708.34	732.78	758.06	784.21	811.27	839.26	868.21	898.17	929.15	961.21	994.37	1,028.68	1,064.17
Per unit Variable Cost	Rs/kWh		7.47	7.73																							

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		30.67	31.66	32.69	33.76	34.87	36.02	37.22	38.46	39.76	41.10	42.49	43.94	45.45	47.01	48.63	50.06	51.87	53.74	55.68	57.69	59.93	62.10	64.35	66.68	69.11
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		209.77	210.45	211.35	212.46	213.79	215.37	217.19	219.28	221.64	224.29	227.24	230.52	234.12	238.08	242.41	230.02	238.68	247.76	257.30	267.30	287.47	298.49	310.06	322.20	334.94

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.98	7.47	7.73	7.99	8.27	8.56	8.85	9.16	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.43	12.85	13.30	13.76	14.23	14.72	15.23	15.75	16.30	16.86
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.64	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.70	0.72	0.74	0.77	0.79	0.82	0.85	0.88	0.91	0.95	0.98	1.02	1.06	1.09
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	13.59	10.79	11.06	11.34	11.64	11.94	12.26	12.60	12.95	13.31	13.69	14.09	14.50	14.93	15.38	15.85	16.07	16.64	17.22	17.83	18.47	19.28	19.96	20.67	21.40	22.17

Variable Cost (Rs/Unit)	7.47
Levillised Tariff (Fixed) (Rs/Unit)	3.61
Levillised Tariff(Rs/Unit)	11.08

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levillised (Rs./Unit)	9.21
Electricity Generation (Levillised) (Rs./kWh)	6.03
Levillised benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		482.17	498.81	516.02	533.82	552.23	571.29	591.00	611.39	632.48	654.30	676.87	700.22	724.38	749.37	775.23	801.97	829.64	858.26	887.87	918.50	950.19	982.97	1,016.89	1,051.97	1,088.26
Per unit Variable Cost	Rs/kWh		7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.72	11.09	11.48	11.87	12.28	12.71	13.14	13.60	14.07	14.55	15.05	15.57	16.11	16.67	17.24
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	13.94	13.94	13.94	13.94	13.94	13.94	13.94	13.94	13.94	13.94
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		31.26	32.27	33.32	34.41	35.55	36.73	37.95	39.22	40.54	41.91	43.33	44.81	46.34	47.93	49.59	51.05	52.89	54.79	56.77	58.82	61.10	63.31	65.60	67.98	70.45
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	45.00	45.00	45.00	45.00	45.00
Total Fixed Cost	Rs Lakh		210.36	211.07	211.98	213.12	214.47	216.07	217.92	220.03	222.42	225.10	228.08	231.38	235.01	239.00	243.36	231.01	239.70	248.82	258.39	268.43	288.64	299.70	311.31	323.50	336.29

Levillised tariff corresponding to Useful life

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	
Per unit Variable Cost	Rs/kWh	10.21	7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.72	11.09	11.48	11.87	12.28	12.71	13.14	13.60	14.07	14.55	15.05	15.57	16.11	16.67	17.24
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.66	0.50	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.64	0.66	0.69	0.71	0.73	0.76	0.79	0.81	0.84	0.87	0.90	0.93	0.97	1.00	1.04	1.08	1.12
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	13.83	10.97	11.25	11.53	11.83	12.15	12.47	12.82	13.17	13.55	13.93	14.34	14.76	15.20	15.66	16.14	16.37	16.94	17.54	18.16	18.81	19.63	20.32	21.04	21.79	22.57

Variable Cost (Rs/Unit)	7.64
Levillised Tariff (Fixed) (Rs/Unit)	3.62
Levillised Tariff(Rs/Unit)	11.26

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
WAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13

Tax Benefit Levellised (Rs./Unit)	9.21
Electricity Generation (Levellised) (Rs./MU)	6.03
Levellised benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		402.45	416.34	430.70	445.56	460.93	476.84	493.29	510.30	527.91	546.12	564.96	584.46	604.62	625.48	647.06	669.38	692.47	716.36	741.08	766.65	793.10	820.46	848.76	878.05	908.34
Per unit Variable Cost	Rs/kWh		6.38	6.60	6.82	7.06	7.30	7.55	7.82	8.09	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.83	27.68	28.58	29.50	30.47	31.47	32.51	33.59	34.72	35.89	37.10	38.36	39.68	41.04	42.46	43.67	45.26	46.90	48.60	50.38	52.36	54.26	56.24	58.30	60.44
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		205.92	206.48	207.24	208.21	209.39	210.82	212.48	214.41	216.60	219.08	221.85	224.94	228.35	232.11	236.23	223.63	232.07	240.92	250.22	259.98	279.90	290.66	301.96	313.82	326.27

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.52	6.38	6.60	6.82	7.06	7.30	7.55	7.82	8.09	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.61	10.97	11.35	11.74	12.15	12.57	13.00	13.45	13.91	14.39
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.43	0.44	0.45	0.47	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.96
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	12.05	9.64	9.87	10.11	10.36	10.62	10.90	11.18	11.48	11.80	12.12	12.47	12.82	13.20	13.59	13.99	14.15	14.65	15.17	15.71	16.27	17.00	17.60	18.23	18.88	19.56

Variable Cost (Rs/Unit)	6.38
Levelised Tariff (Fixed) (Rs/Unit)	3.53
Levelised Tariff(Rs/Unit)	9.90

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelised (Rs./Unit)		9.21																								
Electricity Generation (Levelised) (Rs./MU)		6.03																								
Levelised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		398.39	412.13	426.35	441.06	456.27	472.02	488.30	505.15	522.57	540.60	559.25	578.55	598.51	619.16	640.52	662.62	685.48	709.13	733.59	758.90	785.08	812.17	840.19	869.17	899.16
Per unit Variable Cost	Rs/kWh		6.31	6.53	6.76	6.99	7.23	7.48	7.74	8.00	8.28	8.57	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.24	11.62	12.02	12.44	12.87	13.31	13.77	14.25
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	13.94	13.94	13.94	13.94	13.94	13.94	13.94	13.94	13.94	13.94
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.60	27.45	28.33	29.25	30.21	31.20	32.23	33.31	34.42	35.58	36.78	38.04	39.34	40.69	42.09	43.30	44.87	46.50	48.19	49.94	51.91	53.80	55.77	57.81	59.92
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	45.00	45.00	45.00	45.00	45.00	45.00
Total Fixed Cost	Rs Lakh		205.70	206.25	206.99	207.95	209.14	210.55	212.21	214.12	216.30	218.77	221.53	224.61	228.01	231.76	235.87	223.25	231.68	240.52	249.80	259.55	279.46	290.20	301.48	313.33	325.76

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.43	6.31	6.53	6.76	6.99	7.23	7.48	7.74	8.00	8.28	8.57	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.24	11.62	12.02	12.44	12.87	13.31	13.77	14.25
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	11.96	9.57	9.80	10.03	10.28	10.54	10.81	11.10	11.40	11.71	12.03	12.37	12.73	13.10	13.48	13.89	14.04	14.53	15.05	15.58	16.14	16.87	17.47	18.09	18.74	19.41

Variable Cost (Rs/Unit)	6.31
Levillised Tariff (Fixed) (Rs/Unit)	3.52
Levillised Tariff(Rs/Unit)	9.83

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.21																									
Electricity Generation (Levellised) (Rs./Lakh)	6.03																									
Levellised benefit (Rs./Unit)	0.15																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	Rs/kWh		6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.97	27.83	28.73	29.66	30.63	31.64	32.68	33.77	34.90	36.08	37.30	38.57	39.89	41.26	42.68	43.91	45.50	47.15	48.87	50.64	52.64	54.55	56.54	58.61	60.75
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		206.07	206.63	207.39	208.36	209.56	210.98	212.66	214.59	216.79	219.27	222.05	225.14	228.56	232.33	236.46	223.87	232.31	241.18	250.48	260.25	280.18	290.95	302.26	314.13	326.59

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.57	6.42	6.64	6.87	7.10	7.35	7.60	7.87	8.14	8.42	8.71	9.01	9.32	9.64	9.97	10.32	10.67	11.04	11.42	11.82	12.22	12.65	13.08	13.53	14.00	14.48
O&Mexpn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.75	0.77	0.80	0.83	0.86	0.90	0.93	0.96
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	12.10	9.68	9.91	10.15	10.41	10.67	10.95	11.23	11.54	11.85	12.18	12.53	12.89	13.26	13.65	14.06	14.22	14.72	15.24	15.78	16.35	17.08	17.69	18.32	18.98	19.66

Variable Cost (Rs/Unit)	6.42
Levillised Tariff (Fixed) (Rs/Unit)	3.53
Levillised Tariff(Rs/Unit)	9.95

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levillised (Rs./Unit)		9.21																								
Electricity Generation (Levillised) (Rs./Unit)		6.03																								
Levillised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		412.11	426.33	441.04	456.26	472.00	488.28	505.13	522.55	540.58	559.23	578.52	598.48	619.13	640.49	662.59	685.45	709.10	733.56	758.87	785.05	812.13	840.15	869.14	899.12	930.14
Per unit Variable Cost	Rs/kWh		6.53	6.75	6.99	7.23	7.48	7.74	8.00	8.28	8.56	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.23	11.62	12.02	12.44	12.87	13.31	13.77	14.25	14.74

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		27.36	28.24	29.15	30.10	31.08	32.11	33.17	34.27	35.42	36.62	37.86	39.14	40.48	41.87	43.32	44.57	46.18	47.86	49.59	51.40	53.42	55.36	57.38	59.47	61.65
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		206.46	207.04	207.81	208.80	210.01	211.45	213.14	215.09	217.31	219.81	222.61	225.72	229.16	232.94	237.09	242.52	243.99	241.88	251.21	261.01	280.96	291.76	303.09	314.99	327.49

Levelling tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Per unit Variable Cost	Rs/kWh	8.72	6.53	6.75	6.99	7.23	7.48	7.74	8.00	8.28	8.56	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.23	11.62	12.02	12.44	12.87	13.31	13.77	14.25	14.74
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.69	0.71	0.73	0.76	0.79	0.81	0.85	0.88	0.91	0.94	0.98
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	12.26	9.80	10.04	10.28	10.54	10.81	11.09	11.38	11.69	12.01	12.34	12.69	13.06	13.44	13.84	14.25	14.42	14.93	15.45	16.00	16.57	17.32	17.93	18.57	19.24	19.93

Variable Cost (Rs/Unit)	6.53
Levelling Tariff (Fixed) (Rs/Unit)	3.54
Levelling Tariff(Rs/Unit)	10.07

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13

Tax Benefit Levellised (Rs/Unit)	9.21
Electricity Generation (Levelling) (Rs./kWh)	6.03
Levelling benefit (Rs/Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		433.16	448.11	463.56	479.56	496.10	513.22	530.92	549.24	568.19	587.79	608.07	629.05	650.75	673.20	696.43	720.46	745.31	771.02	797.62	825.14	853.61	883.06	913.53	945.04	977.65
Per unit Variable Cost	Rs/kWh		6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47	14.97	15.49

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		28.54	29.45	30.41	31.40	32.42	33.49	34.61	35.76	36.96	38.21	39.50	40.85	42.24	43.69	45.20	46.52	48.20	49.94	51.75	53.63	55.72	57.75	59.85	62.03	64.29
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		207.63	208.25	209.07	210.10	211.35	212.84	214.58	216.57	218.84	221.40	224.25	227.42	230.92	234.76	238.98	226.47	235.01	243.97	253.37	263.24	283.27	294.14	305.56	317.55	330.13

Levilled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.17	6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47	14.97	15.49
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.60	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.76	0.79	0.82	0.85	0.88	0.91	0.95	0.98	1.02
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	12.73	10.15	10.40	10.66	10.93	11.21	11.50	11.81	12.13	12.47	12.82	13.19	13.57	13.97	14.39	14.82	15.00	15.53	16.08	16.65	17.24	18.01	18.65	19.32	20.00	20.72

Variable Cost (Rs/Unit)	6.86
Levilled Tariff (Fixed) (Rs/Unit)	3.56
Levilled Tariff(Rs/Unit)	10.43

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
WAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Tax Benefit Levilled (Rs./Unit)	9.21
Electricity Generation (Levilled) (Rs./Unit)	6.03
Levilled benefit (Rs./Unit)	0.15

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	Rs/kWh		6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		27.09	27.95	28.84	29.77	30.74	31.74	32.78	33.87	35.00	36.17	37.39	38.65	39.97	41.33	42.76	43.96	45.55	47.20	48.92	50.70	52.70	54.61	56.60	58.67	60.81
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86
Total Fixed Cost	Rs Lakh		214.18	214.50	215.02	215.76	216.72	217.90	219.34	221.03	222.99	225.24	227.78	230.63	233.81	237.34	241.23	227.25	235.69	244.56	253.86	263.63	274.21	284.98	296.29	308.16	320.63

Levelised tariff corresponding to Useful life

Revised Unit Cost Corresponding to Usd/kWh																											
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	
Per unit Variable Cost	Rs/kWh	8.77	6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.58	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.99
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.48	10.03	10.26	10.51	10.76	11.03	11.31	11.60	11.90	12.22	12.56	12.90	13.27	13.65	14.05	14.46	14.60	15.11	15.64	16.20	16.77	17.54	18.16	18.80	19.47	20.17

Variable Cost (Rs/Unit)	6.56
Levllised Tariff (Fixed) (Rs/Unit)	3.71
Levelised Tariff(Rs/Unit)	10.27

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelised (Rs./Unit)	9.83																									
Electricity Generation (Levelised) (Rs./Unit)	5.89																									
Levelised benefit (Rs./Unit)	0.17																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		461.02	476.93	493.38	510.40	528.01	546.23	565.07	584.57	604.74	625.60	647.18	669.51	692.61	716.50	741.22	766.79	793.25	820.62	848.93	878.22	908.51	939.86	972.28	1,005.83	1,040.53
Per unit Variable Cost	Rs/kWh		7.47	7.73	7.99	8.27	8.56	8.85	9.16	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.43	12.85	13.30	13.76	14.23	14.72	15.23	15.75	16.30	16.86
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		30.21	31.17	32.18	33.22	34.31	35.43	36.61	37.82	39.09	40.40	41.76	43.18	44.65	46.18	47.77	49.14	50.91	52.75	54.66	56.63	58.84	60.97	63.18	65.47	67.85
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		217.29	217.72	218.36	219.21	220.29	221.60	223.16	224.98	227.08	229.47	232.15	235.16	238.50	242.19	246.24	232.43	241.06	250.11	259.60	269.57	290.36	301.34	312.86	324.96	337.66

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.98	7.47	7.73	7.99	8.27	8.56	8.85	9.16	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.43	12.85	13.30	13.76	14.23	14.72	15.23	15.75	16.30	16.86
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.65	0.49	0.51	0.52	0.54	0.56	0.57	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.75	0.77	0.80	0.83	0.85	0.89	0.92	0.95	0.99	1.02	1.06	1.10
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	13.76	10.99	11.26	11.53	11.82	12.13	12.44	12.77	13.12	13.48	13.86	14.25	14.66	15.09	15.53	16.00	16.19	16.76	17.35	17.96	18.60	19.43	20.11	20.82	21.56	22.33

Variable Cost (Rs/Unit)	7.47
Levillised Tariff (Fixed) (Rs/Unit)	3.78
Levillised Tariff(Rs/Unit)	11.25

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.83																									
Electricity Generation (Levellised) (Rs./	5.89																									
Levellised benefit (Rs./Unit)	0.17																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		471.50	487.76	504.59	522.00	540.01	558.64	577.91	597.85	618.47	639.81	661.88	684.72	708.34	732.78	758.06	784.21	811.27	839.26	868.21	898.17	929.15	961.21	994.37	1,028.68	1,064.17
Per unit Variable Cost	Rs/kWh		7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.73	11.10	11.48	11.87	12.28	12.71	13.15	13.60	14.07	14.55	15.06	15.58	16.11	16.67	17.24
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		30.79	31.78	32.80	33.87	34.97	36.12	37.32	38.56	39.85	41.19	42.58	44.02	45.53	47.08	48.70	50.11	51.92	53.79	55.73	57.74	59.99	62.16	64.41	66.74	69.17
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86
Total Fixed Cost	Rs Lakh		217.88	218.33	218.98	219.85	220.95	222.29	223.87	225.72	227.84	230.26	232.97	236.00	239.37	243.09	247.18	253.40	262.06	273.14	286.68	302.68	321.16	342.09	365.53	392.23	422.08
Levelised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	10.21	7.64	7.90	8.18	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.73	11.10	11.48	11.87	12.28	12.71	13.15	13.60	14.07	14.55	15.06	15.58	16.11	16.67	17.24
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.66	0.50	0.51	0.53	0.55	0.57	0.59	0.60	0.62	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.81	0.84	0.87	0.90	0.94	0.97	1.01	1.04	1.08	1.12
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	14.00	11.17	11.44	11.72	12.02	12.33	12.65	12.99	13.35	13.71	14.10	14.50	14.92	15.36	15.81	16.29	16.49	17.07	17.67	18.29	18.94	19.78	20.48	21.20	21.96	22.74
Variable Cost (Rs/Unit)	7.64																										
Levllised Tariff (Fixed) (Rs/Unit)	3.79																										
Levllised Tariff (Rs/Unit)	11.43																										

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depmn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levelised (Rs./Unit)	9.83																										
Electricity Generation (Levelised) (Rs./Unit)	5.89																										
Levelised benefit (Rs./Unit)	0.17																										



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		482.17	498.81	516.02	533.82	552.23	571.29	591.00	611.39	632.48	654.30	676.87	700.22	724.38	749.37	775.23	801.97	829.64	858.26	887.87	918.50	950.19	982.97	1,016.89	1,051.97	1,088.26
Per unit Variable Cost	Rs/kWh		7.81	8.08	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.60	10.97	11.35	11.74	12.14	12.56	13.00	13.44	13.91	14.39	14.88	15.40	15.93	16.48	17.05	17.63
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		31.38	32.39	33.44	34.53	35.66	36.83	38.05	39.31	40.63	41.99	43.41	44.89	46.42	48.01	49.66	51.10	52.94	54.85	56.82	58.88	61.16	63.37	65.66	68.04	70.51
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86
Total Fixed Cost	Rs Lakh		218.47	218.94	219.62	220.51	221.63	222.99	224.60	226.47	228.62	231.06	233.80	236.87	240.27	244.02	248.14	252.20	256.26	260.32	264.38	268.44	272.50	276.56	280.62	284.68	288.74

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	10.44	7.81	8.08	8.36	8.65	8.95	9.26	9.58	9.91	10.25	10.60	10.97	11.35	11.74	12.14	12.56	13.00	13.44	13.91	14.39	14.88	15.40	15.93	16.48	17.05	17.63
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.67	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.80	0.83	0.86	0.89	0.92	0.95	0.99	1.03	1.06	1.10	1.14
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	14.24	11.35	11.63	11.92	12.22	12.54	12.87	13.22	13.58	13.95	14.35	14.76	15.18	15.63	16.10	16.58	16.79	17.38	17.99	18.63	19.29	20.14	20.85	21.59	22.35	23.15

Variable Cost (Rs/Unit)	7.81
Levillised Tariff (Fixed) (Rs/Unit)	3.80
Levillised Tariff(Rs/Unit)	11.62

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levillised (Rs /Unit)		9.83																								
Electricity Generation (Levillised) (Rs /Unit)		5.89																								
Levillised benefit (Rs/Unit)		0.17																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		Debt Component	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		Equity Component	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	Fiscal Assumptions	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		Depreciation	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		For Variable Charges			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Heat Rate	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		402.45	416.34	430.70	445.56	460.93	476.84	493.29	510.30	527.91	546.12	564.96	584.46	604.62	625.48	647.06	669.38	692.47	716.36	741.08	766.65	793.10	820.46	848.76	878.05	908.34
Per unit Variable Cost	Rs/kWh		6.52	6.75	6.98	7.22	7.47	7.73	7.99	8.27	8.55	8.85	9.15	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.42	12.85	13.29	13.75	14.23	14.72
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		26.95	27.80	28.69	29.61	30.57	31.57	32.61	33.69	34.81	35.98	37.19	38.45	39.75	41.11	42.53	43.72	45.31	46.95	48.66	50.43	52.42	54.32	56.31	58.36	60.50
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		214.04	214.35	214.87	215.60	216.55	217.74	219.17	220.85	222.81	225.04	227.58	230.43	233.60	237.12	241.00	227.01	235.45	244.31	253.60	263.37	283.94	294.70	305.99	317.85	330.31

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.71	6.52	6.75	6.98	7.22	7.47	7.73	7.99	8.27	8.55	8.85	9.15	9.47	9.80	10.14	10.49	10.85	11.22	11.61	12.01	12.42	12.85	13.29	13.75	14.23	14.72
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.58	0.44	0.45	0.46	0.48	0.50	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.95	0.98
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.42	9.99	10.22	10.46	10.71	10.98	11.25	11.54	11.85	12.16	12.50	12.84	13.20	13.58	13.98	14.39	14.53	15.04	15.57	16.12	16.69	17.45	18.07	18.71	19.38	20.07

Variable Cost (Rs./Unit)	6.52
Levillised Tariff (Fixed) (Rs./Unit)	3.71
Levillised Tariff(Rs./Unit)	10.23

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levillised (Rs./Unit)		9.83																								
Electricity Generation (Levillised) (Rs./Unit)		5.89																								
Levillised benefit (Rs./Unit)		0.17																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		398.39	412.13	426.35	441.06	456.27	472.02	488.30	505.15	522.57	540.60	559.25	578.55	598.51	619.16	640.52	662.62	685.48	709.13	733.59	758.90	785.08	812.17	840.19	869.17	899.16
Per unit Variable Cost	Rs/kWh		6.46	6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		26.72	27.57	28.45	29.36	30.32	31.31	32.33	33.40	34.51	35.67	36.87	38.12	39.41	40.76	42.16	43.35	44.92	46.55	48.24	49.99	51.97	53.86	55.83	57.87	59.98
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		213.81	214.12	214.63	215.35	216.29	217.47	218.89	220.56	222.51	224.74	227.26	230.10	233.26	236.77	240.64	226.64	235.06	243.90	253.19	262.93	283.49	294.23	305.51	317.36	329.80
Levilled tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	8.63	6.46	6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.45	0.46	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.33	9.92	10.15	10.39	10.64	10.90	11.17	11.46	11.76	12.07	12.40	12.74	13.10	13.48	13.87	14.28	14.41	14.92	15.44	15.99	16.56	17.32	17.93	18.57	19.23	19.91
Variable Cost (Rs/Unit)		6.46																									
Levilled Tariff (Fixed) (Rs/Unit)		3.70																									
Levilled Tariff(Rs/Unit)		10.16																									

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.83																									
Electricity Generation (Levellised) (Rs./Unit)	5.89																									
Levellised benefit (Rs./Unit)	0.17																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		405.00	418.97	433.42	448.38	463.84	479.85	496.40	513.53	531.24	549.57	568.53	588.15	608.44	629.43	651.14	673.61	696.85	720.89	745.76	771.49	798.11	825.64	854.12	883.59	914.08
Per unit Variable Cost	Rs/kWh		6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		27.09	27.95	28.84	29.77	30.74	31.74	32.78	33.87	35.00	36.17	37.39	38.65	39.97	41.33	42.76	43.96	45.55	47.20	48.92	50.70	52.70	54.61	56.60	58.67	60.81
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		214.18	214.50	215.02	215.76	216.72	217.90	219.34	221.03	222.99	225.24	227.78	230.63	233.81	237.34	241.23	227.25	235.69	244.56	253.86	263.63	284.21	294.98	306.29	318.16	330.63

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.77	6.56	6.79	7.02	7.27	7.52	7.78	8.04	8.32	8.61	8.91	9.21	9.53	9.86	10.20	10.55	10.92	11.29	11.68	12.08	12.50	12.93	13.38	13.84	14.32	14.81
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.58	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.99
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.48	10.03	10.26	10.51	10.76	11.03	11.31	11.60	11.90	12.22	12.56	12.90	13.27	13.65	14.05	14.46	14.60	15.11	15.64	16.20	16.77	17.54	18.16	18.80	19.47	20.17

Variable Cost (Rs/Unit)	6.56
Levillised Tariff (Fixed) (Rs/Unit)	3.71
Levillised Tariff(Rs/Unit)	10.27

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.83																									
Electricity Generation (Levellised) (Rs./Unit)	5.89																									
Levellised benefit (Rs./Unit)	0.17																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		412.11	426.33	441.04	456.26	472.00	488.28	505.13	522.55	540.58	559.23	578.52	598.48	619.13	640.49	662.59	685.45	709.10	733.56	758.87	785.05	812.13	840.15	869.14	899.12	930.14
Per unit Variable Cost	Rs/kWh		6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57	15.07

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		27.49	28.36	29.27	30.21	31.19	32.21	33.27	34.37	35.52	36.71	37.94	39.23	40.56	41.95	43.39	44.82	46.23	47.61	49.05	51.45	53.48	55.42	57.44	59.53	61.71
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86
Total Fixed Cost	Rs Lakh		214.57	214.91	215.45	216.20	217.17	218.37	219.82	221.53	223.51	225.77	228.33	231.21	234.41	237.96	241.87	227.91	236.37	245.26	254.59	264.39	285.00	295.79	307.13	319.03	331.52

Levellised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.92	6.68	6.91	7.15	7.39	7.65	7.91	8.19	8.47	8.76	9.06	9.37	9.70	10.03	10.38	10.74	11.11	11.49	11.89	12.30	12.72	13.16	13.61	14.08	14.57	15.07
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.59	0.45	0.46	0.47	0.49	0.51	0.52	0.54	0.56	0.58	0.59	0.61	0.64	0.66	0.68	0.70	0.72	0.75	0.78	0.80	0.83	0.87	0.90	0.93	0.96	1.00
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.64	10.15	10.39	10.64	10.90	11.17	11.45	11.75	12.06	12.38	12.72	13.07	13.44	13.83	14.23	14.66	14.80	15.32	15.86	16.42	17.01	17.78	18.41	19.06	19.74	20.44

Variable Cost (Rs/Unit)	6.68
Levellised Tariff (Fixed) (Rs/Unit)	3.72
Levellised Tariff(Rs/Unit)	10.40

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levellised (Rs./Unit)	9.83
Electricity Generation (Levellised) (Rs./	5.89
Levellised benefit (Rs./Unit)	0.17



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,200.00
			During Stabilization Period	Kcal/kWh	4,200.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		433.16	448.11	463.56	479.56	496.10	513.22	530.92	549.24	568.19	587.79	608.07	629.05	650.75	673.20	696.43	720.46	745.31	771.02	797.62	825.14	853.61	883.06	913.53	945.04	977.65
Per unit Variable Cost	Rs/kWh		7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80	15.31	15.84
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		28.66	29.57	30.52	31.51	32.53	33.60	34.71	35.86	37.05	38.29	39.59	40.93	42.32	43.77	45.27	46.57	48.25	49.99	51.80	53.68	55.78	57.81	59.91	62.09	64.35
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		215.74	216.12	216.70	217.49	218.51	219.76	221.26	223.02	225.05	227.36	229.98	232.91	236.17	239.78	243.75	229.86	238.39	247.35	256.75	266.62	287.30	298.18	309.60	321.58	334.16

Levilled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.38	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80	15.31	15.84
O&M Expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.61	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.69	0.71	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97	1.01	1.04
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	13.12	10.51	10.76	11.02	11.30	11.58	11.88	12.19	12.51	12.85	13.21	13.58	13.97	14.37	14.79	15.23	15.40	15.94	16.50	17.09	17.69	18.49	19.14	19.82	20.52	21.26

Variable Cost (Rs/Unit)	7.02
Levilled Tariff (Fixed) (Rs/Unit)	3.75
Levilled Tariff(Rs/Unit)	10.76

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.85%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levilled (Rs./Unit)		9.83																								
Electricity Generation (Levilled) (Rs./Unit)		5.89																								
Levilled benefit (Rs./Unit)		0.17																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	Rs/kWh		6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.41	27.27	28.15	29.08	30.03	31.03	32.07	33.14	34.26	35.42	36.63	37.88	39.19	40.54	41.95	43.18	44.74	46.37	48.06	49.81	51.77	53.66	55.62	57.66	59.77
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.48	196.33	197.37	198.63	200.11	201.82	203.78	205.99	208.47	211.23	214.29	217.67	221.37	225.41	229.82	218.95	227.37	236.21	245.50	255.24	274.32	285.06	296.34	308.19	320.62

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.42	6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.55	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.95
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.82	9.40	9.63	9.87	10.12	10.39	10.66	10.95	11.25	11.57	11.90	12.24	12.60	12.98	13.37	13.77	13.95	14.45	14.96	15.49	16.05	16.77	17.36	17.99	18.63	19.30

Variable Cost (Rs/Unit)	6.30
Levllised Tariff (Fixed) (Rs/Unit)	3.40
Levelised Tariff(Rs/Unit)	9.70

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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%	0.00%
Book Depreciation	Rs Lakh	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	316	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631	631
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	

Tax Benefit Levellised (Rs./Unit)	8.43
Electricity Generation (Levellised) (Rs./Unit)	6.03
Levelised benefit (Rs./Unit)	0.14



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		452.79	468.41	484.57	501.29	518.58	536.47	554.98	574.13	593.94	614.43	635.63	657.55	680.24	703.71	727.99	753.10	779.08	805.96	833.77	862.53	892.29	923.07	954.92	987.87	1,021.95
Per unit Variable Cost	Rs/kWh		7.17	7.42	7.68	7.94	8.22	8.50	8.79	9.10	9.41	9.74	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.67	14.14	14.63	15.13	15.65	16.19
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		29.48	30.43	31.43	32.47	33.54	34.66	35.82	37.02	38.28	39.58	40.93	42.33	43.79	45.30	46.87	48.27	50.01	51.82	53.70	55.65	57.80	59.90	62.08	64.34	66.68
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		198.54	199.49	200.65	202.02	203.62	205.45	207.53	209.87	212.49	215.39	218.59	222.11	225.97	230.17	234.74	224.04	232.64	241.66	251.13	261.07	280.36	291.31	302.80	314.86	327.53

Levelled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.59	7.17	7.42	7.68	7.94	8.22	8.50	8.79	9.10	9.41	9.74	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.67	14.14	14.63	15.13	15.65	16.19
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.62	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.98	1.02	1.06
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	13.05	10.32	10.58	10.86	11.14	11.44	11.76	12.08	12.42	12.78	13.15	13.53	13.94	14.36	14.80	15.25	15.48	16.03	16.60	17.19	17.80	18.58	19.24	19.93	20.64	21.38

Variable Cost (Rs/Unit)	7.17
Levllised Tariff (Fixed) (Rs/Unit)	3.46
Levelled Tariff (Rs/Unit)	10.64

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelled (Rs./Unit)	8.43																									
Electricity Generation (Levelled) (Rs./Unit)	6.03																									
Levelled benefit (Rs./Unit)	0.14																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		463.08	479.05	495.58	512.68	530.36	548.66	567.59	587.17	607.43	628.39	650.06	672.49	695.69	719.69	744.52	770.21	796.78	824.27	852.71	882.13	912.56	944.04	976.61	1,010.31	1,045.16
Per unit Variable Cost	Rs/kWh		7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.65	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		30.05	31.03	32.04	33.10	34.20	35.34	36.52	37.75	39.03	40.35	41.73	43.16	44.64	46.19	47.79	49.22	51.00	52.84	54.75	56.74	58.93	61.07	63.28	65.58	67.97
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		199.11	200.09	201.26	202.65	204.27	206.13	208.23	210.60	213.24	216.16	219.40	222.94	226.83	231.06	235.66	240.99	233.63	242.68	252.19	262.16	281.48	292.47	304.01	316.11	328.82

Levellised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.80	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.65	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.63	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.78	0.81	0.84	0.87	0.90	0.93	0.97	1.00	1.04	1.08
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	13.28	10.49	10.76	11.04	11.33	11.64	11.96	12.29	12.64	13.00	13.38	13.78	14.19	14.62	15.06	15.53	15.77	16.33	16.90	17.51	18.13	18.92	19.59	20.29	21.02	21.77

Variable Cost (Rs/Unit)	7.34
Levellised Tariff (Fixed) (Rs/Unit)	3.47
Levellised Tariff(Rs/Unit)	10.81

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																													
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depm.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.14	0.12		
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.14	0.13		

Tax Benefit Levellised (Rs./Unit)	8.43
Electricity Generation (Levellised) (Rs./MU)	6.03
Levellised benefit (Rs./Unit)	0.14

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	Unit		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		473.56	489.90	506.80	524.29	542.37	561.09	580.44	600.47	621.18	642.61	664.78	687.72	711.45	735.99	761.38	787.65	814.82	842.94	872.02	902.10	933.22	965.42	998.73	1,033.18	1,068.83
Per unit Variable Cost	Rs/kWh		7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.82	16.37	16.93
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		30.63	31.63	32.67	33.75	34.87	36.03	37.23	38.49	39.79	41.14	42.55	44.01	45.52	47.09	48.73	50.19	52.00	53.88	55.83	57.85	60.08	62.25	64.51	66.86	69.29
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47
Total Fixed Cost	Rs Lakh		199.70	200.69	201.89	203.30	204.94	206.82	208.95	211.34	214.00	216.96	220.21	223.79	227.70	231.97	236.60	225.97	234.63	243.72	253.26	263.27	282.63	293.66	305.24	317.39	330.14

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	10.03	7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.82	16.37	16.93
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.64	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.70	0.72	0.75	0.77	0.80	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.06	1.10
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	13.51	10.67	10.94	11.23	11.53	11.84	12.17	12.51	12.86	13.23	13.62	14.02	14.44	14.88	15.34	15.81	16.06	16.63	17.22	17.83	18.46	19.26	19.95	20.66	21.40	22.17

Variable Cost (Rs/Unit)	7.50
Levillised Tariff (Fixed) (Rs/Unit)	3.49
Levillised Tariff(Rs/Unit)	10.99

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depm.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs /Unit)		8.43																									
Electricity Generation (Levellised) (Rs./kWh)		6.03																									
Levellised benefit (Rs./Unit)		0.14																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		Debt Component	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		Equity Component	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	Fiscal Assumptions	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		Depreciation	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		For Variable Charges			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Heat Rate	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		395.27	408.90	423.01	437.60	452.70	468.32	484.48	501.19	518.48	536.37	554.88	574.02	593.82	614.31	635.50	657.43	680.11	703.57	727.85	752.96	778.93	805.81	833.61	862.37	892.12
Per unit Variable Cost	Rs/kWh		6.26	6.48	6.70	6.93	7.17	7.42	7.68	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.66	14.13

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.27	27.12	28.01	28.92	29.88	30.87	31.90	32.97	34.08	35.23	36.43	37.68	38.98	40.32	41.72	42.94	44.50	46.12	47.81	49.55	51.49	53.37	55.33	57.35	59.46
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.34	196.18	197.22	198.48	199.95	201.66	203.61	205.81	208.29	211.04	214.10	217.46	221.16	225.20	229.59	218.72	227.13	235.97	245.24	254.97	274.05	284.78	296.05	307.88	320.31

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.37	6.26	6.48	6.70	6.93	7.17	7.42	7.68	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.66	14.13
O&M Expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.55	0.42	0.43	0.44	0.46	0.47	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.94
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.76	9.36	9.59	9.83	10.08	10.34	10.62	10.90	11.20	11.51	11.84	12.18	12.54	12.91	13.30	13.71	13.88	14.37	14.89	15.42	15.97	16.68	17.28	17.90	18.54	19.21

Variable Cost (Rs/Unit)	6.26
Levelised Tariff (Fixed) (Rs/Unit)	3.39
Levelised Tariff(Rs/Unit)	9.66

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Tax Benefit Levelised (Rs./Unit)	8.43
Electricity Generation (Levelised) (Rs./Unit)	6.03
Levelised benefit (Rs./Unit)	0.14



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		391.27	404.77	418.74	433.18	448.13	463.59	479.58	496.13	513.24	530.95	549.27	568.22	587.82	608.10	629.08	650.78	673.24	696.46	720.49	745.35	771.06	797.66	825.18	853.65	883.10
Per unit Variable Cost	Rs/kWh		6.20	6.41	6.63	6.86	7.10	7.35	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.42	11.81	12.22	12.64	13.07	13.53	13.99
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.05	26.89	27.77	28.68	29.62	30.60	31.62	32.68	33.79	34.93	36.12	37.36	38.64	39.98	41.37	42.58	44.12	45.73	47.40	49.13	51.06	52.92	54.86	56.87	58.96
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.12	195.95	196.99	198.23	199.70	201.39	203.33	205.53	208.00	210.74	213.79	217.14	220.82	224.85	229.24	218.35	226.75	235.57	244.83	254.55	273.61	284.33	295.58	307.40	319.81

Levellers tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.28	6.20	6.41	6.63	6.86	7.10	7.35	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.42	11.81	12.22	12.64	13.07	13.53	13.99
O&M Expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.55	0.41	0.43	0.44	0.45	0.47	0.48	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.66	0.67	0.70	0.72	0.75	0.78	0.81	0.84	0.87	0.90	0.93
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.67	9.29	9.52	9.76	10.00	10.26	10.54	10.82	11.12	11.43	11.75	12.09	12.44	12.81	13.20	13.60	13.77	14.26	14.77	15.29	15.84	16.55	17.14	17.76	18.40	19.06

Variable Cost (Rs/Unit)	6.20
Levellers Tariff (Fixed) (Rs/Unit)	3.39
Levellers Tariff (Rs/Unit)	9.59

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Accelerated Depreciation																												
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00		
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00		
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00		
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31		
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12		
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13		
Tax Benefit Levellised (Rs./Unit)		8.43																										
Electricity Generation (Levellised) (Rs./Unit)		6.03																										
Levellised benefit (Rs./Unit)		0.14																										



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	RskWh		6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.41	27.27	28.15	29.08	30.03	31.03	32.07	33.14	34.26	35.42	36.63	37.88	39.19	40.54	41.95	43.18	44.74	46.37	48.06	49.81	51.77	53.66	55.62	57.66	59.77
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.48	196.33	197.37	198.63	200.11	201.82	203.78	205.99	208.47	211.23	214.29	217.67	221.37	225.41	229.82	218.95	227.37	236.21	245.50	255.24	274.32	285.06	296.34	308.19	320.62

Levilled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.42	6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.55	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.95
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.82	9.40	9.63	9.87	10.12	10.39	10.66	10.95	11.25	11.57	11.90	12.24	12.60	12.98	13.37	13.77	13.95	14.45	14.96	15.49	16.05	16.77	17.36	17.99	18.63	19.30

Variable Cost (Rs/Unit)	6.30
Levilled Tariff (Fixed) (Rs/Unit)	3.40
Levilled Tariff(Rs/Unit)	9.70

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Deprn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.16	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	6.31	6.31	6.31		
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	

Tax Benefit Levilled (Rs./Unit)	8.43
Electricity Generation (Levilled) (Rs./Unit)	6.03
Levilled benefit (Rs./Unit)	0.14



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		404.75	418.72	433.16	448.11	463.57	479.56	496.11	513.22	530.93	549.24	568.19	587.80	608.08	629.05	650.76	673.21	696.43	720.46	745.32	771.03	797.63	825.15	853.62	883.07	913.53
Per unit Variable Cost	Rs/kWh		6.41	6.63	6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		26.80	27.67	28.57	29.51	30.48	31.49	32.54	33.63	34.77	35.95	37.17	38.45	39.77	41.14	42.57	43.82	45.41	47.06	48.78	50.56	52.53	54.45	56.44	58.50	60.65
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		195.87	196.73	197.79	199.06	200.56	202.28	204.25	206.48	208.98	211.76	214.84	218.23	221.95	226.02	230.44	219.60	228.04	236.91	246.21	255.98	275.09	285.86	297.16	309.03	321.50

Levellers tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.57	6.41	6.63	6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.44	0.45	0.47	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.75	0.77	0.80	0.83	0.86	0.89	0.93	0.96
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.97	9.52	9.75	10.00	10.25	10.52	10.80	11.10	11.40	11.72	12.06	12.41	12.77	13.15	13.55	13.96	14.15	14.65	15.17	15.71	16.27	17.00	17.60	18.23	18.89	19.57

Variable Cost (Rs/Unit)	6.41
Levellers Tariff (Fixed) (Rs/Unit)	3.41
Levellers Tariff (Rs/Unit)	9.82

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	3.16	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	6.31	6.31	6.31		
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	

Tax Benefit Levelised (Rs./Unit)	8.43
Electricity Generation (Levelised) (Rs./Unit)	6.03
Levelised benefit (Rs./Unit)	0.14



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	638
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	638
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	447
			Total Equity Amount	Rs Lacs	191
		<u>Debt Component</u>	Loan Amount	Rs Lacs	447
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	191
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		425.43	440.10	455.29	470.99	487.24	504.05	521.44	539.43	558.04	577.30	597.21	617.82	639.13	661.18	683.99	707.59	732.00	757.26	783.38	810.41	838.37	867.29	897.21	928.17	960.19
Per unit Variable Cost	Rs/kWh		6.74	6.97	7.21	7.46	7.72	7.99	8.26	8.55	8.84	9.15	9.46	9.79	10.13	10.48	10.84	11.21	11.60	12.00	12.41	12.84	13.28	13.74	14.22	14.71	15.21
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	29.77	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Interest on term loan	Rs Lakh		46.23	43.04	39.85	36.66	33.48	30.29	27.10	23.91	20.72	17.54	14.35	11.16	7.97	4.78	1.59	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		27.95	28.86	29.80	30.78	31.80	32.85	33.95	35.09	36.28	37.51	38.79	40.12	41.50	42.93	44.42	45.74	47.39	49.11	50.90	52.75	54.80	56.79	58.86	61.01	63.24
Return on Equity	Rs Lakh		32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	41.19	41.19	41.19	41.19	41.19
Total Fixed Cost	Rs Lakh		197.02	197.92	199.02	200.33	201.87	203.65	205.66	207.94	210.49	213.32	216.45	219.90	223.68	227.80	232.29	221.51	230.02	238.95	248.33	258.17	277.36	288.20	299.59	311.54	324.09

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.01	6.74	6.97	7.21	7.46	7.72	7.99	8.26	8.55	8.84	9.15	9.46	9.79	10.13	10.48	10.84	11.21	11.60	12.00	12.41	12.84	13.28	13.74	14.22	14.71	15.21
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.59	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.56	0.57	0.59	0.61	0.64	0.66	0.68	0.70	0.72	0.75	0.78	0.81	0.84	0.87	0.90	0.93	0.97	1.00
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	12.44	9.86	10.11	10.37	10.64	10.92	11.21	11.52	11.84	12.18	12.53	12.89	13.27	13.67	14.09	14.52	14.72	15.24	15.78	16.35	16.93	17.68	18.31	18.96	19.64	20.35

Variable Cost (Rs/Unit)	6.74
Levillised Tariff (Fixed) (Rs/Unit)	3.43
Levillised Tariff(Rs/Unit)	10.17

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	638.00

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	16.84	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	33.69	18.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	191.40	223.30	89.32	53.59	32.16	19.29	11.58	6.95	4.17	2.50	1.50	0.90	0.54	0.32	0.19	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	174.56	189.61	55.63	19.91	-1.53	-14.39	-22.11	-26.74	-29.52	-31.19	-32.19	-32.79	-33.15	-33.36	-33.49	-33.57	-33.62	-18.33	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	61.00	66.26	19.44	6.96	-0.54	-5.03	-7.73	-9.34	-10.32	-10.90	-11.25	-11.46	-11.58	-11.66	-11.70	-11.73	-11.75	-6.41	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levillised (Rs./Unit)	8.43
Electricity Generation (Levillised) (Rs./MU)	6.03
Levillised benefit (Rs./Unit)	0.14



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	Rs/kWh		6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.53	27.38	28.27	29.19	30.14	31.13	32.17	33.24	34.35	35.51	36.71	37.96	39.26	40.61	42.02	43.23	44.79	46.42	48.11	49.87	51.83	53.72	55.68	57.72	59.83
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		203.59	204.20	205.01	206.03	207.27	208.74	210.46	212.43	214.67	217.20	220.02	223.16	226.62	230.42	234.59	222.33	230.75	239.60	248.88	258.62	278.36	289.10	300.38	312.22	324.65

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.61	6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.56	0.58	0.59	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.19	9.74	9.98	10.22	10.47	10.74	11.02	11.31	11.61	11.93	12.27	12.61	12.98	13.36	13.75	14.16	14.32	14.83	15.36	15.90	16.47	17.21	17.82	18.46	19.12	19.81

Variable Cost (Rs/Unit)	6.45
Levllised Tariff (Fixed) (Rs/Unit)	3.58
Levelised Tariff(Rs/Unit)	10.02

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelised (Rs./Unit)		9.05																								
Electricity Generation (Levelised) (Rs./Unit)		5.89																								
Levelised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		452.79	468.41	484.57	501.29	518.58	536.47	554.98	574.13	593.94	614.43	635.63	657.55	680.24	703.71	727.99	753.10	779.08	805.96	833.77	862.53	892.29	923.07	954.92	987.87	1,021.95
Per unit Variable Cost	Rs/kWh		7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.66	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		29.60	30.55	31.55	32.58	33.65	34.76	35.92	37.12	38.37	39.66	41.01	42.41	43.86	45.37	46.94	48.32	50.06	51.87	53.75	55.70	57.86	59.96	62.14	64.40	66.74
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		206.65	207.37	208.28	209.42	210.77	212.37	214.21	216.31	218.69	221.35	224.32	227.60	231.22	235.18	239.51	227.43	236.02	245.05	254.52	264.45	284.39	295.34	306.83	318.90	331.57

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.80	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.66	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.64	0.48	0.50	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.64	0.66	0.69	0.71	0.74	0.76	0.78	0.81	0.84	0.87	0.90	0.94	0.97	1.01	1.04	1.08
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	13.45	10.69	10.95	11.23	11.52	11.82	12.13	12.46	12.81	13.17	13.54	13.93	14.34	14.77	15.21	15.68	15.89	16.45	17.03	17.63	18.26	19.07	19.74	20.45	21.17	21.93

Variable Cost (Rs/Unit)	7.34
Levlised Tariff (Fixed) (Rs/Unit)	3.64
Levelised Tariff(Rs/Unit)	10.98

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levelised (Rs./Unit)	9.05
Electricity Generation (Levelised) (Rs./Unit)	5.89
Levelised benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		463.08	479.05	495.58	512.68	530.36	548.66	567.59	587.17	607.43	628.39	650.06	672.49	695.69	719.69	744.52	770.21	796.78	824.27	852.71	882.13	912.56	944.04	976.61	1,010.31	1,045.16
Per unit Variable Cost	Rs/kWh		7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.83	16.37	16.94
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		30.17	31.14	32.16	33.21	34.30	35.44	36.62	37.85	39.12	40.44	41.81	43.24	44.72	46.26	47.86	49.27	51.05	52.89	54.80	56.79	58.99	61.13	63.34	65.64	68.03
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		207.23	207.96	208.90	210.05	211.43	213.05	214.91	217.04	219.44	222.13	225.12	228.43	232.08	236.07	240.43	228.38	237.01	246.06	255.57	265.54	285.52	296.51	308.04	320.15	332.86

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	10.03	7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.83	16.37	16.94
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.65	0.49	0.50	0.52	0.54	0.56	0.57	0.59	0.61	0.63	0.66	0.68	0.70	0.72	0.75	0.78	0.80	0.83	0.86	0.89	0.92	0.96	0.99	1.03	1.06	1.10
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	13.68	10.86	11.13	11.42	11.71	12.02	12.34	12.68	13.03	13.40	13.78	14.18	14.60	15.03	15.49	15.96	16.18	16.75	17.34	17.96	18.60	19.41	20.10	20.82	21.56	22.33

Variable Cost (Rs/Unit)	7.50
Levelised Tariff (Fixed) (Rs/Unit)	3.65
Levelised Tariff (Rs/Unit)	11.16

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelised (Rs./Unit)		9.05																								
Electricity Generation (Levelised) (Rs./Unit)		5.89																								
Levelised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		473.56	489.90	506.80	524.29	542.37	561.09	580.44	600.47	621.18	642.61	664.78	687.72	711.45	735.99	761.38	787.65	814.82	842.94	872.02	902.10	933.22	965.42	998.73	1,033.18	1,068.83
Per unit Variable Cost	Rs/kWh		7.67	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.41	10.77	11.14	11.53	11.93	12.34	12.76	13.20	13.66	14.13	14.62	15.12	15.64	16.18	16.74	17.32
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		30.75	31.75	32.78	33.86	34.97	36.13	37.33	38.59	39.88	41.23	42.63	44.09	45.60	47.17	48.80	50.24	52.05	53.93	55.88	57.90	60.14	62.32	64.57	66.92	69.35
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		207.81	208.56	209.52	210.70	212.10	213.74	215.63	217.78	220.21	222.92	225.94	229.28	232.95	236.98	241.37	229.35	238.01	247.10	256.64	266.66	286.67	297.70	309.27	321.42	334.17

Levillised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Per unit Variable Cost	Rs/kWh	10.25	7.67	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.41	10.77	11.14	11.53	11.93	12.34	12.76	13.20	13.66	14.13	14.62	15.12	15.64	16.18	16.74	17.32
O&M Expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.66	0.50	0.51	0.53	0.55	0.57	0.59	0.60	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.81	0.84	0.87	0.91	0.94	0.97	1.01	1.05	1.08	1.12
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	13.92	11.04	11.32	11.61	11.91	12.23	12.56	12.90	13.26	13.63	14.03	14.43	14.86	15.30	15.77	16.25	16.48	17.06	17.66	18.29	18.94	19.77	20.47	21.19	21.95	22.73

Variable Cost (Rs/Unit)	7.67
Levillised Tariff (Fixed) (Rs/Unit)	3.67
Levillised Tariff (Rs/Unit)	11.34

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)		9.05																								
Electricity Generation (Levellised) (Rs./Unit)		5.89																								
Levellised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		395.27	408.90	423.01	437.60	452.70	468.32	484.48	501.19	518.48	536.37	554.88	574.02	593.82	614.31	635.50	657.43	680.11	703.57	727.85	752.96	778.93	805.81	833.61	862.37	892.12
Per unit Variable Cost	Rs/kWh		6.40	6.63	6.85	7.09	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.95	10.30	10.65	11.02	11.40	11.79	12.20	12.62	13.06	13.51	13.97	14.46
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.40	27.24	28.12	29.03	29.98	30.97	32.00	33.06	34.17	35.32	36.52	37.76	39.06	40.40	41.80	43.00	44.56	46.17	47.86	49.60	51.55	53.43	55.39	57.41	59.52
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		203.45	204.06	204.86	205.87	207.11	208.58	210.29	212.26	214.49	217.01	219.83	222.95	226.41	230.21	234.37	222.10	230.52	239.35	248.62	258.36	278.08	288.82	300.08	311.92	324.34

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.56	6.40	6.63	6.85	7.09	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.95	10.30	10.65	11.02	11.40	11.79	12.20	12.62	13.06	13.51	13.97	14.46
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.75	0.78	0.80	0.84	0.87	0.90	0.93	0.96
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.13	9.70	9.93	10.17	10.43	10.69	10.97	11.26	11.56	11.88	12.21	12.55	12.91	13.29	13.68	14.10	14.25	14.76	15.28	15.82	16.39	17.13	17.74	18.37	19.03	19.71

Variable Cost (Rs/Unit)	6.40
Levllised Tariff (Fixed) (Rs/Unit)	3.57
Levelised Tariff(Rs/Unit)	9.98

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAIT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelised (Rs./Unit)		9.05																								
Electricity Generation (Levelised) (Rs./Unit)		5.89																								
Levelised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		391.27	404.77	418.74	433.18	448.13	463.59	479.58	496.13	513.24	530.95	549.27	568.22	587.82	608.10	629.08	650.78	673.24	696.46	720.49	745.35	771.06	797.66	825.18	853.65	883.10
Per unit Variable Cost	Rs/kWh		6.34	6.56	6.79	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.53	9.85	10.19	10.55	10.91	11.29	11.67	12.08	12.49	12.93	13.37	13.83	14.31

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.17	27.01	27.88	28.79	29.73	30.71	31.72	32.78	33.88	35.02	36.21	37.44	38.72	40.05	41.44	42.63	44.17	45.78	47.45	49.18	51.12	52.98	54.92	56.93	59.02
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		203.23	203.83	204.62	205.63	206.85	208.31	210.02	211.97	214.20	216.71	219.51	222.63	226.08	229.86	234.01	221.73	230.13	238.95	248.21	257.93	277.65	288.36	299.62	311.43	323.84

Levelling tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.47	6.34	6.56	6.79	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.53	9.85	10.19	10.55	10.91	11.29	11.67	12.08	12.49	12.93	13.37	13.83	14.31
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.96
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.04	9.63	9.86	10.10	10.35	10.61	10.89	11.17	11.47	11.79	12.12	12.46	12.82	13.19	13.58	13.99	14.14	14.64	15.16	15.70	16.26	16.99	17.60	18.23	18.88	19.56

Variable Cost (Rs/Unit)	6.34
Levilled Tariff (Fixed) (Rs/Unit)	3.57
Levilled Tariff(Rs/Unit)	9.91

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAIT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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%	0.00%
Book Depreciation	Rs Lakh	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levellised (Rs./Unit)	9.05
Electricity Generation (Levillised) (Rs./Unit)	5.89
Levilled benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	Rs/kWh		6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.53	27.38	28.27	29.19	30.14	31.13	32.17	33.24	34.35	35.51	36.71	37.96	39.26	40.61	42.02	43.23	44.79	46.42	48.11	49.87	51.83	53.72	55.68	57.72	59.83
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		203.59	204.20	205.01	206.03	207.27	208.74	210.46	212.43	214.67	217.20	220.02	223.16	226.62	230.42	234.59	222.33	230.75	239.60	248.88	258.62	278.36	289.10	300.38	312.22	324.65

Levilled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.61	6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.56	0.58	0.59	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.19	9.74	9.98	10.22	10.47	10.74	11.02	11.31	11.61	11.93	12.27	12.61	12.98	13.36	13.75	14.16	14.32	14.83	15.36	15.90	16.47	17.21	17.82	18.46	19.12	19.81

Variable Cost (Rs/Unit)	6.45
Levilled Tariff (Fixed) (Rs/Unit)	3.58
Levilled Tariff(Rs/Unit)	10.02

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levilised (Rs./Unit)		9.05																								
Electricity Generation (Levillised) (Rs./Unit)		5.89																								
Levillised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		404.75	418.72	433.16	448.11	463.57	479.56	496.11	513.22	530.93	549.24	568.19	587.80	608.08	629.05	650.76	673.21	696.43	720.46	745.32	771.03	797.63	825.15	853.62	883.07	913.53
Per unit Variable Cost	Rs/kWh		6.56	6.78	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		26.92	27.79	28.68	29.62	30.59	31.59	32.64	33.73	34.86	36.04	37.26	38.53	39.85	41.22	42.64	43.87	45.46	47.11	48.83	50.61	52.59	54.51	56.50	58.56	60.71
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	44.22	44.22	44.22	44.22	44.22
Total Fixed Cost	Rs Lakh		203.98	204.60	205.42	206.46	207.71	209.20	210.94	212.92	215.18	217.73	220.57	223.72	227.20	231.03	235.22	222.98	231.42	240.29	249.59	259.36	279.12	289.89	301.20	313.07	325.53

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.76	6.56	6.78	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.58	0.44	0.45	0.46	0.48	0.50	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.98
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.35	9.86	10.10	10.35	10.61	10.88	11.16	11.46	11.77	12.09	12.43	12.78	13.15	13.53	13.94	14.36	14.52	15.04	15.57	16.12	16.70	17.45	18.07	18.71	19.38	20.08

Variable Cost (Rs/Unit)	6.56
Levelised Tariff (Fixed) (Rs/Unit)	3.58
Levelised Tariff(Rs/Unit)	10.14

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelised (Rs./Unit)		9.05																								
Electricity Generation (Levelised) (Rs./Unit)		5.89																								
Levelised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	685
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	685
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	479
			Total Equity Amount	Rs Lacs	205
		<u>Debt Component</u>	Loan Amount	Rs Lacs	479
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	205
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		425.43	440.10	455.29	470.99	487.24	504.05	521.44	539.43	558.04	577.30	597.21	617.82	639.13	661.18	683.99	707.59	732.00	757.26	783.38	810.41	838.37	867.29	897.21	928.17	960.19
Per unit Variable Cost	Rs/kWh		6.89	7.13	7.38	7.63	7.90	8.17	8.45	8.74	9.04	9.35	9.68	10.01	10.36	10.71	11.08	11.47	11.86	12.27	12.69	13.13	13.59	14.05	14.54	15.04	15.56

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97	31.97
Interest on term loan	Rs Lakh		49.63	46.21	42.79	39.37	35.94	32.52	29.10	25.67	22.25	18.83	15.40	11.98	8.56	5.13	1.71	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		28.07	28.98	29.92	30.89	31.90	32.96	34.05	35.19	36.37	37.60	38.87	40.20	41.58	43.01	44.49	45.79	47.44	49.16	50.95	52.80	54.86	56.86	58.93	61.07	63.30
Return on Equity	Rs Lakh		34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86	34.86
Total Fixed Cost	Rs Lakh		205.13	205.79	206.66	207.73	209.03	210.57	212.34	214.38	216.69	219.29	222.18	225.39	228.93	232.82	237.07	224.89	233.40	242.34	251.71	261.55	281.39	292.24	303.62	315.58	328.13

Levelised tariff corresponding to Useful life

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	
Per unit Variable Cost	Rs/kWh	9.21	6.89	7.13	7.38	7.63	7.90	8.17	8.45	8.74	9.04	9.35	9.68	10.01	10.36	10.71	11.08	11.47	11.86	12.27	12.69	13.13	13.59	14.05	14.54	15.04	15.56
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.47	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.64	0.58	0.53	0.47	0.42	0.36	0.31	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.60	0.45	0.47	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.70	0.72	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.95	0.99	1.03
RoE	Rs/kWh	0.58	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.72	0.72	0.72	0.72	0.72
Total COG	Rs/kWh	12.82	10.22	10.47	10.73	11.00	11.28	11.58	11.89	12.21	12.55	12.91	13.28	13.66	14.07	14.49	14.92	15.11	15.64	16.20	16.77	17.37	18.14	18.79	19.46	20.15	20.88

Variable Cost (Rs/Unit)	6.89
Levelised Tariff (Fixed) (Rs/Unit)	3.61
Levelised Tariff(Rs/Unit)	10.50

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	685.00

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	18.08	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	36.17	19.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	205.50	239.75	95.90	57.54	34.52	20.71	12.43	7.46	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	187.42	203.58	59.73	21.37	-1.64	-15.45	-23.74	-28.71	-31.69	-33.48	-34.56	-35.20	-35.59	-35.82	-35.96	-36.04	-36.09	-19.68	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	65.49	71.14	20.87	7.47	-0.57	-5.40	-8.30	-10.03	-11.08	-11.70	-12.08	-12.30	-12.44	-12.52	-12.57	-12.59	-12.61	-6.88	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.12	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levelised (Rs./Unit)	9.05
Electricity Generation (Levelised) (Rs./Unit)	5.89
Levelised benefit (Rs./Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	Rs/kWh		6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.57	27.41	28.30	29.22	30.17	31.16	32.19	33.26	34.38	35.53	36.74	37.99	39.28	40.63	42.04	43.24	44.81	46.43	48.12	49.88	51.84	53.73	55.69	57.73	59.85
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	45.00	45.00	45.00	45.00	45.00
Total Fixed Cost	Rs Lakh		205.66	206.21	206.96	207.92	209.10	210.51	212.16	214.08	216.26	218.72	221.48	224.56	227.96	231.70	235.81	239.20	243.62	248.46	253.74	259.49	279.39	290.13	301.41	313.25	325.69

Levelled tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.42	6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.91	0.95
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	11.94	9.56	9.79	10.02	10.27	10.53	10.80	11.09	11.38	11.69	12.02	12.36	12.71	13.08	13.47	13.87	14.02	14.51	15.03	15.56	16.12	16.85	17.44	18.07	18.71	19.38

Variable Cost (Rs/Unit)	6.30
Levelled Tariff (Fixed) (Rs/Unit)	3.52
Levelled Tariff(Rs/Unit)	9.82

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelled (Rs./Unit)		9.21																								
Electricity Generation (Levelled) (Rs./Unit)		6.03																								
Levelled benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		452.79	468.41	484.57	501.29	518.58	536.47	554.98	574.13	593.94	614.43	635.63	657.55	680.24	703.71	727.99	753.10	779.08	805.96	833.77	862.53	892.29	923.07	954.92	987.87	1,021.95
Per unit Variable Cost	Rs/kWh		7.17	7.42	7.68	7.94	8.22	8.50	8.79	9.10	9.41	9.74	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.67	14.14	14.63	15.13	15.65	16.19

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		29.63	30.58	31.57	32.60	33.68	34.79	35.94	37.14	38.39	39.69	41.03	42.43	43.88	45.39	46.96	48.33	50.08	51.88	53.76	55.71	57.88	59.97	62.15	64.41	66.76
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		208.72	209.38	210.23	211.31	212.60	214.14	215.92	217.96	220.27	222.88	225.78	229.00	232.56	236.46	240.73	228.29	236.89	245.91	255.38	265.32	285.42	296.37	307.86	319.93	332.60

Levilled tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Per unit Variable Cost	Rs/kWh	9.59	7.17	7.42	7.68	7.94	8.22	8.50	8.79	9.10	9.41	9.74	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.67	14.14	14.63	15.13	15.65	16.19
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.62	0.47	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.70	0.72	0.74	0.77	0.79	0.82	0.85	0.88	0.92	0.95	0.98	1.02	1.06
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	13.17	10.48	10.74	11.01	11.29	11.58	11.89	12.21	12.55	12.90	13.27	13.65	14.05	14.46	14.90	15.35	15.55	16.10	16.67	17.26	17.87	18.66	19.32	20.01	20.72	21.46

Variable Cost (Rs/Unit)	7.17
Levilled Tariff (Fixed) (Rs/Unit)	3.59
Levilled Tariff(Rs/Unit)	10.76

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levilled (Rs /Unit)		9.21																								
Electricity Generation (Levilled) (Rs /Unit)		6.03																								
Levilled benefit (Rs /Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		463.08	479.05	495.58	512.68	530.36	548.66	567.59	587.17	607.43	628.39	650.06	672.49	695.69	719.69	744.52	770.21	796.78	824.27	852.71	882.13	912.56	944.04	976.61	1,010.31	1,045.16
Per unit Variable Cost	Rs/kWh		7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.65	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		30.20	31.17	32.19	33.24	34.33	35.47	36.65	37.87	39.14	40.46	41.84	43.26	44.74	46.28	47.88	49.28	51.06	52.90	54.82	56.80	59.00	61.14	63.36	65.66	68.05
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		209.30	209.97	210.85	211.94	213.26	214.81	216.62	218.68	221.03	223.65	226.59	229.83	233.42	237.35	241.65	229.24	237.87	246.93	256.43	266.41	286.55	297.54	309.07	321.18	333.89

Levellers tariff corresponding to Useful life

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	
Per unit Variable Cost	Rs/kWh	9.80	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.65	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.63	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.69	0.71	0.73	0.76	0.78	0.81	0.84	0.87	0.90	0.93	0.97	1.00	1.04	1.08
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	13.40	10.65	10.92	11.19	11.48	11.78	12.10	12.43	12.77	13.13	13.50	13.89	14.30	14.72	15.16	15.63	15.84	16.39	16.97	17.57	18.20	19.00	19.67	20.37	21.10	21.85

Variable Cost (Rs/Unit)	7.34
Levellers Tariff (Fixed) (Rs/Unit)	3.60
Levellers Tariff(Rs/Unit)	10.94

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	316	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellers (Rs./Unit)		9.21																								
Electricity Generation (Levellers) (Rs./Unit)		6.03																								
Levellers benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		473.56	489.90	506.80	524.29	542.37	561.09	580.44	600.47	621.18	642.61	664.78	687.72	711.45	735.99	761.38	787.65	814.82	842.94	872.02	902.10	933.22	965.42	998.73	1,033.18	1,068.83
Per unit Variable Cost	Rs/kWh		7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.82	16.37	16.93
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		30.78	31.78	32.81	33.88	35.00	36.16	37.36	38.61	39.91	41.26	42.66	44.11	45.62	47.19	48.82	50.25	52.06	53.94	55.89	57.91	60.15	62.33	64.59	66.93	69.36
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	45.00	45.00	45.00	45.00	45.00
Total Fixed Cost	Rs Lakh		209.88	210.57	211.47	212.59	213.93	215.51	217.33	219.42	221.79	224.45	227.40	230.68	234.29	238.26	242.59	230.21	238.88	247.97	257.51	267.52	287.70	298.73	310.30	322.45	335.20

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	10.03	7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.82	16.37	16.93
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.65	0.49	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.75	0.77	0.80	0.82	0.85	0.89	0.92	0.95	0.99	1.02	1.06	1.10
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	13.64	10.83	11.10	11.38	11.68	11.98	12.30	12.64	12.99	13.36	13.74	14.14	14.55	14.98	15.44	15.91	16.13	16.69	17.28	17.90	18.53	19.34	20.03	20.74	21.48	22.25

Variable Cost (Rs/Unit)	7.50
Levillised Tariff (Fixed) (Rs/Unit)	3.61
Levillised Tariff(Rs/Unit)	11.11

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)		9.21																								
Electricity Generation (Levellised) (Rs./Unit)		6.03																								
Levellised benefit (Rs./Unit)		0.15																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		395.27	408.90	423.01	437.60	452.70	468.32	484.48	501.19	518.48	536.37	554.88	574.02	593.82	614.31	635.50	657.43	680.11	703.57	727.85	752.96	778.93	805.81	833.61	862.37	892.12
Per unit Variable Cost	Rs/kWh		6.26	6.48	6.70	6.93	7.17	7.42	7.68	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.66	14.13
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.43	27.27	28.15	29.06	30.01	31.00	32.02	33.09	34.19	35.34	36.54	37.78	39.08	40.42	41.81	43.01	44.57	46.19	47.87	49.61	51.57	53.45	55.40	57.43	59.53
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		205.52	206.07	206.81	207.76	208.94	210.34	211.99	213.90	216.08	218.53	221.29	224.36	227.75	231.49	235.59	222.97	231.38	240.21	249.49	259.22	279.11	289.85	301.11	312.95	325.37

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.37	6.26	6.48	6.70	6.93	7.17	7.42	7.68	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.42	10.78	11.15	11.53	11.93	12.34	12.77	13.21	13.66	14.13
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.55	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.94
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	11.89	9.52	9.74	9.98	10.23	10.48	10.75	11.03	11.33	11.64	11.96	12.30	12.65	13.02	13.40	13.80	13.95	14.44	14.95	15.48	16.04	16.76	17.36	17.98	18.62	19.29

Variable Cost (Rs/Unit)	6.26
Levillised Tariff (Fixed) (Rs/Unit)	3.52
Levillised Tariff(Rs/Unit)	9.78

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised (Rs./Unit)	9.21																										
Electricity Generation (Levillised) (Rs./Unit)	6.03																										
Levillised benefit (Rs./Unit)	0.15																										



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		391.27	404.77	418.74	433.18	448.13	463.59	479.58	496.13	513.24	530.95	549.27	568.22	587.82	608.10	629.08	650.78	673.24	696.46	720.49	745.35	771.06	797.66	825.18	853.65	883.10
Per unit Variable Cost	Rs/kWh		6.20	6.41	6.63	6.86	7.10	7.35	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.42	11.81	12.22	12.64	13.07	13.53	13.99
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.20	27.04	27.91	28.82	29.76	30.73	31.75	32.80	33.90	35.04	36.23	37.46	38.74	40.07	41.46	42.64	44.19	45.79	47.46	49.19	51.13	53.00	54.93	56.94	59.03
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		205.30	205.84	206.57	207.52	208.68	210.08	211.72	213.62	215.78	218.23	220.98	224.03	227.42	231.14	235.23	222.60	231.00	239.82	249.08	258.80	278.68	289.39	300.65	312.46	324.87

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.28	6.20	6.41	6.63	6.86	7.10	7.35	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.42	11.81	12.22	12.64	13.07	13.53	13.99
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.55	0.42	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.56	0.57	0.59	0.61	0.63	0.66	0.68	0.70	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	11.80	9.45	9.67	9.91	10.15	10.41	10.67	10.95	11.25	11.55	11.87	12.20	12.55	12.92	13.30	13.69	13.84	14.33	14.83	15.36	15.91	16.63	17.22	17.84	18.48	19.14

Variable Cost (Rs/Unit)	6.20
Levillised Tariff (Fixed) (Rs/Unit)	3.51
Levillised Tariff(Rs/Unit)	9.71

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.21																									
Electricity Generation (Levellised) (Rs./Unit)	6.03																									
Levellised benefit (Rs./Unit)	0.15																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	Rs/kWh		6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.57	27.41	28.30	29.22	30.17	31.16	32.19	33.26	34.38	35.53	36.74	37.99	39.28	40.63	42.04	43.24	44.81	46.43	48.12	49.88	51.84	53.73	55.69	57.73	59.85
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		205.66	206.21	206.96	207.92	209.10	210.51	212.16	214.08	216.26	218.72	221.48	224.56	227.96	231.70	235.81	239.20	243.04	247.44	251.44	255.99	260.13	264.85	269.13	273.99	279.39

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.42	6.30	6.52	6.74	6.98	7.22	7.47	7.72	7.99	8.27	8.55	8.85	9.15	9.47	9.79	10.13	10.48	10.84	11.22	11.60	12.01	12.42	12.85	13.29	13.75	14.22
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.91	0.95
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	11.94	9.56	9.79	10.02	10.27	10.53	10.80	11.09	11.38	11.69	12.02	12.36	12.71	13.08	13.47	13.87	14.02	14.51	15.03	15.56	16.12	16.85	17.44	18.07	18.71	19.38

Variable Cost (Rs/Unit)	6.30
Levillised Tariff (Fixed) (Rs/Unit)	3.52
Levillised Tariff(Rs/Unit)	9.82

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAIT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.21																									
Electricity Generation (Levellised) (Rs./Unit)	6.03																									
Levellised benefit (Rs./Unit)	0.15																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		404.75	418.72	433.16	448.11	463.57	479.56	496.11	513.22	530.93	549.24	568.19	587.80	608.08	629.05	650.76	673.21	696.43	720.46	745.32	771.03	797.63	825.15	853.62	883.07	913.53
Per unit Variable Cost	Rs/kWh		6.41	6.63	6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		26.95	27.82	28.71	29.65	30.61	31.62	32.67	33.76	34.89	36.06	37.28	38.55	39.87	41.24	42.66	43.89	45.48	47.13	48.84	50.62	52.61	54.53	56.51	58.58	60.72
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	45.00	45.00	45.00	45.00	45.00
Total Fixed Cost	Rs Lakh		206.05	206.61	207.37	208.35	209.54	210.97	212.64	214.57	216.77	219.25	222.03	225.12	228.54	232.31	236.44	223.84	232.29	241.15	250.46	260.23	280.15	290.92	302.23	314.10	326.56

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.57	6.41	6.63	6.86	7.10	7.34	7.60	7.86	8.13	8.41	8.70	9.00	9.31	9.63	9.97	10.31	10.67	11.03	11.41	11.81	12.22	12.64	13.07	13.52	13.99	14.47
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.43	0.44	0.45	0.47	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.75	0.77	0.80	0.83	0.86	0.90	0.93	0.96
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	12.10	9.68	9.91	10.15	10.40	10.66	10.94	11.23	11.53	11.85	12.18	12.52	12.88	13.26	13.65	14.06	14.21	14.71	15.24	15.78	16.34	17.08	17.68	18.31	18.97	19.65

Variable Cost (Rs/Unit)	6.41
Levelised Tariff (Fixed) (Rs/Unit)	3.53
Levelised Tariff(Rs/Unit)	9.94

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation

Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	209.10	243.95	97.58	58.55	35.13	21.08	12.65	7.59	4.55	2.73	1.64	0.98	0.59	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	190.70	207.15	60.78	21.75	-1.67	-15.72	-24.16	-29.21	-32.25	-34.07	-35.16	-35.82	-36.21	-36.45	-36.59	-36.67	-36.73	-20.03	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	66.64	72.39	21.24	7.60	-0.58	-5.49	-8.44	-10.21	-11.27	-11.91	-12.29	-12.52	-12.65	-12.74	-12.79	-12.82	-12.83	-7.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.16	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	6.31	6.31	6.31	6.31	6.31
Per unit benefit	Rs/Unit	2.11	1.15	0.34	0.12	-0.01	-0.09	-0.13	-0.16	-0.18	-0.19	-0.19	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20	-0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levelised (Rs /Unit)	9.21
Electricity Generation (Levelised) (Rs /Unit)	6.03
Levelised benefit (Rs /Unit)	0.15



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	697
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	697
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	488
			Total Equity Amount	Rs Lacs	209
		<u>Debt Component</u>	Loan Amount	Rs Lacs	488
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	209
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		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	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	21	22	23	24	25
Biomass Cost	Rs. Lakh		425.43	440.10	455.29	470.99	487.24	504.05	521.44	539.43	558.04	577.30	597.21	617.82	639.13	661.18	683.99	707.59	732.00	757.26	783.38	810.41	838.37	867.29	897.21	928.17	960.19
Per unit Variable Cost	Rs/kWh		6.74	6.97	7.21	7.46	7.72	7.99	8.26	8.55	8.84	9.15	9.46	9.79	10.13	10.48	10.84	11.21	11.60	12.00	12.41	12.84	13.28	13.74	14.22	14.71	15.21

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53	32.53
Interest on term loan	Rs Lakh		50.50	47.02	43.54	40.06	36.57	33.09	29.61	26.12	22.64	19.16	15.67	12.19	8.71	5.22	1.74	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		28.11	29.01	29.94	30.92	31.93	32.98	34.08	35.21	36.39	37.62	38.90	40.22	41.60	43.03	44.51	45.80	47.46	49.17	50.96	52.81	54.88	56.87	58.94	61.09	63.32
Return on Equity	Rs Lakh		35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47	35.47
Total Fixed Cost	Rs Lakh		207.20	207.80	208.60	209.62	210.86	212.33	214.05	216.03	218.28	220.81	223.64	226.79	230.27	234.10	238.29	242.76	247.59	252.58	257.84	263.37	269.18	275.27	281.64	288.30	295.26

Levelling tariff corresponding to Useful life

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	
Per unit Variable Cost	Rs/kWh	9.01	6.74	6.97	7.21	7.46	7.72	7.99	8.26	8.55	8.84	9.15	9.46	9.79	10.13	10.48	10.84	11.21	11.60	12.00	12.41	12.84	13.28	13.74	14.22	14.71	15.21
O&M expn	Rs/kWh	1.52	0.96	1.01	1.06	1.12	1.18	1.24	1.31	1.37	1.45	1.52	1.60	1.69	1.77	1.87	1.97	2.07	2.18	2.29	2.41	2.54	2.67	2.81	2.96	3.11	3.28
Depreciation	Rs/kWh	0.46	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh	0.41	0.80	0.75	0.69	0.63	0.58	0.52	0.47	0.41	0.36	0.30	0.25	0.19	0.14	0.08	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.59	0.45	0.46	0.47	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.93	0.97	1.00
RoE	Rs/kWh	0.57	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.71	0.71	0.71	0.71	0.71
Total COG	Rs/kWh	12.56	10.02	10.27	10.52	10.78	11.06	11.35	11.65	11.97	12.30	12.65	13.01	13.38	13.77	14.18	14.61	14.79	15.31	15.85	16.41	17.00	17.76	18.39	19.04	19.72	20.43

Variable Cost (Rs/Unit)	6.74
Levelling Tariff (Fixed) (Rs/Unit)	3.55
Levelling Tariff(Rs/Unit)	10.29

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	697.00

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	18.40	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	36.80	20.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Tax Benefit Levellised (Rs./Unit)	9.21
Electricity Generation (Levellised) (Rs./Unit)	6.03
Levellised benefit (Rs./Unit)	0.15

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	Rs/kWh		6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		26.69	27.53	28.41	29.33	30.28	31.26	32.29	33.36	34.47	35.62	36.82	38.07	39.36	40.71	42.11	43.29	44.86	46.49	48.17	49.93	51.90	53.79	55.75	57.79	59.91
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86
Total Fixed Cost	Rs Lakh		213.77	214.08	214.59	215.31	216.25	217.43	218.85	220.52	222.46	224.69	227.21	230.05	233.21	236.72	240.58	226.58	235.00	243.84	253.12	262.87	283.42	294.16	305.44	317.28	329.72

Levelised tariff corresponding to Useful life

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	
Per unit Variable Cost	Rs/kWh	8.61	6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.45	0.46	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.32	9.91	10.14	10.38	10.62	10.89	11.16	11.45	11.75	12.06	12.39	12.73	13.09	13.46	13.85	14.26	14.39	14.90	15.42	15.97	16.54	17.29	17.91	18.54	19.20	19.89

Variable Cost (Rs/Unit)	6.45
Levelised Tariff (Fixed) (Rs/Unit)	3.70
Levelised Tariff(Rs/Unit)	10.15

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Tax Benefit Levelised (Rs./Unit)	9.83
Electricity Generation (Levelised) (Rs./Unit)	5.89
Levelised benefit (Rs./Unit)	0.17



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4852.24
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		452.79	468.41	484.57	501.29	518.58	536.47	554.98	574.13	593.94	614.43	635.63	657.55	680.24	703.71	727.99	753.10	779.08	805.96	833.77	862.53	892.29	923.07	954.92	987.87	1,021.95
Per unit Variable Cost	Rs/kWh		7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.66	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		29.75	30.70	31.69	32.72	33.78	34.89	36.04	37.24	38.48	39.78	41.12	42.51	43.96	45.47	47.03	48.38	50.13	51.94	53.81	55.76	57.94	60.03	62.21	64.47	66.82
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		216.84	217.25	217.87	218.70	219.76	221.06	222.60	224.40	226.48	228.84	231.51	234.49	237.81	241.47	245.51	231.67	240.27	249.29	258.76	268.70	289.46	300.41	311.90	323.96	336.63

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.80	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.96	10.30	10.66	11.02	11.40	11.80	12.20	12.62	13.06	13.51	13.98	14.46	14.96	15.47	16.01	16.56
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.64	0.48	0.50	0.51	0.53	0.55	0.57	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.74	0.76	0.78	0.81	0.84	0.87	0.90	0.94	0.97	1.01	1.04	1.08
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	13.57	10.85	11.11	11.38	11.67	11.96	12.28	12.60	12.94	13.29	13.66	14.05	14.45	14.88	15.32	15.77	15.96	16.52	17.10	17.70	18.33	19.15	19.83	20.53	21.26	22.01

Variable Cost (Rs/Unit)	7.34
Levillised Tariff (Fixed) (Rs/Unit)	3.77
Levillised Tariff(Rs/Unit)	11.11

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levillised (Rs./Unit)	9.83																									
Electricity Generation (Levillised) (Rs./Unit)	5.89																									
Levillised benefit (Rs./Unit)	0.17																									

Assumption for Biomass Based Rankine Cycle Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4962.47
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		463.08	479.05	495.58	512.68	530.36	548.66	567.59	587.17	607.43	628.39	650.06	672.49	695.69	719.69	744.52	770.21	796.78	824.27	852.71	882.13	912.56	944.04	976.61	1,010.31	1,045.16
Per unit Variable Cost	Rs/kWh		7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.83	16.37	16.94
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		30.32	31.29	32.30	33.35	34.44	35.57	36.75	37.97	39.24	40.55	41.92	43.34	44.82	46.36	47.95	49.33	51.11	52.95	54.87	56.85	59.06	61.20	63.42	65.72	68.11
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86
Total Fixed Cost	Rs Lakh		217.41	217.84	218.48	219.34	220.42	221.73	223.30	225.13	227.23	229.62	232.31	235.32	238.67	242.36	246.43	232.62	241.25	250.31	259.82	269.79	290.58	301.57	313.11	325.21	337.92

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	10.03	7.50	7.76	8.03	8.31	8.59	8.89	9.20	9.51	9.84	10.18	10.53	10.90	11.27	11.66	12.06	12.48	12.91	13.36	13.82	14.29	14.79	15.30	15.83	16.37	16.94
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.65	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.80	0.83	0.86	0.89	0.92	0.96	0.99	1.03	1.06	1.10
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	13.81	11.03	11.29	11.57	11.86	12.17	12.48	12.82	13.16	13.52	13.90	14.30	14.71	15.14	15.59	16.06	16.25	16.82	17.41	18.03	18.67	19.50	20.18	20.90	21.64	22.41

Variable Cost (Rs/Unit)	7.50
Levillised Tariff (Fixed) (Rs/Unit)	3.78
Levillised Tariff(Rs/Unit)	11.29

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.83																									
Electricity Generation (Levellised) (Rs./Unit)	5.89																									
Levellised benefit (Rs./Unit)	0.17																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	5074.84
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		473.56	489.90	506.80	524.29	542.37	561.09	580.44	600.47	621.18	642.61	664.78	687.72	711.45	735.99	761.38	787.65	814.82	842.94	872.02	902.10	933.22	965.42	998.73	1,033.18	1,068.83
Per unit Variable Cost	Rs/kWh		7.67	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.41	10.77	11.14	11.53	11.93	12.34	12.76	13.20	13.66	14.13	14.62	15.12	15.64	16.18	16.74	17.32

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		30.90	31.90	32.93	33.99	35.11	36.26	37.46	38.71	40.00	41.34	42.74	44.19	45.70	47.26	48.89	50.30	52.11	53.99	55.94	57.96	60.21	62.39	64.65	66.99	69.43
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86
Total Fixed Cost	Rs Lakh		217.99	218.45	219.11	219.98	221.08	222.42	224.02	225.87	228.00	230.41	233.13	236.17	239.55	243.27	247.37	233.59	242.26	251.35	260.89	270.90	291.73	302.76	314.34	326.49	339.24

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	10.25	7.67	7.94	8.21	8.50	8.79	9.09	9.41	9.73	10.07	10.41	10.77	11.14	11.53	11.93	12.34	12.76	13.20	13.66	14.13	14.62	15.12	15.64	16.18	16.74	17.32
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.66	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.77	0.79	0.82	0.84	0.87	0.91	0.94	0.98	1.01	1.05	1.09	1.12
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	14.05	11.21	11.48	11.76	12.06	12.37	12.70	13.04	13.39	13.76	14.15	14.55	14.97	15.41	15.87	16.35	16.55	17.13	17.73	18.36	19.01	19.85	20.55	21.28	22.03	22.82

Variable Cost (Rs/Unit)	7.67
Levillised Tariff (Fixed) (Rs/Unit)	3.79
Levillised Tariff(Rs/Unit)	11.47

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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%
Rs Lakh	Book Depreciation	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.00%	35.00%	21.00%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13

Tax Benefit Levillised (Rs./Unit)	9.83
Electricity Generation (Levillised) (Rs./Unit)	5.89
Levillised benefit (Rs./Unit)	0.17



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4235.81
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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	MJ		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		395.27	408.90	423.01	437.60	452.70	468.32	484.48	501.19	518.48	536.37	554.88	574.02	593.82	614.31	635.50	657.43	680.11	703.57	727.85	752.96	778.93	805.81	833.61	862.37	892.12
Per unit Variable Cost	Rs/kWh		6.40	6.63	6.85	7.09	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.95	10.30	10.65	11.02	11.40	11.79	12.20	12.62	13.06	13.51	13.97	14.46
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		26.55	27.39	28.26	29.17	30.12	31.10	32.12	33.18	34.29	35.43	36.63	37.87	39.15	40.49	41.88	43.06	44.62	46.24	47.92	49.66	51.63	53.51	55.46	57.49	59.59
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		213.64	213.94	214.44	215.16	216.10	217.26	218.68	220.34	222.28	224.50	227.02	229.85	233.00	236.50	240.36	226.35	234.76	243.59	252.87	262.60	283.15	293.88	305.15	316.98	329.41

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.56	6.40	6.63	6.85	7.09	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.62	9.95	10.30	10.65	11.02	11.40	11.79	12.20	12.62	13.06	13.51	13.97	14.46
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.56	0.57	0.59	0.61	0.63	0.66	0.68	0.70	0.72	0.75	0.78	0.80	0.84	0.87	0.90	0.93	0.97
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.26	9.87	10.09	10.33	10.58	10.84	11.11	11.39	11.69	12.00	12.33	12.67	13.03	13.40	13.79	14.19	14.32	14.82	15.35	15.89	16.46	17.21	17.82	18.45	19.11	19.79

Variable Cost (Rs/Unit)	6.40
Levillised Tariff (Fixed) (Rs/Unit)	3.70
Levillised Tariff(Rs/Unit)	10.10

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.10
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.11

Tax Benefit Levillised (Rs./Unit)	9.83
Electricity Generation (Levillised) (Rs./Unit)	5.89
Levillised benefit (Rs./Unit)	0.17



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4193.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		391.27	404.77	418.74	433.18	448.13	463.59	479.58	496.13	513.24	530.95	549.27	568.22	587.82	608.10	629.08	650.78	673.24	696.46	720.49	745.35	771.06	797.66	825.18	853.65	883.10
Per unit Variable Cost	Rs/kWh		6.34	6.56	6.79	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.53	9.85	10.19	10.55	10.91	11.29	11.67	12.08	12.49	12.93	13.37	13.83	14.31
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		26.33	27.16	28.03	28.93	29.86	30.84	31.85	32.90	33.99	35.13	36.31	37.54	38.82	40.15	41.53	42.69	44.24	45.84	47.51	49.24	51.19	53.06	54.99	57.00	59.09
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		213.41	213.71	214.21	214.91	215.84	217.00	218.40	220.06	221.99	224.20	226.70	229.52	232.67	236.16	240.00	225.98	234.38	243.20	252.46	262.18	282.71	293.43	304.68	316.50	328.90

Levillised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.47	6.34	6.56	6.79	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.53	9.85	10.19	10.55	10.91	11.29	11.67	12.08	12.49	12.93	13.37	13.83	14.31
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.56	0.43	0.44	0.45	0.47	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.72	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.96
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.17	9.80	10.02	10.26	10.50	10.76	11.03	11.31	11.61	11.91	12.24	12.57	12.93	13.30	13.68	14.08	14.21	14.71	15.23	15.77	16.33	17.08	17.68	18.31	18.96	19.64

Variable Cost (Rs/Unit)	6.34
Levillised Tariff (Fixed) (Rs/Unit)	3.69
Levillised Tariff(Rs/Unit)	10.04

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAIT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levillised (Rs/Unit)		9.83																								
Electricity Generation (Levillised) (Rs./Unit)		5.89																								
Levillised benefit (Rs./Unit)		0.17																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4262.57
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		397.76	411.49	425.68	440.37	455.56	471.28	487.54	504.36	521.76	539.76	558.38	577.64	597.57	618.19	639.52	661.58	684.40	708.02	732.44	757.71	783.85	810.90	838.87	867.81	897.75
Per unit Variable Cost	Rs/kWh		6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55

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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		26.69	27.53	28.41	29.33	30.28	31.26	32.29	33.36	34.47	35.62	36.82	38.07	39.36	40.71	42.11	43.29	44.86	46.49	48.17	49.93	51.90	53.79	55.75	57.79	59.91
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		213.77	214.08	214.59	215.31	216.25	217.43	218.85	220.52	222.46	224.69	227.21	230.05	233.21	236.72	240.58	226.58	235.00	243.84	253.12	262.87	283.42	294.16	305.44	317.28	329.72

Levellers tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.61	6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.45	8.75	9.05	9.36	9.68	10.02	10.36	10.72	11.09	11.47	11.87	12.28	12.70	13.14	13.59	14.06	14.55
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.57	0.43	0.45	0.46	0.48	0.49	0.51	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.73	0.75	0.78	0.81	0.84	0.87	0.90	0.94	0.97
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.32	9.91	10.14	10.38	10.62	10.89	11.16	11.45	11.75	12.06	12.39	12.73	13.09	13.46	13.85	14.26	14.39	14.90	15.42	15.97	16.54	17.29	17.91	18.54	19.20	19.89

Variable Cost (Rs/Unit)	6.45
Levellers Tariff (Fixed) (Rs/Unit)	3.70
Levellers Tariff (Rs/Unit)	10.15

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)	9.83																									
Electricity Generation (Levellised) (Rs./Unit)	5.89																									
Levellised benefit (Rs./Unit)	0.17																									



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4337.48
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		404.75	418.72	433.16	448.11	463.57	479.56	496.11	513.22	530.93	549.24	568.19	587.80	608.08	629.05	650.76	673.21	696.43	720.46	745.32	771.03	797.63	825.15	853.62	883.07	913.53
Per unit Variable Cost	Rs/kWh		6.56	6.78	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		27.08	27.94	28.83	29.76	30.72	31.72	32.77	33.85	34.98	36.15	37.37	38.63	39.95	41.31	42.73	43.94	45.53	47.18	48.89	50.67	52.67	54.59	56.58	58.64	60.78
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		214.16	214.49	215.01	215.74	216.70	217.89	219.32	221.01	222.97	225.22	227.76	230.61	233.79	237.32	241.21	227.23	235.67	244.53	253.84	263.61	284.19	294.96	306.26	318.13	330.60

Levellers tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.76	6.56	6.78	7.02	7.26	7.51	7.77	8.04	8.32	8.60	8.90	9.21	9.52	9.85	10.19	10.54	10.91	11.29	11.67	12.08	12.49	12.92	13.37	13.83	14.31	14.80
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.58	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.98
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.48	10.03	10.26	10.50	10.76	11.02	11.30	11.59	11.90	12.22	12.55	12.90	13.26	13.64	14.04	14.45	14.59	15.10	15.64	16.19	16.77	17.53	18.15	18.79	19.46	20.16

Variable Cost (Rs/Unit)	6.56
Levellers Tariff (Fixed) (Rs/Unit)	3.71
Levellers Tariff(Rs/Unit)	10.27

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised (Rs./Unit)		9.83																								
Electricity Generation (Levellers) (Rs./Unit)		5.89																								
Levellers benefit (Rs./Unit)		0.17																								



Assumption for Biomass Based Rankine Cycle Project Parameters				State	Others
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	80%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	744
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	744
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	521
			Total Equity Amount	Rs Lacs	223
		<u>Debt Component</u>	Loan Amount	Rs Lacs	521
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	223
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For Variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	4,125.00
			During Stabilization Period	Kcal/kWh	4,125.00
		Base Price	Base Price	Rs/MT	4559.01
		GCV-Biomass	GCV-Biomass	Kcal/kg	3,100.00
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	60.59
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for Biomass based Rankine cycle Project

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		6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biomass Cost	Rs. Lakh		425.43	440.10	455.29	470.99	487.24	504.05	521.44	539.43	558.04	577.30	597.21	617.82	639.13	661.18	683.99	707.59	732.00	757.26	783.38	810.41	838.37	867.29	897.21	928.17	960.19
Per unit Variable Cost	Rs/kWh		6.89	7.13	7.38	7.63	7.90	8.17	8.45	8.74	9.04	9.35	9.68	10.01	10.36	10.71	11.08	11.47	11.86	12.27	12.69	13.13	13.59	14.05	14.54	15.04	15.56
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		60.59	63.78	67.12	70.65	74.36	78.26	82.37	86.69	91.24	96.04	101.08	106.38	111.97	117.85	124.03	130.55	137.40	144.61	152.21	160.20	168.61	177.46	186.77	196.58	206.90
Depreciation	Rs Lakh		34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	34.72	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88	14.88
Interest on term loan	Rs Lakh		53.91	50.19	46.47	42.76	39.04	35.32	31.60	27.88	24.17	20.45	16.73	13.01	9.29	5.58	1.86	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		28.23	29.12	30.06	31.03	32.04	33.09	34.18	35.31	36.49	37.71	38.98	40.30	41.67	43.10	44.58	45.85	47.51	49.23	51.01	52.86	54.94	56.93	59.00	61.15	63.38
Return on Equity	Rs Lakh		37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	37.86	48.03	48.03	48.03	48.03	48.03
Total Fixed Cost	Rs Lakh		215.31	215.68	216.24	217.02	218.02	219.25	220.73	222.47	224.48	226.78	229.37	232.28	235.52	239.11	243.06	229.14	237.65	246.58	255.96	265.80	286.46	297.30	308.69	320.64	333.19

Levelised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	9.21	6.89	7.13	7.38	7.63	7.90	8.17	8.45	8.74	9.04	9.35	9.68	10.01	10.36	10.71	11.08	11.47	11.86	12.27	12.69	13.13	13.59	14.05	14.54	15.04	15.56
O&M expn	Rs/kWh	1.55	0.98	1.03	1.09	1.14	1.20	1.27	1.33	1.40	1.48	1.56	1.64	1.72	1.81	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03	3.19	3.35
Depreciation	Rs/kWh	0.51	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh	0.45	0.87	0.81	0.75	0.69	0.63	0.57	0.51	0.45	0.39	0.33	0.27	0.21	0.15	0.09	0.03	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.60	0.46	0.47	0.49	0.50	0.52	0.54	0.55	0.57	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.96	0.99	1.03
RoE	Rs/kWh	0.63	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.78	0.78	0.78	0.78	0.78
Total COG	Rs/kWh	12.95	10.38	10.63	10.88	11.15	11.43	11.72	12.03	12.35	12.68	13.03	13.39	13.78	14.17	14.59	15.02	15.18	15.71	16.27	16.84	17.44	18.23	18.87	19.54	20.24	20.96

Variable Cost (Rs/Unit)	6.89
Levllised Tariff (Fixed) (Rs/Unit)	3.74
Levelised Tariff(Rs/Unit)	10.63

Determination of Additional Depreciation for Biomass Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	744.00

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	19.64	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	39.28	21.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	223.20	260.40	104.16	62.50	37.50	22.50	13.50	8.10	4.86	2.92	1.75	1.05	0.63	0.38	0.23	0.14	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	203.56	221.12	64.88	23.21	-1.79	-16.78	-25.78	-31.18	-34.42	-36.37	-37.53	-38.23	-38.65	-38.91	-39.06	-39.15	-39.20	-21.38	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	71.13	77.27	22.67	8.11	-0.62	-5.87	-9.01	-10.90	-12.03	-12.71	-13.12	-13.36	-13.51	-13.60	-13.65	-13.68	-13.70	-7.47	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MJ	3.09	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17	6.17
Per unit benefit	Rs/Unit	2.31	1.25	0.37	0.13	-0.01	-0.10	-0.15	-0.18	-0.19	-0.21	-0.21	-0.22	-0.22	-0.22	-0.22	-0.22	-0.22	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levelised (Rs./Unit)		9.83																								
Electricity Generation (Levelised) (Rs./Unit)		5.89																								
Levelised benefit (Rs./Unit)		0.17																								



Assumption for Bagasse based Cogeneration Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	45%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	2406.86
		GCV	GCV-Bagasse	Kcal/kg	2,250
			Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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
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	3.61	3.61	3.61	3.61	3.61
Variable 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
Biomass Cost	Rs. Lakh		151.91	157.15	162.57	168.18	173.98	179.99	186.19	192.62	199.26	206.14	213.25	220.61	228.22	236.09	244.24	252.66	261.38	270.40	279.73	289.38	299.36	309.69	320.37	331.43	342.86
Per unit Variable Cost	Rs/kWh		4.21	4.35	4.50	4.66	4.82	4.99	5.16	5.34	5.52	5.71	5.91	6.11	6.32	6.54	6.77	7.00	7.24	7.49	7.75	8.02	8.29	8.58	8.88	9.18	9.50
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		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		11.29	11.62	11.95	12.30	12.67	13.05	13.45	13.86	14.29	14.74	15.21	15.70	16.21	16.74	17.29	17.66	18.31	18.97	19.67	20.39	21.25	22.03	22.84	23.68	24.55
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
Total Fixed Cost	Rs Lakh		138.86	138.05	137.35	136.75	136.27	135.91	135.67	135.56	135.58	135.76	136.08	136.56	137.22	138.04	139.06	126.48	130.74	135.22	139.92	144.87	157.86	163.31	169.04	175.06	181.39
Per unit Fixed Cost	Rs/kWh		3.85	3.82	3.81	3.79	3.78	3.77	3.76	3.76	3.76	3.76	3.77	3.78	3.80	3.82	3.85	3.50	3.62	3.75	3.88	4.01	4.37	4.52	4.68	4.85	5.03
Levallised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	5.62	4.21	4.35	4.50	4.66	4.82	4.99	5.16	5.34	5.52	5.71	5.91	6.11	6.32	6.54	6.77	7.00	7.24	7.49	7.75	8.02	8.29	8.58	8.88	9.18	9.50
O&M expn	Rs/kWh	1.40	0.89	0.93	0.98	1.03	1.09	1.15	1.21	1.27	1.34	1.41	1.48	1.56	1.64	1.73	1.82	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03
Depreciation	Rs/kWh	0.65	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Int. on term loan	Rs/kWh	0.58	1.13	1.05	0.97	0.89	0.82	0.74	0.66	0.58	0.51	0.43	0.35	0.27	0.19	0.12	0.04	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	0.40	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.40	0.41	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.59	0.61	0.63	0.66	0.68
RoE	Rs/kWh	0.81	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1.01	1.01	1.01	1.01	1.01
Total COG	Rs/kWh	9.47	8.06	8.18	8.31	8.45	8.60	8.75	8.92	9.09	9.28	9.47	9.68	9.90	10.12	10.37	10.62	10.50	10.86	11.24	11.63	12.03	12.67	13.10	13.56	14.03	14.52
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost		4.21																									
Levllised Tariff (Fixed)		3.85																									
Levllised Tariff	8.06	Rs/Unit																									

Determination of Additional Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	- 1.35	- 12.68	- 19.48	- 23.56	- 26.00	- 27.47	- 28.35	- 28.88	- 29.20	- 29.39	- 29.50	- 29.57	- 29.61	- 16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	- 0.47	- 4.43	- 6.81	- 8.23	- 9.09	- 9.60	- 9.91	- 10.09	- 10.20	- 10.27	- 10.31	- 10.33	- 10.35	- 5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	1.80	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61
Per unit benefit	Rs/Unit	2.98	1.62	0.47	0.17	- 0.01	- 0.12	- 0.19	- 0.23	- 0.25	- 0.27	- 0.27	- 0.28	- 0.28	- 0.28	- 0.29	- 0.29	- 0.29	- 0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised	7.42	Rs/Unit																								
Electricity Generation (Levllised)	3.45	Rs/Unit																								
Levllised benefit	0.22	Rs/Unit																								



Assumption for Bagasse based Cogeneration Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	53%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	3423.54
		GCV	GCV- Bagasse	Kcal/kg	2,250
			Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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
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	4.25	4.25	4.25	4.25
Variable 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
Biomass Cost	Rs. Lakh		254.49	263.27	272.35	281.75	291.47	301.53	311.93	322.69	333.82	345.34	357.25	369.58	382.33	395.52	409.17	423.28	437.89	452.99	468.62	484.79	501.51	518.82	536.71	555.23	574.39
Per unit Variable Cost	Rs/kWh		5.99	6.19	6.41	6.63	6.86	7.09	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.63	9.96	10.30	10.66	11.02	11.40	11.80	12.20	12.63	13.06	13.51
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		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		17.00	17.52	18.06	18.62	19.21	19.81	20.44	21.10	21.78	22.49	23.22	23.99	24.78	25.61	26.47	27.16	28.13	29.13	30.18	31.26	32.50	33.67	34.88	36.13	37.44
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
Total Fixed Cost	Rs Lakh		144.57	143.96	143.46	143.07	142.81	142.67	142.66	142.79	143.07	143.50	144.09	144.85	145.79	146.91	148.23	135.97	140.56	145.38	150.43	155.74	169.10	174.95	181.08	187.52	194.27
Per unit Fixed Cost	Rs/kWh		3.40	3.39	3.37	3.37	3.36	3.36	3.36	3.36	3.37	3.38	3.39	3.41	3.43	3.46	3.49	3.20	3.31	3.42	3.54	3.66	3.98	4.12	4.26	4.41	4.57

Levallised tariff corresponding to Useful life

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
Per unit Variable Cost	Rs/kWh	8.00	5.99	6.19	6.41	6.63	6.86	7.09	7.34	7.59	7.85	8.12	8.40	8.69	8.99	9.30	9.63	9.96	10.30	10.66	11.02	11.40	11.80	12.20	12.63	13.06	13.51
O&M expn	Rs/kWh	1.19	0.75	0.79	0.83	0.88	0.92	0.97	1.02	1.08	1.13	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.71	1.80	1.89	1.99	2.10	2.21	2.32	2.44	2.57
Depreciation	Rs/kWh	0.55	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.49	0.96	0.89	0.83	0.76	0.69	0.63	0.56	0.50	0.43	0.36	0.30	0.23	0.17	0.10	0.03	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	0.52	0.40	0.41	0.42	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.64	0.66	0.69	0.71	0.74	0.76	0.79	0.82	0.85	0.88
RoE	Rs/kWh	0.69	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.85	0.85	0.85	0.85	0.85
Total COG	Rs/kWh	11.45	9.39	9.58	9.78	9.99	10.22	10.45	10.69	10.95	11.22	11.50	11.79	12.10	12.42	12.76	13.11	13.16	13.61	14.08	14.56	15.07	15.78	16.32	16.89	17.47	18.08
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	5.99																										
Levllised Tariff (Fixed)	3.45																										
Levllised Tariff	9.43	Rs/Unit																									

Determination of Additional Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation

Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depm.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	- 1.35	- 12.68	- 19.48	- 23.56	- 26.00	- 27.47	- 28.35	- 28.88	- 29.20	- 29.39	- 29.50	- 29.57	- 29.61	- 16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	- 0.47	- 4.43	- 6.81	- 8.23	- 9.09	- 9.60	- 9.91	- 10.09	- 10.20	- 10.27	- 10.31	- 10.33	- 10.35	- 5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	2.13	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	4.25	4.25	4.25
Per unit benefit	Rs/Unit	2.53	1.37	0.40	0.14	- 0.01	- 0.10	- 0.16	- 0.19	- 0.21	- 0.23	- 0.23	- 0.24	- 0.24	- 0.24	- 0.24	- 0.24	- 0.24	- 0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levllised	7.42	Rs/Unit																								
Electricity Generation (Levllised)	4.06	Rs/Unit																								
Levllised benefit	0.18	Rs/Unit																								



Assumption for Bagasse based Cogeneration Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	60%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	3373.24
		GCV	GCV- Bagasse	Kcal/kg	2,250
			Bagasse Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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
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	4.81	4.81	4.81	4.81	4.81
Variable 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
Biomass Cost	Rs. Lakh		283.87	293.66	303.80	314.28	325.12	336.34	347.94	359.94	372.36	385.21	398.50	412.24	426.47	441.18	456.40	472.15	488.44	505.29	522.72	540.75	559.41	578.71	598.67	619.33	640.70
Per unit Variable Cost	Rs/kWh		5.90	6.10	6.31	6.53	6.76	6.99	7.23	7.48	7.74	8.00	8.28	8.57	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.24	11.62	12.03	12.44	12.87	13.31
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		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		18.64	19.21	19.81	20.43	21.08	21.75	22.45	23.17	23.92	24.71	25.52	26.36	27.24	28.15	29.10	29.88	30.94	32.04	33.19	34.37	35.72	37.00	38.32	39.70	41.12
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
Total Fixed Cost	Rs Lakh		146.20	145.65	145.21	144.88	144.68	144.61	144.66	144.87	145.22	145.72	146.39	147.23	148.25	149.46	150.86	138.69	143.37	148.29	153.44	158.85	172.33	178.28	184.53	191.08	197.96
Per unit Fixed Cost	Rs/kWh		3.04	3.03	3.02	3.01	3.01	3.00	3.01	3.01	3.02	3.03	3.04	3.06	3.08	3.11	3.13	2.88	2.98	3.08	3.19	3.30	3.58	3.70	3.83	3.97	4.11
Levallised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	7.88	5.90	6.10	6.31	6.53	6.76	6.99	7.23	7.48	7.74	8.00	8.28	8.57	8.86	9.17	9.48	9.81	10.15	10.50	10.86	11.24	11.62	12.03	12.44	12.87	13.31
O&M expn	Rs/kWh	1.05	0.67	0.70	0.74	0.78	0.82	0.86	0.90	0.95	1.00	1.05	1.11	1.17	1.23	1.29	1.36	1.43	1.51	1.59	1.67	1.76	1.85	1.95	2.05	2.16	2.27
Depreciation	Rs/kWh	0.49	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Int. on term loan	Rs/kWh	0.44	0.85	0.79	0.73	0.67	0.61	0.55	0.50	0.44	0.38	0.32	0.26	0.20	0.15	0.09	0.03	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	0.51	0.39	0.40	0.41	0.42	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.55	0.57	0.58	0.60	0.62	0.64	0.67	0.69	0.71	0.74	0.77	0.80	0.82	0.85
RoE	Rs/kWh	0.61	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.75	0.75	0.75	0.75	0.75
Total COG	Rs/kWh	10.97	8.94	9.13	9.33	9.54	9.76	9.99	10.24	10.49	10.75	11.03	11.32	11.63	11.94	12.27	12.62	12.69	13.13	13.58	14.05	14.54	15.20	15.73	16.27	16.84	17.43
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	5.90																										
Levllised Tariff (Fixed)	3.09																										
Levllised Tariff	8.99	Rs/Unit																									

Determination of Additional Depreciation	
Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	1.35	12.68	19.48	23.56	26.00	27.47	28.35	28.88	29.20	29.39	29.50	29.57	29.61	16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	0.47	4.43	6.81	8.23	9.09	9.60	9.91	10.09	10.20	10.27	10.31	10.33	10.35	5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	2.41	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	4.81	4.81	4.81	4.81
Per unit benefit	Rs/Unit	2.23	1.21	0.36	0.13	0.01	0.09	0.14	0.17	0.19	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised	7.42	Rs/Unit																								
Electricity Generation (Levllised)	4.60	Rs/Unit																								
Levllised benefit	0.16	Rs/Unit																								



Assumption for Bagasse based Cogeneration Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	53%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	3012.59
		GCV	GCV- Bagasse	Kcal/kg	2,250
			Bagasse Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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	
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	4.25	4.25	4.25	4.25
Variable 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
Biomass Cost	Rs. Lakh		223.94	231.67	239.66	247.93	256.48	265.33	274.49	283.96	293.75	303.89	314.37	325.22	336.44	348.04	360.05	372.47	385.32	398.62	412.37	426.60	441.31	456.54	472.29	488.58	505.44
Per unit Variable Cost	Rs/kWh		5.27	5.45	5.64	5.83	6.03	6.24	6.46	6.68	6.91	7.15	7.40	7.65	7.91	8.19	8.47	8.76	9.06	9.38	9.70	10.04	10.38	10.74	11.11	11.49	11.89
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		15.30	15.76	16.24	16.74	17.26	17.80	18.36	18.94	19.55	20.18	20.84	21.52	22.23	22.97	23.74	24.33	25.20	26.11	27.05	28.02	29.15	30.20	31.29	32.42	33.60
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	36.28	36.28	36.28	36.28	36.28
Total Fixed Cost	Rs Lakh		142.87	142.20	141.64	141.19	140.86	140.65	140.58	140.64	140.84	141.20	141.71	142.39	143.24	144.27	145.50	133.14	137.64	142.35	147.30	152.50	165.75	171.48	177.49	183.81	190.44
Per unit Fixed Cost	Rs/kWh		3.36	3.35	3.33	3.32	3.31	3.31	3.31	3.31	3.31	3.32	3.33	3.35	3.37	3.39	3.42	3.13	3.24	3.35	3.47	3.59	3.90	4.03	4.18	4.32	4.48
Levallised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	7.04	5.27	5.45	5.64	5.83	6.03	6.24	6.46	6.68	6.91	7.15	7.40	7.65	7.91	8.19	8.47	8.76	9.06	9.38	9.70	10.04	10.38	10.74	11.11	11.49	11.89
O&M expn	Rs/kWh	1.19	0.75	0.79	0.83	0.88	0.92	0.97	1.02	1.08	1.13	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.71	1.80	1.89	1.99	2.10	2.21	2.32	2.44	2.57
Depreciation	Rs/kWh	0.55	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.49	0.96	0.89	0.83	0.76	0.69	0.63	0.56	0.50	0.43	0.36	0.30	0.23	0.17	0.10	0.03	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	0.47	0.36	0.37	0.38	0.39	0.41	0.42	0.43	0.45	0.46	0.47	0.49	0.51	0.52	0.54	0.56	0.57	0.59	0.61	0.64	0.66	0.69	0.71	0.74	0.76	0.79
RoE	Rs/kWh	0.69	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.85	0.85	0.85	0.85	0.85
Total COG	Rs/kWh	10.43	8.63	8.79	8.97	9.15	9.35	9.55	9.76	9.99	10.22	10.47	10.73	11.00	11.28	11.58	11.89	11.89	12.30	12.73	13.17	13.62	14.28	14.77	15.29	15.82	16.37
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	5.27																										
Levillised Tariff (Fixed)	3.39																										
Levillised Tariff	8.66	Rs/Unit																									

Determination of Additional Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Depn.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	- 1.35	- 12.68	- 19.48	- 23.56	- 26.00	- 27.47	- 28.35	- 28.88	- 29.20	- 29.39	- 29.50	- 29.57	- 29.61	- 16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	- 0.47	- 4.43	- 6.81	- 8.23	- 9.09	- 9.60	- 9.91	- 10.09	- 10.20	- 10.27	- 10.31	- 10.33	- 10.35	- 5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	2.13	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	4.25	4.25	4.25	
Per unit benefit	Rs/Unit	2.53	1.37	0.40	0.14	- 0.01	- 0.10	- 0.16	- 0.19	- 0.21	- 0.23	- 0.23	- 0.24	- 0.24	- 0.24	- 0.24	- 0.24	- 0.24	- 0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised	7.42	Rs/Unit																									
Electricity Generation (Levellised)	4.06	Rs/Unit																									
Levellised benefit	0.18	Rs/Unit																									



Assumption for Bagasse based Cogeneration Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	60%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl. Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (up to 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	2593.07
		GCV	GCV- Bagasse	Kcal/kg	2,250
			Bagasse Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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
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	4.81	4.81	4.81	4.81	4.81
Variable 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
Biomass Cost	Rs. Lakh		218.22	225.74	233.53	241.59	249.92	258.55	267.47	276.69	286.24	296.12	306.33	316.90	327.83	339.14	350.84	362.95	375.47	388.42	401.82	415.69	430.03	444.86	460.21	476.09	492.51
Per unit Variable Cost	R\$/kWh		4.53	4.69	4.85	5.02	5.19	5.37	5.56	5.75	5.95	6.15	6.37	6.58	6.81	7.05	7.29	7.54	7.80	8.07	8.35	8.64	8.94	9.24	9.56	9.89	10.23
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		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		14.98	15.43	15.90	16.39	16.89	17.42	17.97	18.54	19.13	19.75	20.39	21.06	21.75	22.47	23.23	23.80	24.65	25.54	26.46	27.42	28.52	29.55	30.62	31.73	32.88
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
Total Fixed Cost	Rs Lakh		142.55	141.87	141.30	140.84	140.50	140.28	140.19	140.23	140.42	140.76	141.26	141.92	142.76	143.78	144.99	132.61	137.09	141.79	146.72	151.89	165.13	170.83	176.82	183.11	189.72
Per unit Fixed Cost	R\$/kWh		2.96	2.95	2.94	2.93	2.92	2.91	2.91	2.91	2.92	2.92	2.94	2.95	2.97	2.99	3.01	2.76	2.85	2.95	3.05	3.16	3.43	3.55	3.67	3.80	3.94
Levallised tariff corresponding to Useful life																											
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
Per unit Variable Cost	R\$/kWh	6.06	4.53	4.69	4.85	5.02	5.19	5.37	5.56	5.75	5.95	6.15	6.37	6.58	6.81	7.05	7.29	7.54	7.80	8.07	8.35	8.64	8.94	9.24	9.56	9.89	10.23
O&M expn	R\$/kWh	1.05	0.67	0.70	0.74	0.78	0.82	0.86	0.90	0.95	1.00	1.05	1.11	1.17	1.23	1.29	1.36	1.43	1.51	1.59	1.67	1.76	1.85	1.95	2.05	2.16	2.27
Depreciation	R\$/kWh	0.49	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Int. on term loan	R\$/kWh	0.44	0.85	0.79	0.73	0.67	0.61	0.55	0.50	0.44	0.38	0.32	0.26	0.20	0.15	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	R\$/kWh	0.41	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.39	0.40	0.41	0.42	0.44	0.45	0.47	0.48	0.49	0.51	0.53	0.55	0.57	0.59	0.61	0.64	0.66	0.68
RoE	R\$/kWh	0.61	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.75	0.75	0.75	0.75
Total COG	R\$/kWh	9.05	7.50	7.64	7.79	7.95	8.11	8.29	8.47	8.66	8.87	9.08	9.30	9.53	9.78	10.03	10.30	10.30	10.65	11.02	11.40	11.79	12.37	12.79	13.24	13.70	14.18
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	4.53																										
Levllised Tariff (Fixed)	2.99																										
Levllised Tariff	7.52	R\$/Unit																									

Determination of Additional Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	1.35	12.68	19.48	23.56	26.00	27.47	28.35	28.88	29.20	29.39	29.50	29.57	29.61	16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	0.47	4.43	6.81	8.23	9.09	9.60	9.91	10.09	10.20	10.27	10.31	10.33	10.35	5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	2.41	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	4.81	4.81	4.81	4.81
Per unit benefit	Rs/Unit	2.23	1.21	0.36	0.13	0.01	0.09	0.14	0.17	0.19	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised	7.42	Rs/Unit																								
Electricity Generation (Levllised)	4.60	Rs/Unit																								
Levllised benefit	0.16	Rs/Unit																								



Assumption for Bagasse based Cogeneration Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	53%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	12.24%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	2405.79
		GCV	GCV- Bagasse	Kcal/kg	2,250
			Bagasse Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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
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	4.25	4.25	4.25	4.25
Variable 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
Biomass Cost	Rs. Lakh		178.84	185.01	191.39	197.99	204.82	211.89	219.20	226.76	234.58	242.68	251.05	259.71	268.67	277.94	287.53	297.45	307.71	318.33	329.31	340.67	352.42	364.58	377.16	390.17	403.63
Per unit Variable Cost	Rs/kWh		4.21	4.35	4.50	4.66	4.82	4.98	5.16	5.33	5.52	5.71	5.91	6.11	6.32	6.54	6.76	7.00	7.24	7.49	7.75	8.01	8.29	8.58	8.87	9.18	9.49
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		12.79	13.17	13.56	13.96	14.38	14.83	15.28	15.76	16.26	16.78	17.32	17.88	18.46	19.07	19.70	20.16	20.88	21.64	22.43	23.24	24.21	25.09	26.00	26.95	27.93
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	36.28	36.28	36.28	36.28
Total Fixed Cost	Rs Lakh		140.36	139.60	138.95	138.41	137.99	137.68	137.50	137.46	137.55	137.79	138.18	138.74	139.47	140.37	141.47	128.97	133.32	137.89	142.68	147.72	160.81	166.37	172.20	178.33	184.77
Per unit Fixed Cost	Rs/kWh		3.30	3.28	3.27	3.26	3.25	3.24	3.23	3.23	3.24	3.24	3.25	3.26	3.28	3.30	3.33	3.03	3.14	3.24	3.36	3.47	3.78	3.91	4.05	4.19	4.35
Levallised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	5.62	4.21	4.35	4.50	4.66	4.82	4.98	5.16	5.33	5.52	5.71	5.91	6.11	6.32	6.54	6.76	7.00	7.24	7.49	7.75	8.01	8.29	8.58	8.87	9.18	9.49
O&M expn	Rs/kWh	1.19	0.75	0.79	0.83	0.88	0.92	0.97	1.02	1.08	1.13	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.71	1.80	1.89	1.99	2.10	2.21	2.32	2.44	2.57
Depreciation	Rs/kWh	0.55	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.49	0.96	0.89	0.83	0.76	0.69	0.63	0.56	0.50	0.43	0.36	0.30	0.23	0.17	0.10	0.03	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	0.39	0.30	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.41	0.42	0.43	0.45	0.46	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.66
RoE	Rs/kWh	0.69	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.85	0.85	0.85	0.85	0.85
Total COG	Rs/kWh	8.94	7.51	7.64	7.77	7.91	8.06	8.22	8.39	8.57	8.75	8.95	9.16	9.37	9.60	9.84	10.09	10.03	10.37	10.73	11.10	11.49	12.07	12.49	12.92	13.37	13.84
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost		4.21																									
Levllised Tariff (Fixed)		3.31																									
Levllised Tariff	7.52	Rs/Unit																									

Determination of Additional Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation

Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	1.35	12.68	19.48	23.56	26.00	27.47	28.35	28.88	29.20	29.39	29.50	29.57	29.61	16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	0.47	4.43	6.81	8.23	9.09	9.60	9.91	10.09	10.20	10.27	10.31	10.33	10.35	5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	2.13	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	4.25	4.25	4.25	4.25
Per unit benefit	Rs/Unit	2.53	1.37	0.40	0.14	0.01	0.10	0.16	0.19	0.21	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.24	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levellised	7.42	Rs/Unit																									
Electricity Generation (Levllised)	4.06	Rs/Unit																									
Levllised benefit	0.18	Rs/Unit																									



Assumption for Bagasse based Cogeneration Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	45%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	2685.11
		GCV	GCV- Bagasse	Kcal/kg	2,250
			Bagasse Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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	
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	3.61	3.61	3.61	3.61	
Variable 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
Biomass Cost	Rs. Lakh		169.47	175.32	181.37	187.62	194.10	200.79	207.72	214.89	222.30	229.97	237.90	246.11	254.60	263.39	272.47	281.87	291.60	301.66	312.06	322.83	333.97	345.49	357.41	369.74	382.50
Per unit Variable Cost	Rs/kWh		4.70	4.86	5.02	5.20	5.38	5.56	5.75	5.95	6.16	6.37	6.59	6.82	7.05	7.30	7.55	7.81	8.08	8.36	8.65	8.94	9.25	9.57	9.90	10.24	10.60
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
O&M Expenses	Rs Lakh		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		12.27	12.63	13.00	13.39	13.79	14.21	14.64	15.10	15.57	16.07	16.58	17.12	17.68	18.26	18.86	19.29	19.99	20.71	21.47	22.25	23.18	24.02	24.90	25.81	26.76
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
Total Fixed Cost	Rs Lakh		139.84	139.06	138.40	137.84	137.39	137.06	136.86	136.79	136.87	137.08	137.45	137.98	138.68	139.56	140.63	128.10	132.42	136.96	141.72	146.73	159.78	165.30	171.10	177.19	183.59
Per unit Fixed Cost	Rs/kWh		3.87	3.85	3.83	3.82	3.81	3.80	3.79	3.79	3.79	3.80	3.81	3.82	3.84	3.87	3.90	3.55	3.67	3.79	3.93	4.07	4.43	4.58	4.74	4.91	5.09
Levallised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	6.27	4.70	4.86	5.02	5.20	5.38	5.56	5.75	5.95	6.16	6.37	6.59	6.82	7.05	7.30	7.55	7.81	8.08	8.36	8.65	8.94	9.25	9.57	9.90	10.24	10.60
O&M expn	Rs/kWh	1.40	0.89	0.93	0.98	1.03	1.09	1.15	1.21	1.27	1.34	1.41	1.48	1.56	1.64	1.73	1.82	1.91	2.01	2.12	2.23	2.34	2.47	2.60	2.73	2.88	3.03
Depreciation	Rs/kWh	0.65	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Int. on term loan	Rs/kWh	0.58	1.13	1.05	0.97	0.89	0.82	0.74	0.66	0.58	0.51	0.43	0.35	0.27	0.19	0.12	0.04	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	0.44	0.34	0.35	0.36	0.37	0.38	0.39	0.41	0.42	0.43	0.45	0.46	0.47	0.49	0.51	0.52	0.53	0.55	0.57	0.59	0.62	0.64	0.67	0.69	0.72	0.74
RoE	Rs/kWh	0.81	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	1.01	1.01	1.01	1.01	1.01
Total COG	Rs/kWh	10.16	8.57	8.71	8.86	9.02	9.18	9.36	9.55	9.74	9.95	10.17	10.40	10.64	10.90	11.16	11.45	11.36	11.75	12.15	12.57	13.01	13.68	14.15	14.64	15.15	15.68
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	4.70																										
Levllised Tariff (Fixed)	3.88																										
Levllised Tariff	8.58	Rs/Unit																									

Determination of Additional Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Deprn.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	- 1.35	- 12.68	- 19.48	- 23.56	- 26.00	- 27.47	- 28.35	- 28.88	- 29.20	- 29.39	- 29.50	- 29.57	- 29.61	- 16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	- 0.47	- 4.43	- 6.81	- 8.23	- 9.09	- 9.60	- 9.91	- 10.09	- 10.20	- 10.27	- 10.31	- 10.33	- 10.35	- 5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	1.80	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61
Per unit benefit	Rs/Unit	2.98	1.62	0.47	0.17	- 0.01	- 0.12	- 0.19	- 0.23	- 0.25	- 0.27	- 0.27	- 0.28	- 0.28	- 0.28	- 0.29	- 0.29	- 0.29	- 0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levllised	7.42	Rs/Unit																								
Electricity Generation (Levllised)	3.45	Rs/Unit																								
Levllised benefit	0.22	Rs/Unit																								



Assumption for Bagasse based Cogeneration Project Parameters				State	Other States
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	8.50%
			PLF	%	53%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	562
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	562
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	393
			Total Equity Amount	Rs Lacs	168
		<u>Debt Component</u>	Loan Amount	Rs Lacs	393
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	168
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Bagasse Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilization Period	Kcal/kWh	3600
			During Stabilization Period	Kcal/kWh	3600
		Base Price	Base Price	Rs/MT	2914.13
		GCV	GCV- Bagasse	Kcal/kg	2,250
			Bagasse Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	-
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	32.01
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Template for (Cogeneration Projects) : 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	
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	4.25	4.25	4.25	
Variable 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
Biomass Cost	Rs. Lakh		216.62	224.10	231.83	239.83	248.10	256.66	265.51	274.68	284.15	293.95	304.10	314.59	325.44	336.67	348.28	360.30	372.73	385.59	398.89	412.65	426.89	441.62	456.85	472.61	488.92
Per unit Variable Cost	Rs/kWh		5.10	5.27	5.45	5.64	5.84	6.04	6.25	6.46	6.68	6.91	7.15	7.40	7.66	7.92	8.19	8.48	8.77	9.07	9.38	9.71	10.04	10.39	10.75	11.12	11.50
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		32.01	33.69	35.46	37.33	39.29	41.35	43.52	45.80	48.21	50.74	53.40	56.21	59.16	62.26	65.53	68.97	72.59	76.40	80.42	84.64	89.08	93.76	98.68	103.86	109.31
Depreciation	Rs Lakh		26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23
Interest on term loan	Rs Lakh		40.72	37.91	35.11	32.30	29.49	26.68	23.87	21.06	18.25	15.45	12.64	9.83	7.02	4.21	1.40	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		14.90	15.34	15.81	16.29	16.79	17.32	17.86	18.43	19.02	19.63	20.27	20.93	21.62	22.34	23.08	23.65	24.50	25.38	26.30	27.25	28.35	29.37	30.43	31.54	32.68
Return on Equity	Rs Lakh		28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
Total Fixed Cost	Rs Lakh		142.46	141.78	141.20	140.74	140.39	140.17	140.08	140.12	140.31	140.64	141.14	141.79	142.63	143.64	144.85	132.47	136.94	141.63	146.55	151.73	164.95	170.65	176.64	182.92	189.52
Per unit Fixed Cost	Rs/kWh		3.35	3.34	3.32	3.31	3.30	3.30	3.30	3.30	3.30	3.31	3.32	3.34	3.36	3.38	3.41	3.12	3.22	3.33	3.45	3.57	3.88	4.01	4.16	4.30	4.46
Levallisred tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	6.81	5.10	5.27	5.45	5.64	5.84	6.04	6.25	6.46	6.68	6.91	7.15	7.40	7.66	7.92	8.19	8.48	8.77	9.07	9.38	9.71	10.04	10.39	10.75	11.12	11.50
O&M expn	Rs/kWh	1.19	0.75	0.79	0.83	0.88	0.92	0.97	1.02	1.08	1.13	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.71	1.80	1.89	1.99	2.10	2.21	2.32	2.44	2.57
Depreciation	Rs/kWh	0.55	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Int. on term loan	Rs/kWh	0.49	0.96	0.89	0.83	0.76	0.69	0.63	0.56	0.50	0.43	0.36	0.30	0.23	0.17	0.10	0.03	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	0.46	0.35	0.36	0.37	0.38	0.40	0.41	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.54	0.56	0.58	0.60	0.62	0.64	0.67	0.69	0.72	0.74	0.77
RoE	Rs/kWh	0.69	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.85	0.85	0.85	0.85	0.85	0.85
Total COG	Rs/kWh	10.19	8.45	8.61	8.78	8.95	9.14	9.33	9.54	9.76	9.98	10.22	10.47	10.74	11.01	11.30	11.60	11.59	11.99	12.40	12.83	13.28	13.92	14.40	14.90	15.42	15.96
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	5.10																										
Levallisred Tariff (Fixed)	3.38																										
Levallisred Tariff	8.48	Rs/Unit																									

Determination of Additional Depreciation	
Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	562.00

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	14.84	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	29.67	16.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Accelerated Deprn.	Rs Lakh	168.60	196.70	78.68	47.21	28.32	16.99	10.20	6.12	3.67	2.20	1.32	0.79	0.48	0.29	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	153.76	167.03	49.01	17.53	1.35	12.68	19.48	23.56	26.00	27.47	28.35	28.88	29.20	29.39	29.50	29.57	29.61	16.15	0.02	0.01	0.01	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	53.73	58.37	17.12	6.13	0.47	4.43	6.81	8.23	9.09	9.60	9.91	10.09	10.20	10.27	10.31	10.33	10.35	5.64	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	2.13	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	4.25	4.25	4.25	
Per unit benefit	Rs/Unit	2.53	1.37	0.40	0.14	0.01	0.10	0.16	0.19	0.21	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.24	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	
Tax Benefit Levelised	7.42	Rs/Unit																									
Electricity Generation (Levelised)	4.06	Rs/Unit																									
Levelised benefit	0.18	Rs/Unit																									



Assumption for Biomass Gasifier Based Project Parameters				State	Andhra Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		<u>Debt Component</u>	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4262.57
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



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Assumption for Biomass Gasifier Based Project Parameters				State	Haryana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		<u>Debt Component</u>	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4852.24
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



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Assumption for Biomass Gasifier Based Project Parameters				State	Maharashtra
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		<u>Debt Component</u>	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4962.47
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



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Assumption for Biomass Gasifier Based Project Parameters				State	Punjab
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		<u>Debt Component</u>	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	5074.84
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Assumption for Biomass Gasifier Based Project Parameters				State	Rajasthan
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		Debt Component	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		Equity Component	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	Fiscal Assumptions	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		Depreciation	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		For variable Charges			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4235.81
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



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
Net Generation	MU		6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71
Variable 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
Biomass Cost	Rs. Lakh		394.52	408.13	422.21	436.78	451.84	467.43	483.56	500.24	517.50	535.35	553.82	572.93	592.70	613.15	634.30	656.18	678.82	702.24	726.47	751.53	777.46	804.28	832.03	860.73	890.43
Per unit Variable Cost	Rs/kWh		5.88	6.09	6.30	6.51	6.74	6.97	7.21	7.46	7.72	7.98	8.26	8.54	8.84	9.14	9.46	9.79	10.12	10.47	10.83	11.21	11.59	11.99	12.41	12.84	13.28
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		80.04	84.24	88.66	93.31	98.21	103.37	108.80	114.51	120.52	126.85	133.51	140.52	147.89	155.66	163.83	172.43	181.48	191.01	201.04	211.59	222.70	234.39	246.70	259.65	273.28
Depreciation	Rs Lakh		31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62
Interest on term loan	Rs Lakh		49.05	45.67	42.28	38.90	35.51	32.13	28.74	25.36	21.97	18.58	15.20	11.81	8.43	5.04	1.66	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh		27.18	28.07	28.99	29.95	30.95	31.99	33.08	34.20	35.37	36.59	37.86	39.17	40.54	41.97	43.45	44.74	46.39	48.11	49.89	51.75	53.81	55.82	57.89	60.06	62.30
Return on Equity	Rs Lakh		34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.71
Total Fixed Cost	Rs Lakh		222.34	224.04	226.01	228.24	230.75	233.56	236.68	240.14	243.93	248.09	252.63	257.57	262.93	268.74	275.00	281.66	288.77	296.33	304.34	312.80	321.72	331.10	340.94	351.25	362.03
Per unit Fixed Cost	Rs/kWh	3.75	3.32	3.34	3.37	3.40	3.44	3.48	3.53	3.58	3.64	3.70	3.77	3.84	3.92	4.01	4.10	4.19	4.28	4.38	4.46	4.56	4.64	4.74	4.84	4.94	5.06
Levillised tariff corresponding to Useful life																											
Per Unit Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Per unit Variable Cost	Rs/kWh	7.86	5.88	6.09	6.30	6.51	6.74	6.97	7.21	7.46	7.72	7.98	8.26	8.54	8.84	9.14	9.46	9.79	10.12	10.47	10.83	11.21	11.59	11.99	12.41	12.84	13.28
O&M expn	Rs/kWh	1.89	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.71	1.80	1.89	1.99	2.10	2.21	2.32	2.44	2.57	2.71	2.85	3.00	3.16	3.32	3.50	3.68	3.87	4.08
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.02	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.54	0.41	0.42	0.43	0.45	0.46	0.48	0.49	0.51	0.53	0.55	0.56	0.58	0.60	0.63	0.65	0.67	0.69	0.72	0.74	0.77	0.80	0.83	0.86	0.90	0.93
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Total COG	Rs/kWh	11.61	9.20	9.43	9.67	9.92	10.18	10.45	10.74	11.04	11.35	11.68	12.03	12.38	12.76	13.15	13.56	13.94	14.24	14.75	15.29	15.85	16.57	17.17	17.80	18.46	19.14
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	5.88																										
Levillised Tariff (Fixed)	3.75																										
Levillised Tariff	9.63	Rs/Unit																									

Determination of Additional Depreciation for Biomass Gasifier Power Projects

Depreciation amount	90%																										
Book Depreciation rate	5.28%																										
Tax Depreciation rate	40%																										
Additional Depreciation	20%																										
MAT	17.472%																										
Corporate tax	34.944%																										
Capital Cost	677.00																										
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%	0.00%
Book Depreciation	Rs Lakh	17.87	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	19.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																											
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depn.	Rs Lakh	203.10	236.95	94.78	56.87	34.12	20.47	12.28	7.37	4.42	2.65	1.59	0.96	0.57	0.34	0.21	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	185.23	201.20	59.03	21.12	-1.62	-15.27	-23.46	-28.38	-31.32	-33.09	-34.15	-34.79	-35.17	-35.40	-35.54	-35.62	-35.67	-19.45	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	64.73	70.31	20.63	7.38	-0.57	-5.34	-8.20	-9.92	-10.95	-11.56	-11.93	-12.16	-12.29	-12.37	-12.42	-12.45	-12.46	-6.80	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.35	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.13
Tax Benefit Levellised	8.94	Rs/Unit																									
Electricity Generation (Levellised)	6.40	Rs/Unit																									
Levellised benefit	0.14	Rs/Unit																									



Assumption for Biomass Gasifier Based Project Parameters				State	Tamil Nadu
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		<u>Debt Component</u>	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4193.01
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Assumption for Biomass Gasifier Based Project Parameters				State	Telangana
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		<u>Debt Component</u>	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4262.57
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



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	
Net Generation	MU		6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	
Variable 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	
Biomass Cost	Rs. Lakh		397.01	410.71	424.88	439.53	454.70	470.39	486.61	503.40	520.77	538.74	557.32	576.55	596.44	617.02	638.31	660.33	683.11	706.68	731.06	756.28	782.37	809.36	837.28	866.17	896.05	
Per unit Variable Cost	Rs/kWh		5.92	6.12	6.34	6.55	6.78	7.01	7.26	7.51	7.77	8.03	8.31	8.60	8.89	9.20	9.52	9.85	10.19	10.54	10.90	11.28	11.67	12.07	12.49	12.92	13.36	
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
O&M Expenses	Rs Lakh		80.04	84.24	88.66	93.31	98.21	103.37	108.80	114.51	120.52	126.85	133.51	140.52	147.89	155.66	163.83	172.43	181.48	191.01	201.04	211.59	222.70	234.39	246.70	259.65	273.28	
Depreciation	Rs Lakh		31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	
Interest on term loan	Rs Lakh		49.05	45.67	42.28	38.90	35.51	32.13	28.74	25.36	21.97	18.58	15.20	11.81	8.43	5.04	1.66	-	-	-	-	-	-	-	-	-	-	
Interest on working Capital	Rs Lakh		27.32	28.21	29.14	30.11	31.11	32.16	33.25	34.38	35.55	36.78	38.05	39.37	40.75	42.18	43.67	44.97	46.63	48.36	50.15	52.01	54.09	56.10	58.19	60.36	62.61	
Return on Equity	Rs Lakh		34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	43.71	43.71	43.71	43.71	43.71	
Total Fixed Cost	Rs Lakh		222.48	224.19	226.15	228.39	230.91	233.72	236.85	240.31	244.11	248.28	252.83	257.77	263.14	268.95	275.23	285.39	296.11	307.36	319.18	331.60	344.74	358.33	372.26	386.31	399.14	
Per unit Fixed Cost	Rs/kWh	3.75		3.32	3.34	3.37	3.41	3.44	3.49	3.53	3.58	3.64	3.70	3.77	3.84	3.92	4.01	4.10	3.96	4.12	4.29	4.46	4.65	4.98	5.19	5.40	5.63	5.86
Levallised tariff corresponding to Useful life																												
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	
Per unit Variable Cost	Rs/kWh	7.91	5.92	6.12	6.34	6.55	6.78	7.01	7.26	7.51	7.77	8.03	8.31	8.60	8.89	9.20	9.52	9.85	10.19	10.54	10.90	11.28	11.67	12.07	12.49	12.92	13.36	
O&M expn	Rs/kWh	1.89	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.71	1.80	1.89	1.99	2.10	2.21	2.32	2.44	2.57	2.71	2.85	3.00	3.16	3.32	3.50	3.68	3.87	4.08	
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.02	-	-	-	-	-	-	-	-	-	-	
Int. on working capital	Rs/kWh	0.54	0.41	0.42	0.43	0.45	0.46	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.67	0.70	0.72	0.75	0.78	0.81	0.84	0.87	0.90	0.93	
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65	
Total COG	Rs/kWh	11.66	9.24	9.47	9.71	9.96	10.22	10.50	10.79	11.09	11.41	11.74	12.08	12.44	12.82	13.21	13.62	13.80	14.30	14.82	15.36	15.92	16.65	17.25	17.89	18.54	19.22	
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12	
Variable Cost	5.92																											
Levllised Tariff (Fixed)	3.75																											
Levllised Tariff	9.67	Rs/Unit																										

Determination of Additional Depreciation for Biomass Gasifier Power Projects

Depreciation amount	90%																									
Book Depreciation rate	5.28%																									
Tax Depreciation rate	40%																									
Additional Depreciation	20%																									
MAT	17.472%																									
Corporate tax	34.944%																									
Capital Cost	677.00																									
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	17.87	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	19.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated Depm.	Rs Lakh	203.10	236.95	94.78	56.87	34.12	20.47	12.28	7.37	4.42	2.65	1.59	0.96	0.57	0.34	0.21	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	185.23	201.20	59.03	21.12	-1.62	-15.27	-23.46	-28.38	-31.32	-33.09	-34.15	-34.79	-35.17	-35.40	-35.54	-35.62	-35.67	-19.45	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	64.73	70.31	20.63	7.38	-0.57	-5.34	-8.20	-9.92	-10.95	-11.56	-11.93	-12.16	-12.29	-12.37	-12.42	-12.45	-12.46	-6.80	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	3.35	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71
Per unit benefit	Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13
Tax Benefit Levellised	8.94	Rs/Unit																								
Electricity Generation (Levllised)	6.40	Rs/Unit																								
Levllised benefit	0.14	Rs/Unit																								



Assumption for Biomass Gasifier Based Project Parameters				State	Uttar Pradesh
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		Debt Component	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		Equity Component	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	Fiscal Assumptions	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		Depreciation	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	For Fixed Charges			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		For variable Charges			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4337.48
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



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
Net Generation	MU		6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71
Variable 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
Biomass Cost	Rs. Lakh		403.99	417.93	432.34	447.26	462.69	478.65	495.17	512.25	529.92	548.20	567.12	586.68	606.92	627.86	649.52	671.93	695.11	719.10	743.90	769.57	796.12	823.58	852.00	881.39	911.80
Per unit Variable Cost	Rs/kWh		6.02	6.23	6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.72	11.09	11.48	11.87	12.28	12.71	13.14	13.60
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
O&M Expenses	Rs Lakh		80.04	84.24	88.66	93.31	98.21	103.37	108.80	114.51	120.52	126.85	133.51	140.52	147.89	155.66	163.83	172.43	181.48	191.01	201.04	211.59	222.70	234.39	246.70	259.65	273.28
Depreciation	Rs Lakh		31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54	13.54
Interest on term loan	Rs Lakh		49.05	45.67	42.28	38.90	35.51	32.13	28.74	25.36	21.97	18.58	15.20	11.81	8.43	5.04	1.66	-	-	-	-	-	-	-	-	-	-
Interest on working Capital	Rs Lakh		27.71	28.61	29.56	30.54	31.56	32.62	33.72	34.87	36.06	37.30	38.60	39.94	41.33	42.78	44.29	45.62	47.30	49.05	50.86	52.75	54.85	56.89	59.01	61.20	63.49
Return on Equity	Rs Lakh		34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.45	34.71	34.71	34.71	34.71
Total Fixed Cost	Rs Lakh		222.87	224.59	226.57	228.82	231.35	234.18	237.33	240.80	244.62	248.81	253.37	258.34	263.72	269.55	275.85	286.04	276.78	288.05	299.90	312.34	334.80	348.53	362.95	378.10	394.02
Per unit Fixed Cost	Rs/kWh	3.76	3.32	3.35	3.38	3.41	3.45	3.49	3.54	3.59	3.65	3.71	3.78	3.85	3.93	4.02	4.11	3.97	4.13	4.30	4.47	4.66	4.99	5.20	5.41	5.64	5.88
Levallised tariff corresponding to Useful life																											
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
Per unit Variable Cost	Rs/kWh	8.05	6.02	6.23	6.45	6.67	6.90	7.14	7.38	7.64	7.90	8.17	8.46	8.75	9.05	9.36	9.69	10.02	10.37	10.72	11.09	11.48	11.87	12.28	12.71	13.14	13.60
O&M expn	Rs/kWh	1.89	1.19	1.26	1.32	1.39	1.46	1.54	1.62	1.71	1.80	1.89	1.99	2.10	2.21	2.32	2.44	2.57	2.71	2.85	3.00	3.16	3.32	3.50	3.68	3.87	4.08
Depreciation	Rs/kWh	0.42	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	0.38	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.02	-	-	-	-	-	-	-	-	-	-
Int. on working capital	Rs/kWh	0.55	0.41	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.71	0.73	0.76	0.79	0.82	0.85	0.88	0.91	0.95
RoE	Rs/kWh	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.65	0.65	0.65	0.65	0.65
Total COG	Rs/kWh	11.81	9.35	9.58	9.83	10.08	10.35	10.63	10.92	11.23	11.55	11.89	12.24	12.60	12.98	13.38	13.80	13.99	14.49	15.02	15.57	16.13	16.86	17.48	18.12	18.78	19.47
Discount Factor			1	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14	0.12
Variable Cost	6.02																										
Levllised Tariff (Fixed)	3.76																										
Levllised Tariff	9.78	Rs/Unit																									

Determination of Additional Depreciation for Biomass Gasifier Power Projects

Depreciation amount		90%																										
Book Depreciation rate		5.28%																										
Tax Depreciation rate		40%																										
Additional Depreciation		20%																										
MAT		17.472%																										
Corporate tax		34.944%																										
Capital Cost		677.00																										
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	17.87	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	35.75	19.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																												
Opening		%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year		%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
Closing		%	70.0%	35.0%	21.0%	12.6%	7.6%	4.5%	2.7%	1.6%	1.0%	0.6%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Accelerated Depn.		Rs Lakh	203.10	236.95	94.78	56.87	34.12	20.47	12.28	7.37	4.42	2.65	1.59	0.96	0.57	0.34	0.21	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00		
Net Depreciation Benefit		Rs Lakh	185.23	201.20	59.03	21.12	-1.62	-15.27	-23.46	-28.38	-31.32	-33.09	-34.15	-34.79	-35.17	-35.40	-35.54	-35.62	-35.67	-19.45	0.03	0.02	0.02	0.01	0.01	0.00	0.00	
Tax Benefit		Rs Lakh	64.73	70.31	20.63	7.38	-0.57	-5.34	-8.20	-9.92	-10.95	-11.56	-11.93	-12.16	-12.29	-12.37	-12.42	-12.45	-12.46	-6.80	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
Energy generation		MU	3.35	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71		
Per unit benefit		Rs/Unit	1.93	1.05	0.31	0.11	-0.01	-0.08	-0.12	-0.15	-0.16	-0.17	-0.18	-0.18	-0.18	-0.19	-0.19	-0.19	-0.19	-0.10	0.00	0.00	0.00	0.00	0.00	0.00		
Discounting Factor			1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19	0.18	0.16	0.15	0.14		
Applicable Discounting Factor			1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.15	0.14		
Tax Benefit Levellised		8.94	Rs/Unit																									
Electricity Generation (Levellised)		6.40	Rs/Unit																									
Levellised benefit		0.14	Rs/Unit																									



Assumption for Biomass Gasifier Based Project Parameters				State	Other States
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	10.00%
			PLF	%	85%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	677
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	677
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	474
			Total Equity Amount	Rs Lacs	203
		<u>Debt Component</u>	Loan Amount	Rs Lacs	474
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	203
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	<u>For Fixed Charges</u>			
		O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		<u>For variable Charges</u>			
		Biomass Stock		Months	4.00
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	4559.01
			Biomass Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	1.25
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Assumption for Biogas Based Project Parameters					
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	12.00%
			PLF	%	90%
			Useful Life	Years	25.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	1354
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	1354
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	948
			Total Equity Amount	Rs Lacs	406
		<u>Debt Component</u>	Loan Amount	Rs Lacs	948
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	406
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	2.00%
5	Working Capital	O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Fuel Related Assumptions	Base Price	Base Price	Rs/MT	1821.46
			Price Escalation Factor	%	3.45%
			Specific Fuel Consumption	kg/kWh	3.00
7	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	80.04
		O&M Expenses Escalation		%	5.25%
8	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Assumption for RDF based MSW Project Parameters					Annexure – 6
S. No	Assumption Head	Sub-Head	Sub-Head - 2	Unit	Parameters
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1.00
			Auxiliary Consumption during stabilisation	%	15.00%
			PLF(Stabilization for 1st Year)	%	65%
			PLF(Stabilization from 2nd Year)	%	80%
			Useful Life	Years	20.00
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs	2200
			Capital subsidy (if any)	Rs Lacs	-
			Net capital cost	Rs Lacs	2200
3	Sources of Funding	<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	1540
			Total Equity Amount	Rs Lacs	660
		<u>Debt Component</u>	Loan Amount	Rs Lacs	1540
			Moratorium Period	Years	-
			Repayment Period (incl Moratorium)	Years	15.00
			Interest Rate	%	10.71%
		<u>Equity Component</u>	Equity Amount	Rs Lacs	660
			Return on Equity (upto 20 Years)	%	16.96%
			Return on Equity (after 20 Years)	%	21.52%
			Discount Rate (equ. To WACC)	%	9.08%
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Corporate Tax Rate	%	34.94%
			MAT Rate	%	17.47%
		<u>Depreciation</u>	Depreciation Rate (Power Plant)	%	4.67%
			Depreciation Rate 16th year onwards	%	4.00%
5	Working Capital	O&M Charges		Months	1.00
		Maintenance Spares	(% of O&M Expenses)		15%
		Receivables for Debtors		Months	1.50
		Interest on Working Capital		%	11.96%
6	Operation & Maintenance Expenses	O&M Expenses		Rs. Lacs	207.15
		O&M Expenses Escalation		%	5.25%
7	Generation & Sale of Energy	Total No. of Hours		Hrs	8,766.00



Determination of Tariff Component for RDF Project

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
Net Generation	MU		4.84	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96

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		207.15	218.03	229.47	241.52	254.20	267.54	281.59	296.37	311.93	328.31	345.55	363.69	382.78	402.88	424.03	446.29	469.72	494.38	520.34	547.65
Depreciation	Rs Lakh		102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	102.74	88.00	88.00	88.00	88.00	88.00
Interest on term loan	Rs Lakh		159.41	148.41	137.40	126.40	115.40	104.40	93.40	82.39	71.39	60.39	49.39	38.39	27.39	16.38	5.38	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		14.69	14.99	15.33	15.68	16.07	16.48	16.92	17.40	17.91	18.46	19.04	19.66	20.32	21.03	21.79	22.45	23.47	24.54	25.67	26.86
Return on Equity	Rs Lakh		111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96	111.96
Total Fixed Cost	Rs Lakh		595.95	596.13	596.90	598.31	600.37	603.13	606.61	610.87	615.94	621.86	628.68	636.44	645.19	655.00	665.90	668.70	693.15	718.88	745.97	774.47

Levelised tariff corresponding to Useful life

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	
O&M expn	Rs/kWh	5.19	4.28	3.66	3.85	4.05	4.26	4.49	4.72	4.97	5.23	5.51	5.80	6.10	6.42	6.76	7.11	7.49	7.88	8.29	8.73	9.19
Depreciation	Rs/kWh	1.74	2.12	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.48	1.48	1.48	1.48	1.48	
Int. on term loan	Rs/kWh	1.54	3.29	2.49	2.31	2.12	1.94	1.75	1.57	1.38	1.20	1.01	0.83	0.64	0.46	0.27	0.09	-	-	-	-	-
Int. on working capital	Rs/kWh	0.30	0.30	0.25	0.26	0.26	0.27	0.28	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.35	0.37	0.38	0.39	0.41	0.43	0.45
RoE	Rs/kWh	1.92	2.31	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88
Total COG	Rs/kWh	10.69	12.30	10.00	10.01	10.04	10.07	10.12	10.18	10.25	10.33	10.43	10.55	10.68	10.82	10.99	11.17	11.22	11.63	12.06	12.51	12.99

Variable Cost (Rs/Unit)	0.00
Levllised Tariff (Fixed) (Rs/Unit)	10.69
Levllised Tariff(Rs/Unit)	10.69

Levllised Tariff (Fixed) (Rs/Unit)	10.69
Applicable Tariff (Rs/Unit)	10.69

Determination of Additional Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
MAT	17.47%
Corporate Tax	34.94%
Capital Cost	2200.00

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	58.08	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	116.16	63.36	0.00	0.00

Accelerated Depreciation																					
Opening	%	100%	70%	35%	21%	13%	8%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	
Allowed during the year	%	30.00%	35.00%	14.00%	8.40%	5.04%	3.02%	1.81%	1.09%	0.65%	0.39%	0.24%	0.14%	0.08%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	
Closing	%	70.00%	35.00%	21.00%	12.60%	7.56%	4.54%	2.72%	1.63%	0.98%	0.59%	0.35%	0.21%	0.13%	0.08%	0.05%	0.03%	0.02%	0.01%	0.00%	
Accelerated Depn.	Rs Lakh	660.00	770.00	308.00	184.80	110.88	66.53	39.92	23.95	14.37	8.62	5.17	3.10	1.86	1.12	0.67	0.40	0.24	0.14	0.09	

Net Depreciation Benefit	Rs Lakh	601.92	653.84	191.84	68.64	- 5.28	- 49.63	- 76.24	- 92.21	- 101.79	- 107.54	- 110.99	- 113.06	- 114.30	- 115.04	- 115.49	- 115.76	- 115.92	- 63.22	0.09	0.05
Tax Benefit	Rs Lakh	210.33	228.48	67.04	23.99	- 1.85	- 17.34	- 26.64	- 32.22	- 35.57	- 37.58	- 38.78	- 39.51	- 39.94	- 40.20	- 40.36	- 40.45	- 40.51	- 22.09	0.03	0.02
Energy generation	MU	2.42	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96	5.96
Per unit benefit	Rs/Unit	8.69	3.83	1.12	0.40	- 0.03	- 0.29	- 0.45	- 0.54	- 0.60	- 0.63	- 0.65	- 0.66	- 0.67	- 0.67	- 0.68	- 0.68	- 0.68	- 0.37	0.00	0.00
Discounting Factor		1.00	0.92	0.84	0.77	0.71	0.65	0.59	0.54	0.50	0.46	0.42	0.38	0.35	0.32	0.30	0.27	0.25	0.23	0.21	0.19
Applicable Discounting Factor		1.00	0.96	0.88	0.80	0.74	0.68	0.62	0.57	0.52	0.48	0.44	0.40	0.37	0.34	0.31	0.28	0.26	0.24	0.22	0.20

Tax Benefit Levelled	31.26	Rs/Unit
Electricity Generation (Levelled)	5.62	Rs/Unit
Levelled benefit	0.55	Rs/Unit