

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. Dr. Pramod Deo, Chairperson
2. Shri S.Jayaraman, Member
3. Shri V.S.Verma, Member

Petition No.53/2010 (Suo Motu)

IN THE MATTER OF

Determination of generic levellised generation tariff under Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 and Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) (First Amendment) Regulations, 2010.

ORDER

1. In exercise of the powers vested under Section 61 read with Section 178 of the Act and after previous publication, the Commission has notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009, (hereinafter referred to as “the RE Regulations”). The RE Regulations provide for terms and conditions and the procedure for determination of tariff of the following categories of renewable energy generating stations:
 - (a) Wind Power Project;
 - (b) Small Hydro Projects;

- (c) Biomass Power Projects;
- (d) Non-fossil fuel-based co-generation Plants;
- (e) Solar Photo voltaic (PV) and Solar Thermal Power Projects.

2. The Renewable Energy (RE) Regulations require the Commission to determine the generic tariff on the basis of the *suo motu* petition, for the RE technologies for which norms have been provided in the regulations. Generic Tariff is different from the project specific tariff for which a project developer has to file petition before the commission as per the format provided in the RE regulations. Pertinently, project specific tariff has been envisaged for the new RE technologies and the technologies which are still at the nascent stage of development, and the Commission shall determine the project specific tariff for such technologies on a case to case basis.
3. Clause (1) of Regulation 8 of the RE Regulations provides that “the Commission shall determine the generic tariff on the basis of *suo motu* petition at least six months in advance at the beginning of each year of the Control period for renewable energy technologies for which norms have been specified under the Regulations.” The Commission has notified the RE Tariff Regulations on 16.9.2009 and subsequently issued generic *suo-motu* tariff order, which was applicable for the renewable energy projects to be commissioned during first year of the control period (i.e. FY2009-10). The Commission, in due discharge of the mandate under Regulation 8(1) of RE Regulations proposes to determine the

generic tariff of the RE projects for the second year of control period (i.e. FY 2010-11).

4. The Commission has made the following provision in regulation 8 through the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) (First Amendment) Regulations, 2010, as under:

“(2) Notwithstanding anything contained in these regulations,

a) the generic tariff determined for Solar PV projects based on the capital cost and other norms applicable for the year 2010-11 shall also apply for such projects during the year 2011-12; and

b) the generic tariff determined for Solar thermal projects based on the capital cost and other norms for the year 2010-11 shall also apply for such projects during the years 2011-12 and 2012-13,

provided that (i) the Power Purchase Agreements in respect of the Solar PV projects and Solar thermal projects as mentioned in this clause are signed on or before 31st March, 2011; and (ii) the entire capacity covered by the Power Purchase Agreements is commissioned on or before 31st March, 2012 in respect of Solar PV projects and on or before 31st March, 2013 in respect of Solar thermal projects.”

5. In pursuance of First Amendment to the RE Tariff Regulations, the Commission, through this order based on the financial principles and technology specific parameters, also proposes to determine tariff for FY 2010-11 and FY 2011-12 in case of solar photovoltaic power projects and for FY 2010-11, FY 2011-12 and FY 2012-13 for solar thermal power projects, subject to the condition that power purchase agreement (PPA) for such Solar PV and Solar thermal power projects

shall be signed before March 31, 2011 and entire capacity shall be commissioned on or before March 31, 2012 in case of solar PV projects and on or before March 31, 2013 in case of thermal projects.

6. The proposed generic levelled generation tariff for various renewable energy technologies other than solar, for 2010-11 and for solar PV projects for 2010-11 and 2011 – 12 and for solar thermal projects for 2010-11, 2011-12 and 2012-13 (subject to the conditions stipulated in the first amendment to RE Regulations as highlighted in the preceding para) are discussed below:

USEFUL LIFE

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

Renewable Energy projects	Years
Wind Energy	25
Small Hydro	35
Biomass	20
Non-fossil fuel co-generation	20
Solar PV	25
Solar Thermal	25

CONTROL PERIOD

8. Regulation 5 of the RE Regulations provides that the control period for determination of tariff for renewable energy projects (RE projects) shall be three years. The first year of the control period was from the date of notification of the RE

Regulations till 31.3.2010 and the second year of the control period shall by FY 2010-11. The Proviso to the said regulation stipulates that the tariff determined for the RE projects commissioned during the control period shall continue to be applicable for the entire duration of the tariff period as specified in Regulation 6 of the RE Regulations. However, the benchmark cost for Solar PV and Solar thermal may be reviewed by the Commission annually. Further, as per First Amendment to RE Regulations, generic tariff determined for solar photovoltaic power projects for year 2010-11 shall also apply for projects commissioned during 2011-12 also the generic tariff determined for solar thermal power projects for year 2010-11 shall also apply for projects commissioned during 2011-12 and 2012-13, subject to the conditions stipulated in the amendment.

TARIFF PERIOD

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

Renewable Energy Projects	Years
Wind Energy	13
Small Hydro (less than 5MW)	35
Small Hydro (between 5MW to 25 MW)	13
Biomass	13
Non-fossil fuel co-generation	13
Solar PV and Solar Thermal	25

In terms of clauses (4) and (5) of the said regulation, the tariff period specified above shall be reckoned from the date of commercial operation of the RE projects and the tariff determined under the regulations shall be applicable for the duration of the tariff period.

TARIFF STRUCTURE

10. Clause (1) of Regulation 9 of the RE Regulations stipulates that the tariff for RE projects shall be single part tariff consisting of the following fixed cost components:

- (a) Return on equity;
- (b) Interest on loan capital;
- (c) Depreciation;
- (d) Interest on working capital;
- (e) Operation and maintenance expenses;

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

TARIFF DESIGN

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

“(1) The generic tariff shall be determined on levellised basis for the Tariff Period.

Provided that for renewable energy technologies having single part tariff with two components, tariff shall be determined on levellised basis considering the year of

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

- (2) For the purpose of levellised tariff computation, the discount factor equivalent to weighted average cost of capital shall be considered.*
- (3) Levellisation shall be carried out for the 'useful life' of the Renewable Energy while tariff shall be specified for the period equivalent to 'Tariff Period.'*

LEVELLISED TARIFF

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

Discount Factor

The discount factor considered for this purpose is equal to the weighted average cost of the capital on the basis of normative debt: equity ratio (70:30) specified in the Regulations. Considering the normative debt equity ratio and weighted average of the rates for interest and equity component, the discount factor is calculated.

Interest Rate considered for the loan component (i.e. 70%) of Capital Cost is 13.39% (as explained later). For equity component (i.e. 30%) rate of Return on Equity (ROE) for the first ten (10) years is 19% and for 11th year onward till useful life of the RE project the rate is 24%. Based on these rates, the weighted average of rate of ROE has been calculated which is around 22% (ranging from 21.5% to 22.5% depending on useful life of RE technologies).

The discount factor derived by this method for each technology is as shown in the following table:

Details	Wind Energy	Small Hydro				Biomass	Non-fossil fuel co-generation	Solar PV	Solar Thermal
		Less than 5 MW (Himachal Pradesh, Uttarakhand and North Eastern States)	Between 5 MW to 25 MW (Himachal Pradesh, Uttarakhand and North Eastern States)	Other States (below 5 MW)	Other states (5 MW to 25 MW)				
Discount Rate (%)	15.97	16.14	16.14	16.14	16.14	15.82	15.82	15.97	15.97

CAPITAL COST

13. Regulation 12 of the RE Regulations stipulates that the norms for the capital cost as specified in the technology specific chapter shall be inclusive of all capital works like plant and machinery, civil works, erection and commissioning, financing and interest during construction, and evacuation infrastructure up to inter-connection point. The Commission has specified the normative capital cost, applicable for the first year of control period i.e. FY 2009-10, for various RE technologies viz Wind Energy, Small Hydro Power, Biomass Power, Non-Fossil Fuel based Cogeneration Solar PV and Solar Thermal Projects.

In order to determine the normative capital cost for the remaining years of the control period, the regulations stipulate the indexation mechanism, for Wind Energy, Small Hydro Power, Biomass Power and Non-Fossil Fuel based Cogeneration. However, the Capital Cost norms for Solar PV and Solar Thermal Power Projects shall be reviewed on annual basis. The indexation mechanism

shall take into account adjustments in capital cost with the changes in Wholesale Price Index of Steel and Wholesale Price Index of Electrical Machinery as per formulation stipulated under the RE Tariff Regulations, which is reproduced below.

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

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

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

Where,

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

$P\&M_{(n)}$ = Plant and Machinery Cost for nth year

$P\&M_{(0)}$ = Plant and Machinery Cost for the base year

Note: $P\&M_{(0)}$ is to be computed by dividing the base capital cost (for the first year of the control period) by $(1+F_1+F_2+F_3)$. *Factors F_1, F_2, F_3 for each RE technology has been specified separately, as summarized in following table.*

$d_{(n)}$ = Capital Cost escalation factor for year (n) of Control Period

$SI_{(n-1)}$ = Average WPI Steel Index prevalent for calendar year (n-1) of the Control Period

$SI_{(0)}$ = Average WPI Steel Index prevalent for calendar year (0) at the beginning of the Control Period i.e. January 2008 to December 2008

$EI_{(n-1)}$ = Average WPI Electrical Machinery Index prevalent for calendar year (n-1) of the Control Period

$EI_{(0)}$ = Average WPI Electrical and Machinery Index prevalent for calendar year (0) at the beginning of the Control Period i.e. January 2008 to December 2008

- a = Constant to be determined by Commission from time to time,
(for weightage to Steel Index)
- b = Constant to be determined by Commission from time to time,
(for weightage to Electrical Machinery Index)
- F₁ = Factor for Land and Civil Works
- F₂ = Factor for Erection and Commissioning
- F₃ = Factor for IDC and Financing Cost

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

Parameters	Wind Energy	Small Hydro Projects	Biomass Power	Non-Fossil Fuel Based Cogeneration
a	0.6	0.6	0.7	0.7
b	0.4	0.4	0.3	0.3
F1	0.08	0.16	0.10	0.10
F2	0.07	0.10	0.09	0.09
F3	0.10	0.14	0.14	0.14

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

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

Technology specific capital cost of RE projects is discussed hereinunder:

(A) Capital Cost of Wind Energy for FY 2010-11

14. Wind Power projects located at the wind sites having minimum annual Wind Power Density(WPD) of 200 Watt/m² measured at hub height of 50 meters and using new wind turbine generators are eligible for tariff determination under the RE Regulations. Regulation 24 provides that the capital cost for wind energy project shall include wind turbine generator including its auxiliaries, land cost, site development charges and other civil works, transportation charges, evacuation cost up to inter-connection point, financing charges and IDC.

The Commission under Regulation 24 (2) has specified the normative capital cost for wind energy projects as Rs. 515Lakh/MW for FY 2009-10 which shall be linked to the indexation mechanism specified under Regulation 25 of the RE Tariff Regulations. In line with the indexation mechanism specified in Regulation 25 of the RE Regulations, the normative capital cost of the Wind Energy Projects shall be **Rs.467Lakh/MW for FY 2010-11**. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2010-11 thereof, has been enclosed as **Appendix-1** of this Order.

(B) Capital cost of Small Hydro Projects for FY 2010-11

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

16. The Commission under Regulation 28 (1) has specified the normative capital cost for small hydro projects for FY 2009-10 which shall be linked to the indexation mechanism specified under Regulation 29 of the RE Regulations.

Region	Project Size	Capital Cost (FY 2009-10) (RsLakh/ MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	700
	5 MW to 25 MW	630
Other States	Below 5 MW	550
	5 MW to 25 MW	500

17. In line with the indexation mechanism, specified in Regulation 29 of the RE Tariff Regulations, the normative capital cost for FY 2010-11 for Small Hydro Projects shall be as under,

Region	Project Size	Capital Cost (FY 2010-11) (RsLakh/ MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	635
	5 MW to 25 MW	571
Other States	Below 5 MW	499
	5 MW to 25 MW	454

The detailed computations of the indexation mechanism and the determination of the capital cost for FY 2010-11 thereof, has been enclosed as **Appendix-2** of this Order.

(C) Capital Cost of Biomass based Power Projects for FY 2010-11

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

19. The Commission under Regulation 34 has specified the normative capital cost for the biomass power projects based on Rankine cycle technology application using water cooled condenser as Rs.450 Lakh/MW for FY 2009-10 which shall be linked to the indexation mechanism specified under Regulation 35 of the RE Tariff Regulations. In line with the indexation mechanism specified in Regulation 35 of the RE Regulations, the normative capital cost of the biomass power projects based on Rankine cycle technology application using water cooled condenser shall be **Rs.403Lakh/MW for FY 2010-11**. The detailed calculations of the indexation mechanism and determination of the capital cost for FY 2010-11 thereof, has been enclosed as **Appendix -3** of this Order.

(D) Capital Cost of Non-fossil fuel based Cogeneration Projects for FY 2010-11

20. Non-fossil based cogeneration has been defined as the process in which more than one form of energy is produced in a sequential manner by using biomass. As per Regulation 4(4) of the RE Regulations, a project to qualify as the non-fossil based co-generation project must be using new plant and machinery with topping cycle mode of operation which uses the non-fossil fuel input for power generation and utilizes the thermal energy generated for useful heat applications in other industrial activities simultaneously, and where the sum of useful power output and half of useful thermal output is greater than 45% of the plant's energy consumption during the season.
21. The Commission under Regulation 47 has specified the normative capital cost for the Non-Fossil Fuel Based Cogeneration Projects as Rs.445 Lakh/MW for FY

2009-10 which shall be linked to the indexation mechanism specified under Regulation 48 of the RE Tariff Regulations. In line with the indexation mechanism specified in Regulation 48 of the RE Regulations, the normative capital cost of the Non-Fossil Fuel based Cogeneration power projects shall be **Rs.398Lakh/MW for FY 2010-11**. The detailed computations of the indexation mechanism and determination of the capital cost for FY 2010-11 thereof, has been enclosed as **Appendix-4** of this Order.

(E) Capital Cost of Solar PV Projects for FY 2010-11

22. Solar Photo Voltaic (PV) power projects which directly convert solar energy into electricity using the crystalline silicon or thin film technology or any other technology as approved by the Ministry of New and Renewable Energy and are connected to the grid qualify for the purpose of tariff determination under the RE Regulations.
23. As per Regulation 5, the Commission has reviewed vide the Order dated 25.02.2010 in Petition no. 13/2010 benchmark capital cost for Solar PV power projects and it shall be **Rs.1690 Lakh/MW for the FY 2010-11**. Further as per the first amendment to RE Regulations, the generic tariff determined for solar PV projects based on the benchmark capital cost and other norms applicable for 2010-11 shall also be applicable for such projects commissioned during 2011-12 subject to the condition that the power purchase agreement (PPA) is signed on or before 31.03.2011 and entire capacity covered under the PPA is signed on or before 31.03.2012.

(F) Solar Thermal Power Project for FY 2010-11

24. In order to qualify for tariff determination under the RE Regulations, Solar Thermal Power Project shall be based on concentrated solar power technologies with line focusing or point focusing as may be approved by the Ministry of New and Renewable Energy and which uses direct sunlight to generate sufficient heat to operate a conventional power cycle to generate electricity.
25. As per Regulation 5, the Commission has reviewed by the Order dated 25.02.2010 in Petition no. 13/2010 benchmark capital cost for Solar Thermal Power projects and it shall be **Rs.1530 Lakh/MW** for the FY 2010-11. Further as per the first amendment to RE Regulations, the generic tariff determined for solar thermal projects based on the benchmark capital cost and other norms applicable for 2010-11 shall also be applicable for such projects commissioned during 2011-12 2012-13 subject to the condition that the power purchase agreement (PPA) is signed on or before 31.03.2011 and entire capacity covered under the PPA is signed on or before 31.03.2013.
26. The capital cost for the second year (FY 2010-11) of the control period in respect of the renewable energy power generating stations is summarized as under:

Renewable Energy Projects	Capital Cost Norm for FY 2010-11 (Rs. Lakh/MW)
(1) Wind Energy	467
(2) Small Hydro	
(a) Himachal Pradesh, Uttarakhand and North Eastern States (less than 5 MW)	635
(b) Himachal Pradesh, Uttarakhand and North Eastern States (5MW to 25 MW)	571
(c) Other States (below 5 MW)	499

(d) Other States (5MW to 25 MW)	454
(3) Biomass power projects	403
(4) Non-fossil fuel based co-generation projects	398
(5) Solar Photovoltaic power projects	1690
(6) Solar Thermal power projects	1530

DEBT-EQUITY RATIO

27. Clause (1) of Regulation 13 of the RE Regulations provides that the debt-equity ratio of 70:30 is to be considered for determination of generic tariff based on *suo motu* petition.
28. Based on the debt equity ratio of 70:30, the debt and equity components of the normative capital cost for determination of tariff for the RE projects have been worked out as under:

Renewable Energy Projects	Debt (Rs Lakh)	Equity (Rs Lakh)
(1) Wind Energy (for all zones)	326.99	140.14
(2) Small Hydro		
Himachal Pradesh, Uttarakhand and North Eastern States (below 5 MW)	444.46	190.48
Himachal Pradesh, Uttarakhand and North Eastern States (5 MW to 25 MW)	400.01	171.43
Other States (below 5 MW)	349.21	149.66
Other States (5MW to 25 MW)	317.47	136.06
(3) Biomass	281.78	120.76
(4) Non-fossil fuel co-generation	278.65	119.42
(5) Solar PV	1183.00	507.00
(6) Solar Thermal	1071.00	459.00

RETURN ON EQUITY

29. Clause (1) of Regulation 16 of the RE Regulations provides that the value base for the equity shall be 30% of the capital cost for generic tariff determination. Clause (2) of the said regulation stipulates the normative return on equity as under:

(a) Pre-tax 19% per annum for the first 10 years, and

(b) Pre-tax 24% per annum from the 11th year onwards.

30. In accordance with the above regulations, return on equity has been worked out in respect of the RE generating technologies taking the value base of equity as 30% of the capital cost as under:

Details	Wind Energy	Small Hydro				Biomass	Non-fossil fuel co-generation	Solar PV	Solar Thermal
		Less than 5 MW (Himachal Pradesh, Uttarakhand and North Eastern States)	Between 5 MW to 25 MW (Himachal Pradesh, Uttarakhand and North Eastern States)	Other States (below 5 MW)	Other states (5 MW to 25 MW)				
Equity opening (Rs in lakh)	140.14	190.48	171.43	149.66	136.06	120.76	119.42	507	459
Return on Equity for the first 10 years (%)	19	19	19	19	19	19	19	19	19
Return on Equity after first 10 years (%)	24	24	24	24	24	24	24	24	24
Weighted average rate on ROE (%)	22	22.57	22.57	22.57	22.57	21.50	21.50	22	22

INTEREST ON LOAN

31. Clause (1) of Regulation 14 of the RE Regulations provides that the loan tenure of 10 years is to be considered for the purpose of determination of tariff for RE projects. Clause (2) of the said regulation provides for computation of the rate of interest on loan as under:

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

(b) For the purpose of computation of tariff, the normative interest rate shall be considered as average long term prime lending rate (LTPLR) of State Bank of India (SBI) prevalent during the previous year plus 150 basis points.

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

32. In terms of the above, the computations of interest on loan for determination of tariff in respect of the RE projects treating the value base of loan as 70% of the capital cost and the weighted average of SBI prime lending rate for the financial year 2009-10 (i.e. 11.89%) plus 150 basis points (equivalent to interest rate of 13.39%), are as under:

Period	SBI PLR
1-Apr- 2009 to 28-June 2009	12.25%
29-Jun-2009 to 15-Feb-2010	11.75%
Avg. SBI PLR	11.89%

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

Details	Wind Energy	Small Hydro				Biomass	Non-fossil fuel co-generation	Solar PV	Solar Thermal
		Less than 5 MW (HP, Uttarakhand & North Eastern States)	Between 5 MW to 25MW (HP, Uttarakhand & North Eastern States)	Other States (below 5 MW)	Other states (5 MW to 25 MW)				
Gross loan opening (Rs in lakh)	326.99	444.46	400.01	349.21	317.47	281.78	278.65	1183	1071
Period of repayment	10	10	10	10	10	10	10	10	10
Rate of interest (%)	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39

DEPRECIATION

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

“(1) The value base for the purpose of depreciation shall be the Capital Cost of the asset admitted by the Commission. The Salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the Capital Cost of the asset.

(2) Depreciation per annum shall be based on ‘Differential Depreciation Approach’ over loan tenure and period beyond loan tenure over useful life computed on ‘Straight Line Method’. The depreciation rate for the first 10 years of the Tariff Period shall be 7% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 11th year onwards.

(3) Depreciation shall be chargeable from the first year of commercial operation.

Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.”

34. In accordance with the above, the rate of depreciation for the first 10 years has been considered as 7% and the rate of depreciation from the 11th year onwards has been spread over the balance useful life of the RE project as under:

Details	Wind Energy	Small Hydro	Biomass	Non-fossil fuel co-generation	Solar PV	Solar Thermal
Useful Life (in years)	25	35	20	20	25	25
Rate of depreciation for 10 years (%)	7.00	7.00	7.00	7.00	7.00	7.00
Rate of depreciation after first 10 years (%)	1.33	0.80	2.00	2.00	1.33	1.33

INTEREST ON WORKING CAPITAL

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

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

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

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

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

Biomass Power and Non-fossil fuel Co-generation

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

(3) Interest on Working Capital shall be at interest rate equivalent to average State Bank of India short term PLR during the previous year plus 100 basis points”

36. Receivables equivalent to two months of actual fixed cost and variable cost, (as applicable for biomass power and non-fossil fuel based co-generation) have been considered. The interest on working capital has been worked out as specified below for determination of tariff of the RE projects:

Details	Wind Energy	Small Hydro	Biomass	Non-fossil fuel co-generation	Solar PV	Solar Thermal
(A) For Fixed charges						
(i) O&M expenses (month)	1	1	1	1	1	1
(ii) Maintenance spares (%) of O&M expenses	15	15	15	15	15	15
(iii) Receivables (months)	2	2	2	2	2	2
(B) For Variable Charges						
Biomass/Bagasse stock (months)	-	-	4	4	-	-
(C) Interest On Working Capital (%)	12.89	12.89	12.89	12.89	12.89	12.89

Source for interest on working capital: State Bank of India (www.statebankofindia.com)

OPERATION AND MAINTENANCE EXPENSES

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

“Operation and Maintenance Expenses

- (1) *Operation and Maintenance or O&M expenses’ shall comprise repair and maintenance (R&M), establishment including employee expenses, and administrative and general expenses.*
- (2) *Operation and maintenance expenses shall be determined for the Tariff Period based on normative O&M expenses specified by the Commission subsequently in these Regulations for the first Year of Control Period.*
- (3) *Normative O&M expenses allowed during first year of the Control Period (i.e.FY 2009-10) under these Regulations shall be escalated at the rate of 5.72% per annum over the Tariff Period.”*

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

(a) Wind Energy: Regulation 27 of RE Regulations provided that the normative O&M expenses for the first year of the control period (i.e. 2009-10) as Rs 6.50 lakh per MW and shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for wind energy as Rs 6.87Lakh/MW for FY 2010-11.

(b) Small Hydro: Regulation 32 of RE Regulations provided for the normative O&M expenses for small hydro projects for the year 2009-10 which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the table below presents the normative O&M Expenses considered by the Commission for small hydro power for FY 2010-11,

Region	Project Size	O&M expenses (Rs Lakh/MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW	22.20
	5 MW to 25 MW	15.86
Other States	Below 5 MW	17.97
	5 MW to 25 MW	12.69

(c) Biomass: Regulation 39 of RE Regulations provided that the normative O&M expenses for biomass based projects for the year 2009-10 to be Rs 20.25 lakh/MW and which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for biomass power as Rs 21.41 Lakh/MW for FY 2010-11

(d) Non-fossil fuel co-generation: As per Regulation 55 of RE Regulations, the normative O&M Expenses for non-fossil fuel co-generation projects for the year 2009-10 has been specified as Rs 13.35 lakh per MW which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M cost norm for non-fossil fuel based co-generation as Rs 14.11 Lakh/MW for FY 2010-11.

(e) Solar PV: Regulation 59 of RE Regulations provided that the normative O&M expenses for solar PV projects for the year 2009-10 to be Rs 9.00 lakh/MW which shall be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M expense norm for solar PV power project as Rs 9.51 Lakh/MW for FY 2010-11.

(f) Solar Thermal: Regulation 63 of the RE Regulations specified the normative O&M expenses for solar thermal power projects during the first year of operation as Rs 13.0Lakh/MW to be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, the Commission has considered O&M expense norm for solar thermal power project as Rs 13.74 Lakh/MW for FY 2010-11

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

CAPACITY UTILISATION FACTOR

40. Regulations 26, 30, 58 and 62 of the RE Regulations specify the norms for Capacity Utilization Factor (CUF) in respect of the renewable energy generating stations except biomass and non- fossil fuel based cogeneration as per the details given in the table below which has been considered for determination of tariff.

Renewable Energy Projects	CUF
(A) Wind Energy Annual Mean Wind Power Density (W/m ²) Wind zone-1 (200-250) Wind zone-2 (250-300) Wind zone-3 (300-400) Wind zone-4 (above 400)	20% 23% 27% 30%
(B) Small Hydro (i) Himachal Pradesh, Uttarakhand and North Eastern States (ii) Other States	45% 30%
(C) Solar PV	19%
(D) Solar Thermal	23%

41. In terms of clause (2) of Regulation 26 of the RE Regulations, the annual mean wind power density specified above is to be measured at 50 meter hub-height and as per clause (3), for the purpose of classification of wind energy project into particular wind zone class, the State-wise wind power density map prepared by Centre for Wind Energy Technology (C-WET) annexed as schedule to the said regulations, is to be considered.

PLANT LOAD FACTOR (PLF)

42. Regulation 36 of the RE Regulations specifies the plant load factor for biomass based renewable energy generating stations as given in the table below which has been considered for determination of fixed charges component of tariff.

Renewable Energy Projects	PLF (%)
Biomass	
(a) During stabilization (6 months)	60%
(b) During first year after stabilization	70%
(c) Second year onwards	80%

43. Regulation 49 of the RE Regulations stipulates the plant load factor for non-fossil fuel based co-generation projects as under, computed on the basis of plant availability for number of operating days considering the operations during crushing season and off-season and load factor of 92%. The number of operating days for different States as specified in the regulations is as under:

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

AUXILIARY POWER CONSUMPTION

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

Renewable Energy Projects	Auxiliary Consumption factor
Small Hydro	1.0%
Biomass	10.0%
Non-fossil fuel co-generation	8.5%
Solar Thermal	10.0%

STATION HEAT RATE

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

Renewable Energy Projects	SHR (kCal / kWh)
Biomass	3800
Non-fossil fuel co-generation (for power component)	3600

FUEL

(a) Fuel Mix

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

(b) Use of fossil fuel

47. In terms of Regulation 41 of the RE Regulations, the use of fossil fuel is to be limited to the extent of 15% of total fuel consumption on annual basis and in terms

of Regulation 42 of the said regulations the mechanism for monitoring the use of fossil fuel is as under:

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

- (a) Quantity of fuel (in tonnes) for each fuel type (biomass fuels and fossil fuels) consumed and procured during the month for power generation purposes;*
 - (b) Cumulative quantity (in tonnes) of each fuel type consumed and procured till the end of that month during the year;*
 - (c) Actual (gross and net) energy generation (denominated in units) during the month;*
 - (d) Cumulative actual (gross and net) energy generation (denominated in units) until the end of that month during the year;*
 - (e) Opening fuel stock quantity (in tonnes);*
 - (f) Receipt of fuel quantity (in tonnes) at the power plant site; and*
 - (g) Closing fuel stock quantity (in tonnes) for each fuel type (biomass fuels and fossil fuels) available at the power plant site.*
- (2) Non-compliance with the condition of fossil fuel usage by the project developer, during any financial year, shall result in withdrawal of applicability of tariff as per these Regulations for such biomass based power project.”*

(c) Calorific value

48. In terms of Regulation 43 of the RE Regulations the calorific value of biomass fuel(s) for determination of tariff is as under:

State	Calorific Value(kCal/kg)
Andhra Pradesh	3275
Haryana	3458
Maharashtra	3611
Madhya Pradesh	3612
Punjab	3368

State	Calorific Value(kCal/kg)
Rajasthan	3689
Tamilnadu	3300
Uttar Pradesh	3371
Other States	3467

49. In terms of Regulation 52 of the said regulations, the gross calorific value for bagasse to be considered in case of non-fossil fuel co-generation projects is 2250 kCal/kg and for the use of biomass fuels other than bagasse, the calorific value as specified above shall be applicable.

(d) Fuel cost

50. The Commission, in terms of Regulation 44 of the RE Regulations, has specified the biomass fuel price applicable during the period 2009-10 and has specified fuel price indexation mechanism, in case developer wishes to opt, for the remaining years of the control period. The detailed computations of the fuel price indexation mechanism and the determination of the biomass fuel prices for FY 2010-11 thereof, has been enclosed as **Appendix-5** of this Order. Accordingly, the biomass fuel price applicable for FY 2010-11 shall be as indicated in the table below,

State	Biomass price (Rs/MT)
Andhra Pradesh	1343
Haryana	2238
Maharashtra	1859
Madhya Pradesh	1341
Punjab	2159
Rajasthan	1881
Tamil Nadu	1882
Uttar Pradesh	1567
Other States	1855

51. The Commission, in terms of Regulation 53 of the RE Regulations, has specified the price of bagasse applicable during the period 2009-10 and has specified fuel price indexation mechanism, in case developer wishes to opt, for the remaining years of the control period. The detailed computations of the fuel price indexation mechanism and the determination of the bagasse fuel prices for FY 2010-11 thereof, has been enclosed as **Appendix-6** of this Order. Accordingly, the price of bagasse (for non-fossil fuel based co-generation projects) applicable for FY 2010-11 shall be as in the table below,

State	Bagasse Price (Rs/MT)
Andhra Pradesh	928
Haryana	1456
Maharashtra	1159
Madhya Pradesh	835
Punjab	1443
Tamilnadu	1283
Uttar Pradesh	1046
Other States	1200

Subsidy or incentive by the Central / State Government

52. Regulation 22 of the RE Regulations provides as under:

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

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

i. Assessment of benefit shall be based on normative capital cost, accelerated depreciation rate as per relevant provisions under Income Tax Act and corporate income tax rate.

ii. Capitalisation of RE projects during second half of the fiscal year. Per unit benefit shall be derived on levellised basis at discount factor equivalent to weighted average cost of capital.”

53. In terms of the above regulation, for the projects availing the benefit of Section 80 IA of the Income Tax Act, 1961, the Minimum Alternate Tax (MAT) @ 16.995% (15% MAT+10% surcharge+3% education cess) for the first ten years and thereafter the normal tax rate @ 33.99% (30% IT rate+ 10% surcharge +3% Education cess) has been considered. For the purpose of determining net depreciation benefits, depreciation @ 5.28% as per straight line method (Book depreciation as per Companies Act, 1956) has been compared with depreciation as per Income Tax rate i.e. 80% of the written down value method and depreciation for the first year has been calculated at the rate of 50% of 80% i.e 40%, as project is capitalized during the second half of the financial year as per proviso (ii) to Regulation 22. Tax benefit has been worked out as per normal tax rate on the net depreciation benefit. Per unit levellised accelerated depreciation benefit has been computed considering the weighted average cost of capital as discount factor.
54. In the light of the discussion made in the preceding paragraphs, the generic tariffs of the following RE projects for the financial year 2010-11 have been determined as under:

RE Technologies as per CERC RE Tariff Regulations Norms for FY 2010-11

Particular	Levellised Total Tariff (FY2010-11)	Benefit of Accelerated Depreciation (if availed)	Net Levellised Tariff (upon adjusting for Accelerated Depreciation benefit) (if availed)
	(Rs / kWh)	(Rs/kWh)	(Rs/kWh)
Wind Energy			
Wind Zone -1 (CUF 20%)	5.07	0.78	4.29
Wind Zone -2 (CUF 23%)	4.41	0.68	3.73
Wind Zone -3 (CUF 27%)	3.75	0.58	3.18
Wind Zone -4 (CUF 30%)	3.38	0.52	2.86
Small Hydro Power Project			
HP, Uttarakhand and NE States (Below 5MW)	3.59	0.48	3.11
HP, Uttarakhand and NE States (5MW to 25 MW)	3.06	0.43	2.63
Other States (Below 5 MW)	4.26	0.57	3.70
Other States (5 MW to 25 MW)	3.65	0.51	3.14
Solar Power Projects			
Solar PV	17.91	2.96	14.95
Solar Thermal	15.31	2.46	12.85

State	Levellised Fixed Cost	Variable Cost (FY 2010-11)	Applicable Tariff Rate (FY 2010-11)	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 Project					
Andhra Pradesh	1.80	1.73	3.53	0.19	3.34
Haryana	1.89	2.73	4.62	0.19	4.43
Madhya Pradesh	1.78	1.57	3.35	0.19	3.16
Maharashtra	1.84	2.17	4.01	0.19	3.82
Punjab	1.88	2.71	4.59	0.19	4.40

State	Levellised Fixed Cost	Variable Cost (FY 2010-11)	Applicable Tariff Rate (FY 2010-11)	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)
Rajasthan	1.83	2.15	3.99	0.19	3.80
Tamil Nadu	1.86	2.41	4.26	0.19	4.07
Uttar Pradesh	1.82	1.96	3.78	0.19	3.59
Others	1.84	2.26	4.10	0.19	3.91
Non-Fossil Fuel based Cogeneration					
Andhra Pradesh	2.61	1.62	4.23	0.32	3.91
Haryana	2.32	2.55	4.86	0.27	4.59
Maharashtra	2.03	2.03	4.05	0.24	3.81
Madhya Pradesh	2.22	1.46	3.68	0.27	3.41
Punjab	2.31	2.52	4.84	0.27	4.57
Tamil Nadu	2.05	2.24	4.29	0.24	4.05
Uttar Pradesh	2.62	1.83	4.45	0.32	4.13
Others	2.28	2.10	4.38	0.27	4.11

55. The detailed computations of the normative Capital Cost in respect of various RE technologies for FY 2010-11, in line with the indexation mechanism stipulated under RE Tariff Regulations, have been enclosed to this Order as per the details given hereunder:

S No	Renewable Energy Projects	Appendix
A	Wind Power Projects	Appendix 1
B	Small Hydro Power Projects	Appendix 2
C	Biomass Power Projects	Appendix 3
D	Non-Fossil Fuel Based Cogeneration	Appendix 4

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

S No	Renewable Energy Projects	Annexure
A	Wind Power Projects	
	Wind Zone-I	Annexure 1A
	Wind Zone-II	Annexure 1B
	Wind Zone III	Annexure 1C
	Wind Zone IV	Annexure 1D
B	Small Hydro Power Projects	
	Projects Less than 5 MW for HP, Uttarakhand and NE States	Annexure 2A
	Projects between 5 MW and 25 MW for HP, Uttarakhand and NE States	Annexure 2B
	Projects less than 5 MW for other States	Annexure 2C
	Projects between 5 MW and 25 MW for other States	Annexure 2D
C	Biomass Power Projects	
	Andhra Pradesh	Annexure 3A
	Haryana	Annexure 3B
	Maharashtra	Annexure 3C
	Punjab	Annexure 3D
	Madhya Pradesh	Annexure 3E
	Rajasthan	Annexure 3F
	Uttar Pradesh	Annexure 3G
	Tamil Nadu	Annexure 3H
	Other	Annexure 3I
D	Non-Fossil Fuel Based Cogeneration	
	Andhra Pradesh	Annexure 4A
	Haryana	Annexure 4B

S No	Renewable Energy Projects	Annexure
	Maharashtra	Annexure 4C
	Madhya Pradesh	Annexure 4D
	Punjab	Annexure 4E
	Uttar Pradesh	Annexure 4F
	Tamil Nadu	Annexure 4G
	Other	Annexure 4H
E	Solar Projects	
	Solar PV Projects	Annexure 5A
	Solar Thermal Projects	Annexure 5B

57. Above generic tariff is proposed for the RE power projects (other than solar projects) commissioned during the FY 2010-11 and for solar PV projects for the FY 2010-11 and FY 2011- 12 and for solar thermal power projects for the FY 2010-11, FY 2011- 12 and FY 2012- 13 (subject to the conditions for solar projects as stipulated in the first amendment to the RE Regulations) fulfilling the conditions of the RE regulations.
58. Comments/suggestions of the stakeholders on the above proposals are invited by 08.03.201. We direct that the matter be notified for hearing on 09.03.2010.

Sd/-
[V.S.VERMA]
MEMBER

Sd/-
[S. JAYARAMAN]
MEMBER

Sd/-
[Dr. PRAMOD DEO]
CHAIRPERSON

New Delhi dated the 26th February, 2010

Capital Cost Indexation for Wind Power Projects (FY2010-11)

Indexation Formulation $CC(n)=P\&M(n)*[1+F_1+F_2+F_3]$ $dn = (a*(SI_n-1/SI_0)-1)+b*(EI_n-1/EI_0)-1)/(a+b)$ $P\&M(n)=P\&M(0)*(1+dn)$

Variable	Description	Value
a	Weightage for Steel Index	0.6
b	Weightage for Electrical Machinery Index	0.4
F ₁	Factor for Land and Civil Work	0.08
F ₂	Factor for Erection and Commissioning	0.07
F ₃	Factor for IDC and Financing	0.10

Month/Year	Electrical & Machinery		Iron & Steel	
	2009	2008	2009	2008
January	146.70	145.20	303.10	279.90
February	146.70	145.20	286.60	281.70
March	147.30	145.70	288.40	337.70
April	146.40	147.30	285.80	359.00
May	146.70	149.50	286.30	353.30
June	146.20	152.80	286.40	357.60
July	146.10	153.20	286.50	362.60
August	147.00	153.20	293.90	362.80
September	149.00	152.90	290.00	360.40
October	148.40	152.90	291.40	355.10
November	149.20	153.40	290.80	329.20
December	148.20	149.10	290.80	321.30
Average	147.33	150.00	290.00	338.40

Parameter	Description	Value
CC ₍₀₎ (RsL/MW)	Capital Cost for the Base Year	515.00
P&M ₍₀₎ (RsL/MW)	Plant & Machinery Cost for the Base Year	412.00
dn	Capital Cost Escalation Factor	-9.29%
P&M_(n) (RsL/MW)	Plant & Machinery Cost for the nth Year (FY 2010-11)	373.71
CC_(n) (RsL/MW)	Capital Cost for the nth Year (FY2010-11)	467.13

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

Capital Cost Indexation for Small Hydro Power Projects (FY2010-11)

Indexation Formulation $CC(n)=P\&M(n)*[1+F_1+F_2+F_3]$ $dn = (a*(SI_n-1/SI_0)-1)+b*(EI_n-1/EI_0-1))/(a+b)$ $P\&M(n)=P\&M(0)*(1+dn)$

Variable	Description	Value
a	Weightage for Steel Index	0.6
b	Weightage for Electrical Machinery Index	0.4
F ₁	Factor for Land and Civil Work	0.16
F ₂	Factor for Erection and Commissioning	0.10
F ₃	Factor for IDC and Financing	0.14

Month/Year	E&M		Iron & Steel	
	2009	2008	2009	2008
January	146.70	145.20	303.10	279.90
February	146.70	145.20	286.60	281.70
March	147.30	145.70	288.40	337.70
April	146.40	147.30	285.80	359.00
May	146.70	149.50	286.30	353.30
June	146.20	152.80	286.40	357.60
July	146.10	153.20	286.50	362.60
August	147.00	153.20	293.90	362.80
September	149.00	152.90	290.00	360.40
October	148.40	152.90	291.40	355.10
November	149.20	153.40	290.80	329.20
December	148.20	149.10	290.80	321.30
Average	147.33	150.00	290.00	338.40

Parameter	Description	HP/Uttarakhand/NE		Other States	
		< 5MW	5MW - 25MW	< 5MW	5MW - 25MW
CC ₍₀₎ (RsL/MW)	Capital Cost for the Base Year	700.00	630.00	550.00	500.00
P&M ₍₀₎ (RsL/MW)	Plant & Machinery Cost for the Base Year	500.00	450.00	392.86	357.14
dn	Capital Cost Escalation Factor	-9.29%	-9.29%	-9.29%	-9.29%
P&M_(n) (RsL/MW)	Plant & Machinery Cost for the nth Year (FY 2010-11)	453.53	408.17	356.34	323.95
CC_(n) (RsL/MW)	Capital Cost for the nth Year (FY2010-11)	634.94	571.44	498.88	453.53

Source of WPI (Iron & Steel and Electrical and Machinery) : Office of Economic Advisor, Ministry of Commerce and Industry (www.eaindustry.nic.in) **Appendix- 3**

Capital Cost Indexation for Biomass Power Projects (FY2010-11)

Indexation Formulation $CC(n)=P\&M(n)*[1+F_1+F_2+F_3]$ $dn = (a*(SI_n-1/SI_0)-1)+b*(EI_n-1/EI_0)-1)/(a+b)$ $P\&M(n)=P\&M(0)*(1+dn)$

Variable	Description	Value
a	Weightage for Steel Index	0.7
b	Weightage for Electrical Machinery Index	0.3
F ₁	Factor for Land and Civil Work	0.10
F ₂	Factor for Erection and Commissioning	0.09
F ₃	Factor for IDC and Financing	0.14

Month/Year	Electrical & Machinery		Iron & Steel	
	2009	2008	2009	2008
January	146.70	145.20	303.10	279.90
February	146.70	145.20	286.60	281.70
March	147.30	145.70	288.40	337.70
April	146.40	147.30	285.80	359.00
May	146.70	149.50	286.30	353.30
June	146.20	152.80	286.40	357.60
July	146.10	153.20	286.50	362.60
August	147.00	153.20	293.90	362.80
September	149.00	152.90	290.00	360.40
October	148.40	152.90	291.40	355.10
November	149.20	153.40	290.80	329.20
December	148.20	149.10	290.80	321.30
Average	147.33	150.00	290.00	338.40

Parameter	Description	Value
CC ₍₀₎ (RsL/MW)	Capital Cost for the Base Year	450.00
P&M ₍₀₎ (RsL/MW)	Plant & Machinery Cost for the Base Year	338.35
dn	Capital Cost Escalation Factor	-10.55%
P&M_(n) (RsL/MW)	Plant & Machinery Cost for the nth Year (FY 2010-11)	302.66
CC_(n) (RsL/MW)	Capital Cost for the nth Year (FY2010-11)	402.54

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

Capital Cost Indexation for Non-Fossil Fuel Based Cogeneration Power Projects (FY2010-11)

Indexation Formulation $CC(n)=P\&M(n)*[1+F_1+F_2+F_3]$ $dn = (a*(SI_n-1/SI_0)-1)+b*(EI_n-1/EI_0-1))/(a+b)$ $P\&M(n)=P\&M(0)*(1+dn)$

Variable	Description	Value
a	Weightage for Steel Index	0.7
b	Weightage for Electeical Machinery Index	0.3
F ₁	Factor for Land and Civil Work	0.10
F ₂	Factor for Erection and Commissioning	0.09
F ₃	Factor for IDC and Financing	0.14

Month/Year	Electrical & Machinery		Iron & Steel	
	2009	2008	2009	2008
January	146.70	145.20	303.10	279.90
Febuary	146.70	145.20	286.60	281.70
March	147.30	145.70	288.40	337.70
April	146.40	147.30	285.80	359.00
May	146.70	149.50	286.30	353.30
June	146.20	152.80	286.40	357.60
July	146.10	153.20	286.50	362.60
August	147.00	153.20	293.90	362.80
September	149.00	152.90	290.00	360.40
October	148.40	152.90	291.40	355.10
November	149.20	153.40	290.80	329.20
December	148.20	149.10	290.80	321.30
Average	147.33	150.00	290.00	338.40

Parameter	Description	Value
CC ₍₀₎ (RsL/MW)	Capital Cost for the Base Year	445.00
P&M ₍₀₎ (RsL/MW)	Plant & Machinery Cost for the Base Year	334.59
dn	Capital Cost Escalation Factor	-10.55%
P&M_(n) (RsL/MW)	Plant & Machinery Cost for the nth Year (FY 2010-11)	299.30
CC_(n) (RsL/MW)	Capital Cost for the nth Year (FY2010-11)	398.07

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

Biomass Fuel Price across States for FY 2010-11

(as per Fuel Price Index Mechanism outlined under Regulation 45)

Fuel Price Indexation for Biomass Power Projects (FY2010-11)**Indexation Formulation**

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

Parameter	Values
WPI _(n-1)	229.7
WPI _(n)	246.5
IRC _(n-1)	2.98%
Pd _(n-1)	482.3
Pd _(n)	481.4
a	0.2
b	0.6
c	0.2

State	Biomass Price Rs/MT (2009-10)	Biomass Price Rs/MT (2010-11)
Andhra Pradesh	1301	1,343
Haryana	2168	2,238
Maharashtra	1801	1,859
Madhya Pradesh	1299	1,341
Punjab	2092	2,159
Rajasthan	1822	1,881
Tamil Nadu	1823	1,882
Uttar Pradesh	1518	1,567
Other States	1797	1,855

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

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

Bagasse Price across States for FY 2010-11

(as per Fuel Price Index Mechanism outlined under Regulation 54)

Fuel Price Indexation for Non-Fossil Fuel Based Cogeneration Power Projects (FY2010-11)**Indexation Formulation**

$$P_n = P_{n-1} \{a \cdot (WPI_n / WPI_{n-1}) + b \cdot (1 + IRC_{n-1}) + c \cdot (Pd_n / Pd_{n-1})\}$$

Parameter	Values
$WPI_{(n-1)}$	229.7
$WPI_{(n)}$	246.5
$IRC_{(n-1)}$	2.98%
$Pd_{(n-1)}$	482.3
$Pd_{(n)}$	481.4
a	0.2
b	0.6
c	0.2

State	Bagasse Price Rs/MT (2009-10)	Bagasse Price Rs/MT (2010-11)
Andhra Pradesh	899	928
Haryana	1411	1,456
Maharashtra	1123	1,159
Madhya Pradesh	809	835
Punjab	1398	1,443
Tamil Nadu	1243	1,283
Uttar Pradesh	1013	1,046
Other States	1163	1,200

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

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

**Annexure – 1A
(Wind Zone-1)**

Form 1.1 Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Base Case Wind Zone 1
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	20%
			Deration Factor	%	0.00%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	467
3	Sources of Fund		Tariff Period	Years	13
			<u>Debt: Equity</u>		
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	327
			Total Equity Amout	Rs Lacs	140
			<u>Debt Component</u>		
			Loan Amount	Rs Lacs	327
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
			<u>Equity Component</u>		
			Equity amount	Rs Lacs	140
Return on Equity for first 10 years	% p.a	19.00%			
RoE Period	Year	10			
Return on Equity 11th year onwards	% p.a	24.00%			
Weighted average of ROE		22.00%			
Discount Rate		15.97%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
			<u>Depreciation</u>		
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	1.33%
Years for 7% rate		10			
5	Working Capital		<u>For Fixed Charges</u>		
			O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
			<u>For Variable Charges</u>		
Interest On Working Capital	%	12.89%			
6	Operation & Maintenance	power plant (FY10-11)	Escalation	%	6.87
			Total O & M Expenses		5.72%

Form 1.2 Form Template for (Wind Power 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
Gross/Net Generation	MU		1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		6.87	7.26	7.68	8.12	8.58	9.08	9.59	10.14	10.72	11.34	11.99	12.67	13.40	14.16	14.97	15.83	16.73	17.69	18.70	19.77	20.90	22.10	23.36	24.70	26.11
Depreciation	Rs Lakh		32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23
Interest on term loan	Rs Lakh		41.59	37.21	32.84	28.46	24.08	19.70	15.32	10.95	6.57	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Interest on working Capital	Rs Lakh		2.58	2.50	2.43	2.35	2.28	2.21	2.14	2.08	2.01	1.95	1.51	1.54	1.58	1.62	1.66	1.71	1.76	1.81	1.86	1.92	1.98	2.04	2.11	2.18	2.25
Return on Equity	Rs Lakh		26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63
Total Fixed Cost	Rs Lakh		110.37	106.31	102.27	98.26	94.27	90.32	86.39	82.49	78.63	74.80	53.35	54.08	54.84	55.64	56.50	57.40	58.35	59.36	60.42	61.55	62.74	64.00	65.33	66.74	68.22

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
O&M expn	Rs/kWh	0.39	0.41	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.68	0.72	0.76	0.81	0.85	0.90	0.96	1.01	1.07	1.13	1.19	1.26	1.33	1.41	1.49
Depreciation	Rs/kWh	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Int. on term loan	Rs/kWh	2.37	2.12	1.87	1.62	1.37	1.12	0.87	0.62	0.37	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.15	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.12	0.13
RoE	Rs/kWh	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92
Total COG	Rs/kWh	6.30	6.07	5.84	5.61	5.38	5.15	4.93	4.71	4.49	4.27	3.05	3.09	3.13	3.18	3.22	3.28	3.33	3.39	3.45	3.51	3.58	3.65	3.73	3.81	3.89

Discount Factor		1	0.862	0.744	0.641	0.553	0.477	0.411	0.354	0.306	0.264	0.227	0.196	0.169	0.146	0.126	0.108	0.093	0.081	0.069	0.060	0.052	0.045	0.038	0.033	0.029	
Levillised Tariff	5.07	Rs/Unit																									

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	467.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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%
Book Depreciation	Rs Lakh	12.33	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66

Accelerated Depreciation																	
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	186.85	224.22	44.84	8.97	1.79	0.36	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	174.52	199.56	20.18	-15.70	-22.87	-24.31	-24.59	-24.65	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66
Tax Benefit	Rs Lakh	59.32	67.83	6.86	-5.33	-7.77	-8.26	-8.36	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38
Energy generation	MU	0.88	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.16	0.14

Levelised benefit	0.78	Rs/Unit
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**Annexure – 2A
(Wind Zone-2)**

Form 1.1 Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Base Case Wind Zone 2
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	23%
			Deration Factor	%	0.00%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	467
3	Sources of Fund		Tariff Period	Years	13
			<u>Debt: Equity</u>		
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	327
			Total Equity Amout	Rs Lacs	140
			<u>Debt Component</u>		
			Loan Amount	Rs Lacs	327
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
			<u>Equity Component</u>		
			Equity amount	Rs Lacs	140
			Return on Equity for first 10 years	% p.a	19.00%
			RoE Period	Year	10
Return on Equity 11th year onwards	% p.a	24.00%			
Weighted average of ROE		22.00%			
Discount Rate		15.97%			
4	Financial Assumptions	Fiscal Assumptions	Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
					0.0%
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	1.33%
			Years for 7% rate		10
5	Working Capital		<u>For Fixed Charges</u>		
			O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
			<u>For Variable Charges</u>		
Interest On Working Capital	%	12.89%			
6	Operation & Maintenance		power plant (FY10-11)		6.87
			Total O & M Expenses Escalation	%	5.72%

Form 1.2 Form Template for (Wind Power 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
Gross/Net Generation	MU		2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		6.87	7.26	7.68	8.12	8.58	9.08	9.59	10.14	10.72	11.34	11.99	12.67	13.40	14.16	14.97	15.83	16.73	17.69	18.70	19.77	20.90	22.10	23.36	24.70	26.11
Depreciation	Rs Lakh		32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23
Interest on term loan	Rs Lakh		41.59	37.21	32.84	28.46	24.08	19.70	15.32	10.95	6.57	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Interest on working Capital	Rs Lakh		2.58	2.50	2.43	2.35	2.28	2.21	2.14	2.08	2.01	1.95	1.51	1.54	1.58	1.62	1.66	1.71	1.76	1.81	1.86	1.92	1.98	2.04	2.11	2.18	2.25
Return on Equity	Rs Lakh		26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63
Total Fixed Cost	Rs Lakh		110.37	106.31	102.27	98.26	94.27	90.32	86.39	82.49	78.63	74.80	53.35	54.08	54.84	55.64	56.50	57.40	58.35	59.36	60.42	61.55	62.74	64.00	65.33	66.74	68.22

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
O&M expn	Rs/kWh		0.34	0.36	0.38	0.40	0.43	0.45	0.48	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.79	0.83	0.88	0.93	0.98	1.04	1.10	1.16	1.23	1.30
Depreciation	Rs/kWh		1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	0.31	0.31	0.31	0.31	0.31	0.31	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		2.06	1.85	1.63	1.41	1.20	0.98	0.76	0.54	0.33	0.11	0.00	0.00	0.00	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	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.11
RoE	Rs/kWh		1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
Total COG	Rs/kWh		5.48	5.28	5.08	4.88	4.68	4.48	4.29	4.09	3.90	3.71	2.65	2.68	2.72	2.76	2.80	2.85	2.90	2.95	3.00	3.05	3.11	3.18	3.24	3.31	3.39

Discount Factor			1	0.862	0.744	0.641	0.553	0.477	0.411	0.354	0.306	0.264	0.227	0.196	0.169	0.146	0.126	0.108	0.093	0.081	0.069	0.060	0.052	0.045	0.038	0.033	0.029
Levillised Tariff	4.41	Rs/Unit																									

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	467.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	12.33	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	13.45	0.00	0.00

Accelerated Depreciation																					
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	186.85	224.22	44.84	8.97	1.79	0.36	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	174.52	199.56	20.18	-15.70	-22.87	-24.31	-24.59	-24.65	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-13.45	0.00	0.00
Tax Benefit	Rs Lakh	59.32	67.83	6.86	-5.33	-7.77	-8.26	-8.36	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-4.57	0.00	0.00
Energy generation	MU	1.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.07	0.06

Levellised benefit	0.68	Rs/Unit
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**Annexure – 3A
(Wind Zone-3)**

Form 1.1 Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Base Case Wind Zone 3
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	27%
			Deration Factor	%	0.00%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	467
3	Sources of Fund		Tariff Period	Years	13
			<u>Debt: Equity</u>		
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	327
			Total Equity Amout	Rs Lacs	140
			<u>Debt Component</u>		
			Loan Amount	Rs Lacs	327
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
			<u>Equity Component</u>		
			Equity amount	Rs Lacs	140
Return on Equity for first 10 years	% p.a	19.00%			
RoE Period	Year	10			
Return on Equity 11th year onwards	% p.a	24.00%			
Weighted average of ROE		22.00%			
Discount Rate		15.97%			
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
			<u>Depreciation</u>		
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	1.33%
Years for 7% rate		10			
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
			<u>For Variable Charges</u>		
			Interest On Working Capital	%	12.89%
6	Operation & Maintenance		power plant (FY10-11)		6.87
			Total O & M Expenses Escalation	%	5.72%

Form 1.2 Form Template for (Wind Power 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
Gross/Net Generation	MU		2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
O&M Expenses	Rs Lakh		6.87	7.26	7.68	8.12	8.58	9.08	9.59	10.14	10.72	11.34	11.99	12.67	13.40	14.16	14.97	15.83	16.73	17.69	18.70	19.77	20.90	22.10	23.36	24.70	26.11	
Depreciation	Rs Lakh		32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23
Interest on term loan	Rs Lakh		41.59	37.21	32.84	28.46	24.08	19.70	15.32	10.95	6.57	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		2.58	2.50	2.43	2.35	2.28	2.21	2.14	2.08	2.01	1.95	1.51	1.54	1.58	1.62	1.66	1.71	1.76	1.81	1.86	1.92	1.98	2.04	2.11	2.18	2.25	
Return on Equity	Rs Lakh		26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63
Total Fixed Cost	Rs Lakh		110.37	106.31	102.27	98.26	94.27	90.32	86.39	82.49	78.63	74.80	53.35	54.08	54.84	55.64	56.50	57.40	58.35	59.36	60.42	61.55	62.74	64.00	65.33	66.74	68.22	

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	
O&M expn	Rs/kWh	0.29	0.31	0.32	0.34	0.36	0.38	0.41	0.43	0.45	0.48	0.51	0.54	0.57	0.60	0.63	0.67	0.71	0.75	0.79	0.84	0.88	0.93	0.99	1.04	1.10	
Depreciation	Rs/kWh	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	0.26	0.26	0.26	0.26	0.26	0.26	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	1.76	1.57	1.39	1.20	1.02	0.83	0.65	0.46	0.28	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	
RoE	Rs/kWh	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42
Total COG	Rs/kWh	4.67	4.49	4.32	4.15	3.99	3.82	3.65	3.49	3.32	3.16	2.26	2.29	2.32	2.35	2.39	2.43	2.47	2.51	2.55	2.60	2.65	2.71	2.76	2.82	2.88	

Discount Factor		1	0.862	0.744	0.641	0.553	0.477	0.411	0.354	0.306	0.264	0.227	0.196	0.169	0.146	0.126	0.108	0.093	0.081	0.069	0.060	0.052	0.045	0.038	0.033	0.029
Levillised Tariff	Rs/Unit	3.75																								

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	467.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	12.33	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	13.45	0.00	0.00

Accelerated Depreciation																					
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	186.85	224.22	44.84	8.97	1.79	0.36	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	174.52	199.56	20.18	-15.70	-22.87	-24.31	-24.59	-24.65	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-13.45	0.00	0.00
Tax Benefit	Rs Lakh	59.32	67.83	6.86	-5.33	-7.77	-8.26	-8.36	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-4.57	0.00	0.00
Energy generation	MU	1.18	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.07	0.06

Levellised benefit	0.58	Rs/Unit
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**Annexure – 4A
(Wind Zone-4)**

Form 1.1 Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Base Case Wind Zone 4
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	30%
			Deration Factor	%	0.00%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	467
3	Sources of Fund		Tariff Period	Years	13
			<u>Debt: Equity</u>		
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	327
			Total Equity Amout	Rs Lacs	140
			<u>Debt Component</u>		
			Loan Amount	Rs Lacs	327
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
			<u>Equity Component</u>		
Equity amount	Rs Lacs	140			
Return on Equity for first 10 years	% p.a	19.00%			
RoE Period	Year	10			
Return on Equity 11th year onwards	% p.a	24.00%			
Weighted average of ROE		22.00%			
Discount Rate		15.97%			
4	Financial Assumptions	<u>Fiscal Assumptions</u>	Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
			<u>Depreciation</u>		
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	1.33%
Years for 7% rate		10			
5	Working Capital		<u>For Fixed Charges</u>		
			O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
			<u>For Variable Charges</u>		
Interest On Working Capital	%	12.89%			
6	Operation & Maintenance		power plant (FY10-11)		6.87
			Total O & M Expenses Escalation	%	5.72%

Form 1.2 Form Template for (Wind Power 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
Gross/Net Generation	MU		2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		6.87	7.26	7.68	8.12	8.58	9.08	9.59	10.14	10.72	11.34	11.99	12.67	13.40	14.16	14.97	15.83	16.73	17.69	18.70	19.77	20.90	22.10	23.36	24.70	26.11
Depreciation	Rs Lakh		32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70	32.70
Interest on term loan	Rs Lakh		41.59	37.21	32.84	28.46	24.08	19.70	15.32	10.95	6.57	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Interest on working Capital	Rs Lakh		2.58	2.50	2.43	2.35	2.28	2.21	2.14	2.08	2.01	1.95	1.51	1.54	1.58	1.62	1.66	1.71	1.76	1.81	1.86	1.92	1.98	2.04	2.11	2.18	2.25
Return on Equity	Rs Lakh		26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63	33.63
Total Fixed Cost	Rs Lakh		110.37	106.31	102.27	98.26	94.27	90.32	86.39	82.49	78.63	74.80	53.35	54.08	54.84	55.64	56.50	57.40	58.35	59.36	60.42	61.55	62.74	64.00	65.33	66.74	68.22

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
O&M expn	Rs/kWh	0.26	0.28	0.29	0.31	0.33	0.35	0.37	0.39	0.41	0.43	0.46	0.48	0.51	0.54	0.57	0.60	0.64	0.67	0.71	0.75	0.80	0.84	0.89	0.94	0.99
Depreciation	Rs/kWh	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	1.24	1.24	1.24	1.24	1.24
Int. on term loan	Rs/kWh	1.58	1.42	1.25	1.08	0.92	0.75	0.58	0.42	0.25	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	0.10	0.10	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09
RoE	Rs/kWh	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Total COG	Rs/kWh	4.20	4.05	3.89	3.74	3.59	3.44	3.29	3.14	2.99	2.85	2.03	2.06	2.09	2.12	2.15	2.18	2.22	2.26	2.30	2.34	2.39	2.44	2.49	2.54	2.60

Discount Factor		1	0.862	0.744	0.641	0.553	0.477	0.411	0.354	0.306	0.264	0.227	0.196	0.169	0.146	0.126	0.108	0.093	0.081	0.069	0.060	0.052	0.045	0.038	0.033	0.029
Levillised Tariff	3.38	Rs/Unit																								

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	467.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	12.33	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	24.66	13.45	0.00	0.00

Accelerated Depreciation																					
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	186.85	224.22	44.84	8.97	1.79	0.36	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	174.52	199.56	20.18	-15.70	-22.87	-24.31	-24.59	-24.65	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-24.66	-13.45	0.00	0.00
Tax Benefit	Rs Lakh	59.32	67.83	6.86	-5.33	-7.77	-8.26	-8.36	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-8.38	-4.57	0.00	0.00
Energy generation	MU	1.31	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.07	0.06

Levellised benefit	0.52	Rs/Unit
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Annexure – 2A
(Less than 5 MW HP/Uttarakhand/NE)

1.1 Form Template for (HP, Uttarakhand, NE States <5MW) Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	HP, Uttarakhand, NE States
					Less than 5 MW
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	45%
			Auxiliary Consumption	%	1%
			Deration Factor	%	0.00%
			Useful Life	Years	35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	635
3	Financial Assumption		Tariff Period	Years	35
		<u>Debt: Equity</u>	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	444
			Total Equity Amount	Rs Lacs	190
		<u>Debt Component</u>	Loan Amount	Rs Lacs	444
			Moratorium Period	years	0
			Repayment Period(incl Moratorium)	years	10
			Intrest Rate	%	13.39%
		<u>Equity Component</u>	Equity amount	Rs Lacs	190
			Normative ROE (Post-tax)		16%
			Return on Equity for first 10 years	% p.a	19%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.00%
			Weighted average of ROE		22.57%
			Discount Rate (equiv. to WACC) 11th year onwards		16.14%
4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16%
					0%
		<u>Fiscal Assumptions</u>	Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
		<u>Depreciation</u>	Depreciation Rate for first 10 years	%	0.0%
			Depreciation Rate 11th year onwards	%	7.00%
			Years for 7% rate		0.80%
					10
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
		<u>For Variable Charges</u>	Intrest On Working Capital	%	12.89%
6	Operation & Maintenance	O&M Expense	% of base capital cost		0%
		power plant (FY 10-11)			22.20
		Total O & M Expenses Escalation		%	5.72%

Form 1.2 Form Template for (HP, Uttarakhand, NE States < 5MW) : Determination of Tariff Component

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Net Generation	MU		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
O&M Expenses	Rs Lakh		12.69	13.41	14.18	14.99	15.85	16.75	17.71	18.73	19.80	20.93	22.13	23.39	24.73	26.14	27.64	29.22	30.89	32.66	34.53	36.50	38.59	40.80	43.13	45.60	48.21	50.96	53.88	56.96	60.22	63.66	67.31	71.16	75.23	79.53	84.08	
Depreciation	Rs Lakh		31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	
Interest on term loan	Rs Lakh		40.38	36.13	31.86	27.63	23.38	19.13	14.88	10.63	6.38	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Interest on working Capital	Rs Lakh		2.82	2.76	2.71	2.66	2.61	2.57	2.52	2.48	2.45	2.41	1.96	2.03	2.10	2.17	2.25	2.34	2.42	2.52	2.62	2.72	2.83	2.95	3.07	3.20	3.34	3.48	3.64	3.80	3.97	4.15	4.34	4.55	4.76	4.99	5.23	
Return on Equity	Rs Lakh		25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	
Total Fixed Cost	Rs Lakh		113.48	109.90	106.37	102.88	99.44	96.05	92.71	89.43	86.22	83.07	80.37	78.10	76.11	74.60	73.43	72.50	71.84	71.46	71.33	71.43	71.75	72.28	73.01	73.94	75.07	76.40	77.93	79.66	81.59	83.72	86.05	88.58	91.31	94.24	97.37	
Localised 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	26	27	28	29	30	31	32	33	34	35	
O&M expn	RskWh		0.48	0.52	0.54	0.58	0.61	0.64	0.68	0.72	0.76	0.80	0.85	0.90	0.95	1.00	1.06	1.12	1.19	1.26	1.33	1.40	1.48	1.57	1.66	1.75	1.85	1.95	2.07	2.19	2.31	2.45	2.59	2.73	2.89	3.06	3.23	
Depreciation	RskWh		1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	
Int. on term loan	RskWh		1.55	1.39	1.23	1.06	0.90	0.74	0.57	0.41	0.25	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Int. on working capital	RskWh		0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20
RoE	RskWh		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Total COG	RskWh		4.36	4.22	4.09	3.96	3.82	3.69	3.56	3.44	3.31	3.19	3.07	2.97	2.83	2.69	2.54	2.41	2.29	2.18	2.09	2.02	1.96	1.91	1.87	1.84	1.81	1.79	1.77	1.76	1.76	1.76	1.76	1.76	1.76	1.76		
Discount Factor			1	0.861	0.741	0.638	0.550	0.473	0.407	0.351	0.302	0.260	0.224	0.193	0.166	0.143	0.123	0.106	0.091	0.079	0.068	0.058	0.050	0.043	0.037	0.032	0.028	0.024	0.020	0.018	0.015	0.013	0.011	0.010	0.008	0.007	0.006	
Localised Tariff	Rs/Unit		3.65																																			

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	17%
Income Tax (Normal Rates)	33.99%
Capital Cost	634.9

Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Book Depreciation	Rs Lakh	16.76	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	33.52	18.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																																				
Opening	%	100%	60%	12%	2%	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%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	253.97	304.77	60.95	12.19	2.44	0.49	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	237.21	271.24	27.43	-21.33	-31.09	-33.04	-33.43	-33.51	-33.52	-33.52	-33.52	-33.52	-33.52	-33.52	-33.52	-33.52	-18.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	80.63	92.30	9.32	-2.25	-10.52	-11.23	-11.36	-11.39	-11.39	-11.39	-11.39	-11.40	-11.40	-11.40	-11.40	-11.40	-6.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	1.95	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
Discounting Factor		1.00	0.93	0.80	0.69	0.59	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.15	0.13	0.11	0.10	0.08	0.07	0.06	0.05	0.05	0.05	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	

Levelised benefit	0.48	Rs/Unit
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Annexure – 2B
(5 MW to 25 MWHP/Uttarakhand/NE)

1.1 Form Template for (HP, Uttarakhand, NE States 5MW to 25MW) Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	HP, Uttarakhand, NE States
					5 MW to 25 MW
1	Power Generation	Capacity	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Deration Factor Useful Life	MW % % % Years	1 45% 1% 0.00% 35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	571
3	Financial Assumption	Debt: Equity Debt Component Equity Component	Tariff Period Debt Equity Total Debt Amount Total Equity Amout Loan Amount Moratorium Period Repayment Period(incld Moratorium) Intrest Rate Equity amount Normative ROE (Post-tax) Return on Equity for first 10 years RoE Period Return on Equity 11th year onwards Weighted average of ROE Discount Rate (equiv. to WACC) 11th year onwards	Years % % Rs Lacs Rs Lacs Rs Lacs years years % Rs Lacs % % p.a Year % p.a % %	13 70% 30% 400 171 400 0 10 13.39% 171 16% 19% 10 24.00% 22.57% 16.14%
4	Financial Assumptions	Economic Assumptions Fiscal Assumptions Depreciation	Coal Price Escalation HSD Price Escalation Discount Rate Income Tax MAT Rate (for first 10 years) 80 IA benefits Depreciation Rate for first 10 years Depreciation Rate 11th year onwards Years for 7% rate	% p.a % p.a % p.a % % Yes/No % % %	0 0% 0% 16% 0% 33.99% 16.995% Yes 0.0% 7.00% 0.80% 10
5	Working Capital	For Fixed Charges O&M Charges Maintenance Spare Receivables for Debtors For Variable Charges Intrest On Working Capital	(% of O&M exepenses)	Months Months %	1 15% 2 12.89%
6	Operation & Maintenance	O&M Expense power plant (FY 10-11) Total O & M Expenses	% of base capital cost Escalation		0% 15.86 5.72%

Form 1.2 Form Template for (HP, Uttarakhand, NE States 5MW to 25MW) : Determination of Tariff Component

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		12.69	13.41	14.18	14.99	15.85	16.75	17.71	18.73	19.80	20.93	22.13	23.39	24.73	26.14	27.64	29.22	30.89	32.66	34.53	36.50	38.59	40.80	43.13	45.60	48.21	50.96	53.88	56.96	60.22	63.66	67.31	71.16	75.23	79.53	84.08
Depreciation	Rs Lakh		31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75
Interest on term loan	Rs Lakh		40.38	36.13	31.86	27.63	23.38	19.13	14.88	10.63	6.38	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		2.82	2.76	2.71	2.66	2.61	2.57	2.52	2.48	2.45	2.41	1.96	2.03	2.10	2.17	2.25	2.34	2.42	2.52	2.62	2.72	2.83	2.95	3.07	3.20	3.34	3.48	3.64	3.80	3.97	4.15	4.34	4.55	4.76	4.99	5.23
Return on Equity	Rs Lakh		25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
Total Fixed Cost	Rs Lakh		113.48	109.90	106.37	102.88	99.44	96.05	92.71	89.43	86.22	83.07	80.37	78.10	76.11	74.60	73.43	72.50	71.84	71.46	71.33	71.43	71.75	72.28	73.01	73.93	75.04	76.34	77.83	79.50	81.35	83.38	85.58	87.94	90.46	93.14	95.98
Localised 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	26	27	28	29	30	31	32	33	34	35
O&M expn	RskWh		0.48	0.52	0.54	0.58	0.61	0.64	0.68	0.72	0.76	0.80	0.85	0.90	0.95	1.00	1.06	1.12	1.19	1.26	1.33	1.40	1.48	1.57	1.66	1.75	1.85	1.95	2.07	2.19	2.31	2.45	2.59	2.73	2.89	3.06	3.23
Depreciation	RskWh		1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Int. on term loan	RskWh		1.55	1.39	1.23	1.06	0.90	0.74	0.57	0.41	0.25	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	RskWh		0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20
RoE	RskWh		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Total COG	RskWh		4.36	4.22	4.09	3.96	3.82	3.69	3.56	3.44	3.31	3.19	3.07	2.97	2.83	2.69	2.54	2.41	2.29	2.18	2.09	2.02	1.96	1.91	1.87	1.84	1.81	1.79	1.77	1.76	1.76	1.76	1.76	1.76	1.76	1.76	
Discount Factor			1	0.861	0.741	0.638	0.550	0.473	0.407	0.351	0.302	0.260	0.224	0.193	0.166	0.143	0.123	0.106	0.091	0.079	0.068	0.058	0.050	0.043	0.037	0.032	0.028	0.024	0.020	0.018	0.015	0.013	0.011	0.010	0.008	0.007	0.006
Localised Tariff	Rs/Unit		3.65																																		

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	17%
Income Tax (Normal Rates)	33.99%
Capital Cost	571.4

Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Book Depreciation	Rs Lakh	15.09	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	30.17	16.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Accelerated Depreciation																																				
Opening	%	100%	60%	12%	2%	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%	0%	0%	0%	0%	
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Accelerated Depn.	Rs Lakh	228.58	274.29	54.86	10.97	2.19	0.44	0.09	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Net Depreciation Benefit	Rs Lakh	213.49	244.12	24.69	-19.20	-27.98	-28.73	-30.08	-30.15	-30.17	-30.17	-30.17	-30.17	-30.17	-30.17	-30.17	-30.17	-30.17	-16.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	72.57	82.98	8.39	-6.53	-9.51	-10.11	-10.23	-10.25	-10.25	-10.26	-10.26	-10.26	-10.26	-10.26	-10.26	-10.26	-10.26	-5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	1.95	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	
Discounting Factor		1.00	0.93	0.80	0.69	0.59	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.15	0.13	0.11	0.10	0.08	0.07	0.06	0.05	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01		

Levelised benefit 0.43 Rs/Unit

Annexure – 2C
(Less Than 5 MW Other States)

1.1 Form Template for (Other States <5MW) Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Other States
					Less than 5 MW
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Deration Factor Useful Life	MW % % % Years	1 30% 1% 0.00% 35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	499
3	Financial Assumption	<u>Debt: Equity</u>	Tariff Period Debt Equity Total Debt Amount Total Equity Amout	Years % % Rs Lacs Rs Lacs	35 70% 30% 349 150
		<u>Debt Component</u>	Loan Amount Moratorium Period Repayment Period(inclcd Moratorium) Intrest Rate	Rs Lacs years years %	349 0 10 13.39%
		<u>Equity Component</u>	Equity amount Normative ROE (Post-tax) Return on Equity for first 10 years RoE Period Return on Equity 11th year onwards Weighted average of ROE Discount Rate (equiv. to WACC) 11th year onwards	Rs Lacs % % p.a Year % p.a % %	150 16% 19% 10 24.00% 22.57% 16.14%
4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation HSD Price Escalation Discount Rate	% p.a % p.a % p.a	0 0% 0% 16% 0%
		<u>Fiscal Assumptions</u>	Income Tax MAT Rate (for first 10 years) 80 IA benefits	% % Yes/No	33.99% 16.995% Yes
		<u>Depreciation</u>	Depreciation Rate for first 10 years Depreciation Rate 11th year onwards Years for 7% rate	% % %	0.0% 7.00% 0.80% 10
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges Maintenance Spare Receivables for Debtors	Months Months	1 15% 2
		<u>For Variable Charges</u>	Intrest On Working Capital	%	12.89%
6	Operation & Maintenance	O&M Expense power plant (FY 10-11) Total O & M Expenses	% of base capital cost Escalation	% %	0% 17.97 5.72%

Form 1.2 Form Template for Other States - 5MW) : Determination of Tariff Component

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		12.69	13.41	14.18	14.99	15.85	16.75	17.71	18.73	19.80	20.93	22.13	23.39	24.73	26.14	27.64	29.22	30.89	32.66	34.53	36.50	38.59	40.80	43.13	45.60	48.21	50.96	53.88	56.96	60.22	63.66	67.31	71.16	75.23	79.53	84.08
Depreciation	Rs Lakh		31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75
Interest on term loan	Rs Lakh		40.38	36.13	31.86	27.63	23.38	19.13	14.88	10.63	6.38	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		2.82	2.76	2.71	2.66	2.61	2.57	2.52	2.48	2.45	2.41	1.96	2.03	2.10	2.17	2.25	2.34	2.42	2.52	2.62	2.72	2.83	2.95	3.07	3.20	3.34	3.48	3.64	3.80	3.97	4.15	4.34	4.55	4.76	4.99	5.23
Return on Equity	Rs Lakh		25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
Total Fixed Cost	Rs Lakh		113.48	109.90	106.37	102.88	99.44	96.05	92.71	89.43	86.22	83.07	80.37	78.10	76.11	74.60	73.43	72.50	71.84	71.46	71.33	71.43	71.75	72.28	73.01	73.93	75.04	76.34	77.82	79.48	81.31	83.31	85.48	87.82	90.33	92.99	95.81
Localised 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	26	27	28	29	30	31	32	33	34	35
O&M expn	RskWh		0.48	0.52	0.54	0.58	0.61	0.64	0.68	0.72	0.76	0.80	0.85	0.90	0.95	1.00	1.06	1.12	1.19	1.26	1.33	1.40	1.48	1.57	1.66	1.75	1.85	1.95	2.07	2.19	2.31	2.45	2.59	2.73	2.89	3.06	3.23
Depreciation	RskWh		1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Int. on term loan	RskWh		1.55	1.39	1.23	1.06	0.90	0.74	0.57	0.41	0.25	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	RskWh		0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20
RoE	RskWh		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Total COG	RskWh		4.36	4.22	4.09	3.96	3.82	3.69	3.56	3.44	3.31	3.19	3.07	2.97	2.83	2.69	2.54	2.41	2.29	2.18	2.09	2.00	1.92	1.86	1.81	1.77	1.73	1.70	1.67	1.64	1.61	1.58	1.55	1.52	1.49	1.46	
Discount Factor			1	0.861	0.741	0.638	0.550	0.473	0.407	0.351	0.302	0.260	0.224	0.193	0.166	0.143	0.123	0.106	0.091	0.079	0.068	0.058	0.050	0.043	0.037	0.032	0.028	0.024	0.020	0.018	0.015	0.013	0.011	0.010	0.008	0.007	0.006
Localised Tariff	Rs/Unit		3.65																																		

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	17%
Income Tax (Normal Rates)	33.99%
Capital Cost	498.9

Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Book Depreciation	Rs Lakh	13.17	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	26.34	14.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																																				
Opening	%	100%	60%	12%	2%	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%	0%	0%	0%	0%	
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Depn.	Rs Lakh	199.55	239.46	47.88	9.58	1.92	0.38	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	186.38	213.12	21.55	-16.78	-24.43	-25.98	-26.26	-26.33	-26.34	-26.34	-26.34	-26.34	-26.34	-26.34	-26.34	-26.34	-14.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	63.35	72.44	7.33	-5.70	-8.30	-8.82	-8.93	-8.95	-8.95	-8.95	-8.95	-8.95	-8.95	-8.95	-8.95	-8.95	-4.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	1.90	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Discounting Factor		1.00	0.93	0.80	0.69	0.59	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.15	0.13	0.11	0.10	0.08	0.07	0.06	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	
Levelised benefit	0.57	Rs/Unit																																		

Annexure – 2D
(5 MW to 25 MW Other States)

1.1 Form Template for (Other States 5MW to 25MW) Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Other States
					5 MW to 25 MW
1	Power Generation	Capacity	Installed Power Generation Capacity Capacity Utilization Factor Auxiliary Consumption Deration Factor Useful Life	MW % % % Years	1 30% 1% 0.00% 35
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	454
3	Financial Assumption	Debt: Equity	Tariff Period Debt Equity Total Debt Amount Total Equity Amout	Years % % Rs Lacs Rs Lacs	13 70% 30% 317 136
		Debt Component	Loan Amount Moratorium Period Repayment Period(incld Moratorium) Intrest Rate	Rs Lacs years years %	317 0 10 13.39%
		Equity Component	Equity amount Normative ROE (Post-tax) Return on Equity for first 10 years RoE Period Return on Equity 11th year onwards Weighted average of ROE Discount Rate (equiv. to WACC) 11th year onwards	Rs Lacs % % p.a Year % p.a % %	136 16% 19% 10 24.00% 22.57% 16.14%
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation HSD Price Escalation Discount Rate	% p.a % p.a % p.a	0 0% 0% 16% 0%
		Fiscal Assumptions	Income Tax MAT Rate (for first 10 years) 80 IA benefits	% % Yes/No	33.99% 16.995% Yes
		Depreciation	Depreciation Rate for first 10 years Depreciation Rate 11th year onwards Years for 7% rate	% % %	0.0% 7.00% 0.80% 10
5	Working Capital	For Fixed Charges	O&M Charges Maintenance Spare Receivables for Debtors	Months (% of O&M exepenses) Months	1 15% 2
		For Variable Charges	Intrest On Working Capital	%	12.89%
6	Operation & Maintenance	O&M Expense	% of base capital cost		0%
		power plant (FY 10-11)			12.69
		Total O & M Expenses Escalation		%	5.72%

Form 1.2 Form Template for (OtherStates 5MW to 25 MW) : Determination of Tariff Component

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Generation	MU		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		12.69	13.41	14.18	14.99	15.85	16.75	17.71	18.73	19.80	20.93	22.13	23.39	24.73	26.14	27.64	29.22	30.89	32.66	34.53	36.50	38.59	40.80	43.13	45.60	48.21	50.96	53.88	56.96	60.22	63.66	67.31	71.16	75.23	79.53	84.08
Depreciation	Rs Lakh		31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75
Interest on term loan	Rs Lakh		40.38	36.13	31.86	27.63	23.38	19.13	14.88	10.63	6.38	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		2.82	2.76	2.71	2.66	2.61	2.57	2.52	2.48	2.45	2.41	1.96	2.03	2.10	2.17	2.25	2.34	2.42	2.52	2.62	2.72	2.83	2.95	3.07	3.20	3.34	3.48	3.64	3.80	3.97	4.15	4.34	4.55	4.76	4.99	5.23
Return on Equity	Rs Lakh		25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
Total Fixed Cost	Rs Lakh		113.48	109.90	106.37	102.88	99.44	96.05	92.71	89.43	86.22	83.07	80.37	78.10	76.11	74.60	73.43	72.50	71.84	71.46	71.33	71.43	71.75	72.28	73.01	73.94	75.07	76.40	77.93	79.66	81.59	83.73	86.08	88.65	91.46	94.53	
Localised 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	26	27	28	29	30	31	32	33	34	35
O&M expn	RskWh		0.48	0.52	0.54	0.58	0.61	0.64	0.68	0.72	0.76	0.80	0.85	0.90	0.95	1.00	1.06	1.12	1.19	1.26	1.33	1.40	1.48	1.57	1.66	1.75	1.85	1.95	2.07	2.19	2.31	2.45	2.59	2.73	2.89	3.06	3.23
Depreciation	RskWh		1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Int. on term loan	RskWh		1.55	1.39	1.23	1.06	0.90	0.74	0.57	0.41	0.25	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	RskWh		0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20
RoE	RskWh		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Total COG	RskWh		4.36	4.22	4.09	3.96	3.82	3.69	3.56	3.44	3.31	3.19	3.07	2.97	2.83	2.69	2.54	2.41	2.29	2.18	2.09	2.02	1.96	1.91	1.87	1.84	1.81	1.79	1.77	1.76	1.76	1.76	1.76	1.76	1.76	1.76	
Discount Factor			1	0.861	0.741	0.638	0.550	0.473	0.407	0.351	0.302	0.260	0.224	0.193	0.166	0.143	0.123	0.106	0.091	0.079	0.068	0.058	0.050	0.043	0.037	0.032	0.028	0.024	0.020	0.018	0.015	0.013	0.011	0.010	0.008	0.007	0.006
Localised Tariff	Rs/Unit		3.65																																		

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	17%
Income Tax (Normal Rates)	33.99%
Capital Cost	453.5

Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Book Depreciation	Rs Lakh	11.97	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	23.95	13.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																																					
Opening	%	100%	60%	12%	2%	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%	0%	0%	0%	0%	0%	
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Accelerated Depn.	Rs Lakh	181.41	217.69	43.54	8.71	1.74	0.35	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Depreciation Benefit	Rs Lakh	169.44	180.75	19.55	-15.24	-22.20	-23.60	-23.88	-23.93	-23.94	-23.95	-23.95	-23.95	-23.95	-23.95	-23.95	-23.95	-23.95	-13.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tax Benefit	Rs Lakh	57.59	65.85	6.66	-5.18	-7.55	-8.02	-8.12	-8.13	-8.14	-8.14	-8.14	-8.14	-8.14	-8.14	-8.14	-8.14	-8.14	-4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Energy generation	MU	1.90	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Discounting Factor		1.00	0.93	0.80	0.69	0.59	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.15	0.13	0.11	0.10	0.08	0.07	0.06	0.05	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	

Levelised benefit 0.51 Rs/Unit

Annexure – 3A

2.1 Form Template for Biomass Power Projects- Andhra Pradesh

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions		
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1		
			Auxiliary Consumption during stabilisation	%	10%		
			Auxiliary Consumption after stabilisation	%	10%		
			PLF(Stabilization for 6 months)	%	60%		
			PLF(during first year after Stabilization)	%	70%		
			PLF(second year onwards)	%	80%		
			Useful Life	Years	20		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54		
3	Financial Assumptions	Debt: Equity	Debt	%	70%		
			Equity	%	30%		
			Total Debt Amount	Rs Lacs	281.78		
			Total Equity Amount	Rs Lacs	120.76		
		Debt Component	Loan Amount	Rs Lacs	281.78		
			Moratorium Period	years	0		
			Repayment Period(inclnd Moratorium)	years	10		
			Interest Rate	%	13.39%		
		Equity Component	Equity amount	Rs Lacs	120.76		
			Return on Equity for first 10 years	% p.a	19.00%		
			RoE Period	Year	10.00		
			Return on Equity after 10 years		24.00%		
			Weighted average of ROE		21.50%		
			Discount Rate (equiv. to WACC)		15.82%		
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%		
			HSD Price Escalation	% p.a	0%		
			Discount Rate	% p.a	16%		
		Fiscal Assumptions	Income Tax	%	33.99%		
			IMAT Rate (for first 10 years)	%	16.995%		
			80 IA benefits	Yes/No	Yes		
		Depreciation	Depreciation Rate(power plant)	%	7.00%		
			Depreciation Rate 11th year onwards	%	2.00%		
		Years for 7% depreciation rate		10.00			
		5	Working Capital	For Fixed Charges	O&M Charges	Months	1
					Maintenance Spare ((% of O&M expenses)		15%
For Variable Charges	Receivables for Debtors			Months	2		
	Biomass Stock			Months	4		
	Interest On Working Capital			%	12.89%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3800		
			During Stabilization Period	Kcal/kwh	3800		
		Biomass	Base Price(FY10-11)	Rs/T	1343		
			GCV - Biomass	Kcal/kg	3275		
			Biomass Price Escalation Factor		5%		
7	Operation & Maintenance	power plant (FY 2010-11)			21.41		
		Total O & M Expenses Escalation	%		5.72%		
8	Generation and Sale Of Energy	Working Hours/Day	Hrs		24		
		No. of Days	Days		365		
		Total No. of Hours	Hrs		8760		

2.2 Form Template for (Biomass Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		88.72	114.65	120.38	126.40	132.72	139.36	146.32	153.64	161.32	169.39	177.86	186.75	196.09	205.89	216.19	227.00	238.35	250.26	262.78	275.92

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		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		8.88	10.57	10.93	11.32	11.73	12.16	12.62	13.11	13.63	14.18	14.49	15.19	15.93	16.70	17.51	18.36	19.26	20.20	21.19	22.23
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		117.25	116.39	114.28	112.26	110.34	108.53	106.84	105.27	103.82	102.51	88.87	91.70	94.69	97.85	101.18	104.70	108.42	112.35	116.49	120.86

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
Variable COG	Rs/kWh		1.73	1.82	1.91	2.00	2.10	2.21	2.32	2.44	2.56	2.69	2.82	2.96	3.11	3.26	3.43	3.60	3.78	3.97	4.17	4.37
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.17	0.17	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.28	0.29	0.31	0.32	0.34	0.35
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		4.02	3.66	3.72	3.78	3.85	3.93	4.01	4.10	4.20	4.31	4.23	4.41	4.61	4.82	5.03	5.26	5.50	5.75	6.01	6.29

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			117.7	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9
Fixed Cost			92.1	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4

Variable Cost (FY10-11)	1.73
Levillised Tariff (Fixed)	1.80
Applicable Tariff FY 10-11 (Rs/Unit)	3.53

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 3B

2.1 Form Template for Biomass Power Projects- Haryana

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions			
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1			
			Auxillary Consumption during stabilisation	%	10%			
			Auxillary Consumption after stabilisation	%	10%			
			PLF (Stabilization for 6 months)	%	60%			
			PLF (during first year after Stabilization)	%	70%			
			PLF (second year onwards)	%	80%			
			Useful Life	Years	20			
			2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	Financial Assumptions	Debt: Equity	Debt	%	70%			
			Equity	%	30%			
			Total Debt Amount	Rs Lacs	281.78			
			Total Equity Amount	Rs Lacs	120.76			
			Debt Component	Loan Amount	Rs Lacs	281.78		
				Moratorium Period	years	0		
				Repayment Period (incl. Moratorium)	years	10		
				Interest Rate	%	13.39%		
				Equity Component	Equity amount	Rs Lacs	120.76	
			Return on Equity for first 10 years		% p.a	19.00%		
			RoE Period		Year	10.00		
			Return on Equity after 10 years			24.00%		
			Weighted average of ROE			21.50%		
			Discount Rate (equiv. to WACC)		15.82%			
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%			
			HSD Price Escalation	% p.a	0%			
			Discount Rate	% p.a	16%			
			Fiscal Assumptions	Income Tax	%	33.99%		
				MAT Rate (for first 10 years)	%	16.995%		
				80 IA benefits	Yes/No	Yes		
			Depreciation	Depreciation Rate (power plant)	%	7.00%		
				Depreciation Rate 11th year onwards	%	2.00%		
				Years for 7% depreciation rate		10.00		
				5	Working Capital	For Fixed Charges		
			5	Working Capital	For Fixed Charges	O&M Charges	Months	1
						Maintenance Spare	(% of O&M exepenses)	15%
						Receivables for Debtors	Months	2
						For Variable Charges	Biomass Stock	Months
Interest On Working Capital	%	12.89%						
6	Fuel Related Assumptions	Heat Rate				After Stabilisation period	Kcal/kwh	3800
			During Stabilization Period	Kcal/kwh	3800			
			Biomass	Base Price (FY10-11)	Rs/T	2238		
				GCV - Biomass	Kcal/kg	3458		
				Biomass Price Escalation Factor		5%		
			7	Operation & Maintenance	power plant (FY 2010-11)	Total O & M Expenses Escalation	%	5.72%
8	Generation and Sale Of Energy	Working Hours/Day				Hrs	24	
8	Generation and Sale Of Energy	Working Hours/Day	No. of Days	Days	365			
			Total No. of Hours	Hrs	8760			

2.2 Form Template for (Biomass Power Projects - Haryana) : 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
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Vaible Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		140.01	180.94	189.99	199.49	209.46	219.94	230.93	242.48	254.60	267.33	280.70	294.73	309.47	324.94	341.19	358.25	376.16	394.97	414.72	435.46

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		12.26	14.94	15.52	16.13	16.78	17.47	18.20	18.96	19.77	20.63	21.27	22.30	23.39	24.54	25.74	27.00	28.33	29.73	31.20	32.74
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		120.63	120.76	118.86	117.07	115.40	113.84	112.41	111.12	109.96	108.96	95.64	98.81	102.16	105.69	109.42	113.35	117.50	121.88	126.49	131.37

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
Variable COG	Rs/kWh		2.73	2.87	3.01	3.16	3.32	3.49	3.66	3.84	4.04	4.24	4.45	4.67	4.91	5.15	5.41	5.68	5.96	6.26	6.58	6.90
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.24	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.33	0.34	0.35	0.37	0.39	0.41	0.43	0.45	0.47	0.49	0.52
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		5.09	4.78	4.90	5.02	5.15	5.29	5.44	5.61	5.78	5.97	5.97	6.24	6.53	6.83	7.14	7.48	7.83	8.19	8.58	8.99

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			185.8	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6	228.6
Fixed Cost			96.6	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9

Variable Cost (FY10-11)	2.73
Levillised Tariff (Fixed)	1.89
Applicable Tariff FY10-11(Rs/Unit)	4.62

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 3C

2.1 Form Template for Biomass Power Projects- Maharashtra

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions		
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1		
			Auxillary Consumption during stabilisation	%	10%		
			Auxillary Consumption after stabilisation	%	10%		
			PLF (Stabilization for 6 months)	%	60%		
			PLF (during first year after Stabilization)	%	70%		
			PLF (second year onwards)	%	80%		
			Useful Life	Years	20		
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54		
		3 Financial Assumptions					
		<u>Debt: Equity</u>	Debt	%	70%		
		Equity	%	30%			
		Total Debt Amount	Rs Lacs	281.78			
		Total Equity Amount	Rs Lacs	120.76			
		<u>Debt Component</u>	Loan Amount	Rs Lacs	281.78		
		Moratorium Period	years	0			
		Repayment Period (incl. Moratorium)	years	10			
		Interest Rate	%	13.39%			
		<u>Equity Component</u>	Equity amount	Rs Lacs	120.76		
		Return on Equity for first 10 years	% p.a	19.00%			
		RoE Period	Year	10.00			
		Return on Equity after 10 years		24.00%			
		Weighted average of ROE		21.50%			
		Discount Rate (equiv. to WACC)		15.82%			
4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation	% p.a	0%		
		HSD Price Escalation	% p.a	0%			
		Discount Rate	% p.a	16%			
		<u>Fiscal Assumptions</u>	Income Tax	%	33.99%		
		MAT Rate (for first 10 years)	%	16.995%			
		80 IA benefits	Yes/No	Yes			
		<u>Depreciation</u>	Depreciation Rate (power plant)	%	7.00%		
		Depreciation Rate 11th year onwards	%	2.00%			
		Years for 7% depreciation rate		10.00			
		5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1
				Maintenance Spare	(% of O&M exepenses)		15%
				Receivables for Debtors		Months	2
				<u>For Variable Charges</u>	Biomass Stock	Months	4
				Interest On Working Capital		%	12.89%
6	Fuel Related Assumptions			<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3800
				During Stabilization Period	Kcal/kwh	3800	
		<u>Biomass</u>	Base Price (FY10-11)	Rs/T	1859		
		GCV - Biomass	Kcal/kg	3611			
		Biomass Price Escalation Factor		5%			
		7	Operation & Maintenance	power plant (FY 2010-11)			21.41
Total O & M Expenses Escalation				%	5.72%		
8	Generation and Sale Of Energy			<u>Working Hours/Day</u>		Hrs	24
		<u>No. of Days</u>		Days	365		
		<u>Total No. of Hours</u>		Hrs	8760		

2.2 Form Template for (Biomass Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		111.38	143.94	151.14	158.70	166.63	174.96	183.71	192.90	202.54	212.67	223.30	234.47	246.19	258.50	271.43	285.00	299.25	314.21	329.92	346.42

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		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		10.37	12.50	12.96	13.44	13.96	14.51	15.09	15.70	16.35	17.03	17.49	18.33	19.23	20.16	21.15	22.18	23.27	24.41	25.61	26.87
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		118.74	118.32	116.30	114.39	112.58	110.88	109.30	107.85	106.53	105.36	91.86	94.84	97.99	101.31	104.82	108.52	112.43	116.56	120.91	125.50

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
Variable COG	Rs/kWh		2.17	2.28	2.40	2.52	2.64	2.77	2.91	3.06	3.21	3.37	3.54	3.72	3.90	4.10	4.30	4.52	4.74	4.98	5.23	5.49
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.32	0.34	0.35	0.37	0.39	0.41	0.43
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		4.49	4.16	4.24	4.33	4.43	4.53	4.65	4.77	4.90	5.04	5.00	5.22	5.46	5.70	5.97	6.24	6.53	6.83	7.15	7.48

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			111.4	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1
Fixed Cost			94.1	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8

Variable Cost (FY 10-11)	2.17
Levillised Tariff (Fixed)	1.84
Applicable Tariff FY10-11 (Rs/Unit)	4.01

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 3D

2.1 Form Template for Biomass Power Projects-Punjab

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions			
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1			
			Auxiliary Consumption during stabilisation	%	10%			
			Auxiliary Consumption after stabilisation	%	10%			
			PLF(Stabilization for 6 months)	%	60%			
			PLF(during first year after Stabilization)	%	70%			
			PLF(second year onwards)	%	80%			
			Useful Life	Years	20			
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54			
3	Financial Assumptions	Debt: Equity	Debt	%	70%			
			Equity	%	30%			
			Total Debt Amount	Rs Lacs	281.78			
			Total Equity Amount	Rs Lacs	120.76			
			Debt Component	Loan Amount	Rs Lacs	281.78		
				Moratorium Period	years	0		
				Repayment Period(incl. Moratorium)	years	10		
				Interest Rate	%	13.39%		
			Equity Component	Equity amount	Rs Lacs	120.76		
				Return on Equity for first 10 years	% p.a	19.00%		
				RoE Period	Year	10.00		
				Return on Equity after 10 years		24.00%		
				Weighted average of ROE		21.50%		
			Discount Rate (equiv. to WACC)		15.82%			
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%			
			HSD Price Escalation	% p.a	0%			
			Discount Rate	% p.a	16%			
			Fiscal Assumptions	Income Tax	%	33.99%		
				MAT Rate (for first 10 years)	%	16.995%		
				80 IA benefits	Yes/No	Yes		
			Depreciation	Depreciation Rate(power plant)	%	7.00%		
				Depreciation Rate 11th year onwards	%	2.00%		
				Years for 7% depreciation rate		10.00		
			5	Working Capital	For Fixed Charges	O&M Charges	Months	1
						Maintenance Spare	(% of O&M exepenses)	15%
Receivables for Debtors	Months	2						
For Variable Charges	Biomass Stock	Months				4		
	Interest On Working Capital	%				12.89%		
6	Fuel Related Assumptions	Heat Rate				After Stabilisation period	Kcal/kwh	3800
			During Stabilization Period	Kcal/kwh	3800			
			Biomass	Base Price(FY10-11)	Rs/T	2159		
				GCV - Biomass	Kcal/kg	3368		
				Biomass Price Escalation Factor		5%		
			7	Operation & Maintenance	power plant (FY 2010-11)			21.41
Total O & M Expenses Escalation	%	5.72%						
8	Generation and Sale Of Energy	Working Hours/Day		Hrs	24			
			No. of Days	Days	365			
			Total No. of Hours	Hrs	8760			

2.2 Form Template for (Biomass Power Projects - Punjab) : 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
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		138.72	179.26	188.23	197.64	207.52	217.90	228.79	240.23	252.24	264.85	278.10	292.00	306.60	321.93	338.03	354.93	372.68	391.31	410.88	431.42

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		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		12.17	14.82	15.40	16.01	16.65	17.33	18.05	18.82	19.62	20.47	21.10	22.12	23.20	24.34	25.53	26.79	28.10	29.49	30.94	32.47
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		120.54	120.65	118.75	116.95	115.27	113.71	112.27	110.97	109.81	108.79	95.47	98.63	101.97	105.49	109.21	113.13	117.27	121.63	126.24	131.10

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
Variable COG	Rs/kWh		2.71	2.84	2.98	3.13	3.29	3.45	3.63	3.81	4.00	4.20	4.41	4.63	4.86	5.10	5.36	5.63	5.91	6.20	6.51	6.84
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.24	0.24	0.24	0.25	0.26	0.27	0.29	0.30	0.31	0.32	0.33	0.35	0.37	0.39	0.40	0.42	0.45	0.47	0.49	0.51
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		5.06	4.76	4.87	4.99	5.12	5.26	5.41	5.57	5.74	5.92	6.19	6.48	6.78	7.09	7.42	7.77	8.13	8.52	8.92	

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			138.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7	170.7
Fixed Cost			96.5	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8

Variable Cost (FY10-11)	2.71
Levillised Tariff (Fixed)	1.88
Applicable Tariff FY10-11 (Rs/Unit)	4.59

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 3E

2.1 Form Template for Biomass Power Projects- Madhya Pradesh

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions			
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1			
			Auxiliary Consumption during stabilisation	%	10%			
			Auxiliary Consumption after stabilisation	%	10%			
			PLF(Stabilization for 6 months)	%	60%			
			PLF(during first year after Stabilization)	%	70%			
			PLF(second year onwards)	%	80%			
			Useful Life	Years	20			
			2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	Financial Assumptions	Debt: Equity	Debt	%	70%			
			Equity	%	30%			
			Total Debt Amount	Rs Lacs	281.78			
			Total Equity Amount	Rs Lacs	120.76			
			Debt Component	Loan Amount	Rs Lacs	281.78		
				Moratorium Period	years	0		
				Repayment Period(incl. Moratorium)	years	10		
				Interest Rate	%	13.39%		
				Equity Component	Equity amount	Rs Lacs	120.76	
			Return on Equity for first 10 years		% p.a	19.00%		
			RoE Period		Year	10.00		
			Return on Equity after 10 years			24.00%		
			Weighted average of ROE			21.50%		
			Discount Rate (equiv. to WACC)		15.82%			
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%			
			HSD Price Escalation	% p.a	0%			
			Discount Rate	% p.a	16%			
			Fiscal Assumptions	Income Tax	%	33.99%		
				MAT Rate (for first 10 years)	%	16.995%		
				80 IA benefits	Yes/No	Yes		
			Depreciation	Depreciation Rate(power plant)	%	7.00%		
				Depreciation Rate 11th year onwards	%	2.00%		
				Years for 7% depreciation rate		10.00		
				5	Working Capital	For Fixed Charges	O&M Charges	Months
			Maintenance Spare	(% of O&M exepenses)				15%
			Receivables for Debtors	Months			2	
			For Variable Charges	Biomass Stock			Months	4
				Interest On Working Capital			%	12.89%
6	Fuel Related Assumptions	Heat Rate		After Stabilisation period			Kcal/kwh	3800
During Stabilization Period			Kcal/kwh	3800				
Biomass		Base Price(FY10-11)	Rs/T	1341				
		GCV - Biomass	Kcal/kg	3612				
		Biomass Price Escalation Factor		5%				
		7	Operation & Maintenance	power plant (FY 2010-11)	Total O & M Expenses Escalation	%	5.72%	
8	Generation and Sale Of Energy	Working Hours/Day			No. of Days	Hrs	24	
Total No. of Hours			No. of Days	365				
			Total No. of Hours	Hrs	8760			

2.2 Form Template for (Biomass Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		80.32	103.79	108.98	114.43	120.15	126.16	132.47	139.09	146.05	153.35	161.02	169.07	177.52	186.40	195.72	205.50	215.78	226.57	237.89	249.79

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		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		8.33	9.85	10.18	10.53	10.90	11.29	11.71	12.15	12.63	13.12	13.38	14.03	14.70	15.41	16.16	16.95	17.77	18.64	19.55	20.51
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		116.70	115.68	113.53	111.47	109.52	107.67	105.93	104.31	102.81	101.45	87.76	90.53	93.47	96.57	99.84	103.29	106.94	110.78	114.85	119.14

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
Variable COG	Rs/kWh		1.57	1.65	1.73	1.81	1.91	2.00	2.10	2.21	2.32	2.43	2.55	2.68	2.81	2.96	3.10	3.26	3.42	3.59	3.77	3.96
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.16	0.16	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.21	0.21	0.22	0.23	0.24	0.26	0.27	0.28	0.30	0.31	0.33
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		3.84	3.48	3.53	3.58	3.64	3.71	3.78	3.86	3.95	4.04	3.94	4.12	4.30	4.49	4.69	4.90	5.12	5.35	5.59	5.85

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			80.3	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
Fixed Cost			91.4	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5

Variable Cost (FY10-11)	1.57
Levillised Tariff (Fixed)	1.78
Applicable Tariff FY10-11 (Rs/Unit)	3.35

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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2.1 Form Template for Biomass Power Projects- Rajasthan

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions			
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1			
			Auxiliary Consumption during stabilisation	%	10%			
			Auxiliary Consumption after stabilisation	%	10%			
			PLF (Stabilization for 6 months)	%	60%			
			PLF (during first year after Stabilization)	%	70%			
			PLF (second year onwards)	%	80%			
			Useful Life	Years	20			
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54			
3	Financial Assumptions	Debt: Equity	Debt	%	70%			
			Equity	%	30%			
			Total Debt Amount	Rs Lacs	281.78			
			Total Equity Amount	Rs Lacs	120.76			
			Debt Component	Loan Amount	Rs Lacs	281.78		
				Moratorium Period	years	0		
				Repayment Period (incl. Moratorium)	years	10		
				Interest Rate	%	13.39%		
				Equity Component	Equity amount	Rs Lacs	120.76	
			Return on Equity for first 10 years		% p.a	19.00%		
			RoE Period		Year	10.00		
			Return on Equity after 10 years			24.00%		
			Weighted average of ROE			21.50%		
Discount Rate (equiv. to WACC)		15.82%						
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%			
			HSD Price Escalation	% p.a	0%			
			Discount Rate	% p.a	16%			
			Fiscal Assumptions	Income Tax	%	33.99%		
				MAT Rate (for first 10 years)	%	16.995%		
				80 IA benefits	Yes/No	Yes		
			Depreciation	Depreciation Rate (power plant)	%	7.00%		
				Depreciation Rate 11th year onwards	%	2.00%		
				Years for 7% depreciation rate		10.00		
			5	Working Capital	For Fixed Charges	O&M Charges	Months	1
						Maintenance Spare	(% of O&M expenses)	15%
						Receivables for Debtors	Months	2
						For Variable Charges	Biomass Stock	Months
Interest On Working Capital	%	12.89%						
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3800			
			During Stabilization Period	Kcal/kwh	3800			
			Biomass	Base Price (FY10-11)	Rs/T	1881		
				GCV - Biomass	Kcal/kg	3689		
				Biomass Price Escalation Factor		5%		
7	Operation & Maintenance	power plant (FY 2010-11)			21.41			
			Total O & M Expenses Escalation	%	5.72%			
8	Generation and Sale Of Energy	Working Hours/Day		Hrs	24			
			No. of Days	Days	365			
			Total No. of Hours	Hrs	8760			

2.2 Form Template for (Biomass Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		110.30	142.54	149.67	157.15	165.01	173.26	181.92	191.02	200.57	210.60	221.13	232.19	243.80	255.99	268.78	282.22	296.33	311.15	326.71	343.04

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		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		10.30	12.41	12.86	13.34	13.85	14.40	14.97	15.57	16.22	16.89	17.34	18.18	19.07	20.00	20.97	22.00	23.08	24.21	25.40	26.65
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		118.67	118.23	116.21	114.28	112.47	110.77	109.19	107.73	106.40	105.22	91.72	94.69	97.83	101.15	104.65	108.34	112.24	116.36	120.70	125.28

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
Variable COG	Rs/kWh		2.15	2.26	2.37	2.49	2.62	2.75	2.88	3.03	3.18	3.34	3.51	3.68	3.87	4.06	4.26	4.47	4.70	4.93	5.18	5.44
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.20	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.27	0.29	0.30	0.32	0.33	0.35	0.37	0.38	0.40	0.42
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		4.47	4.13	4.22	4.30	4.40	4.50	4.62	4.74	4.87	5.01	4.96	5.18	5.42	5.66	5.92	6.19	6.48	6.78	7.09	7.43

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			110.3	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8	135.8
Fixed Cost			94.0	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7	115.7

Variable Cost (FY10-11)	2.15
Levillised Tariff (Fixed)	1.83
Applicable Tariff (FY10-11) (Rs/Unit)	3.99

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 3G

2.1 Form Template for Biomass Power Projects- Uttar Pradesh

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption during stabilisati	%	10%	
			Auxillary Consumption after stabilisatio	%	10%	
			PLF(Stabilization for 6 months)	%	60%	
			PLF(during first year after Stabilization)	%	70%	
			PLF(second year onwards)	%	80%	
			Useful Life	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54	
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	281.78	
			Total Equity Amout	Rs Lacs	120.76	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	281.78
				Moratorium Period	years	0
				Repayment Period(inclcd Moratorium)	years	10
				Interest Rate	%	13.39%
				<u>Equity Component</u>	Equity amount	Rs Lacs
			Return on Equity for first 10 years		% p.a	19.00%
			RoE Period		Year	10.00
			Return on Equity after 10 years			24.00%
			Weighted average of ROE			21.50%
Discount Rate (equiv. to WACC)		15.82%				
4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation	% p.a	0%	
			HSD Price Escalation	% p.a	0%	
			Discount Rate	% p.a	16%	
			<u>Fiscal Assumptions</u>	Income Tax	%	33.99%
				MAT Rate (for first 10 years)	%	16.995%
				80 IA benefits	Yes/No	Yes
			<u>Depreciation</u>	Depreciation Rate(power plant)	%	7.00%
				Depreciation Rate 11th year onwards	%	2.00%
				Years for 7% depreciation rate		10.00
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1	
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			<u>For Variable Charges</u>	Biomass Stock	Months	4
				Interest On Working Capital	%	12.89%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3800	
			During Stabilization Period	Kcal/kwh	3800	
			<u>Biomass</u>	Base Price(FY10-11)	Rs/T	1567
				GCV - Biomass	Kcal/kg	3371
				Biomass Price Escalation Factor		5%
7	Operation & Maintenance		power plant (FY 2010-11)		21.41	
			Total O & M Expenses Escalation	%	5.72%	
8	Generation and Sale Of Energy		<u>Working Hours/Day</u>	Hrs	24	
			<u>No. of Days</u>	Days	365	
			<u>Total No. of Hours</u>	Hrs	8760	

2.2 Form Template for (Biomass Power 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	
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		100.57	129.96	136.46	143.28	150.45	157.97	165.87	174.16	182.87	192.01	201.61	211.69	222.28	233.39	245.06	257.32	270.18	283.69	297.88	312.77

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
O&M Expenses	Rs Lakh		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60	
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		9.66	11.58	11.99	12.43	12.90	13.39	13.91	14.46	15.05	15.67	16.06	16.83	17.65	18.51	19.41	20.36	21.35	22.40	23.50	24.66	
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		118.03	117.40	115.34	113.37	111.51	109.76	108.13	106.62	105.24	104.00	90.43	93.34	96.42	99.66	103.09	106.70	110.52	114.55	118.80	123.29	

Levallised 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
Variable COG	Rs/kWh		1.96	2.06	2.16	2.27	2.39	2.50	2.63	2.76	2.90	3.04	3.20	3.36	3.52	3.70	3.89	4.08	4.28	4.50	4.72	4.96
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.19	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.25	0.27	0.28	0.29	0.31	0.32	0.34	0.36	0.37	0.39
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		4.27	3.92	3.99	4.07	4.15	4.24	4.34	4.45	4.57	4.69	4.63	4.84	5.05	5.28	5.52	5.77	6.04	6.31	6.61	6.91

Levallised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			100.6	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8	123.8
Fixed Cost			93.2	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7	114.7

Variable Cost (FY10-11)	1.96
Levallised Tariff (Fixed)	1.82
Levallised Tariff (Rs/Unit)	3.78

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 3H

2.1 Form Template for Biomass Power Projects- Tamil Nadu

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stabilisation	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stabilization for 6 months)	%	60%
			PLF(during first year after Stabilization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amount	Rs Lacs	120.76
		Debt Component	Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(inclnd Moratorium)	years	10
			Interest Rate	%	13.39%
			Equity Component	Equity amount	Rs Lacs
		Return on Equity for first 10 years		% p.a	19.00%
		RoE Period		Year	10.00
		Return on Equity after 10 years			24.00%
		Weighted average of ROE			21.50%
			Discount Rate (equiv. to WACC)		15.82%
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16%
		Fiscal Assumptions	Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
		Depreciation	Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
		5	Working Capital	For Fixed Charges	O&M Charges
Maintenance Spare (of O&M exepenses)					15%
For Variable Charges	Receivables for Debtors			Months	2
	Biomass Stock			Months	4
Interest On Working Capital	%			12.89%	
6	Fuel Related Assumptions			Heat Rate	After Stabilisation period
		During Stabilization Period	Kcal/kwh		3800
		Biomass	Base Price(FY10-11)	Rs/T	1882
			GCV - Biomass	Kcal/kg	3300
			Biomass Price Escalation Factor		5%
7	Operation & Maintenance	power plant (FY 2010-11)			21.41
		Total O & M Expenses Escalation	%		5.72%
8	Generation and Sale Of Energy	Working Hours/Day	Hrs		24
		No. of Days	Days		365
		Total No. of Hours	Hrs		8760

2.2 Form Template for (Biomass Power 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	
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		123.37	159.43	167.40	175.77	184.56	193.79	203.48	213.65	224.34	235.55	247.33	259.70	272.68	286.32	300.63	315.66	331.45	348.02	365.42	383.69

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		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		11.16	13.52	14.03	14.57	15.14	15.75	16.39	17.07	17.78	18.54	19.07	20.00	20.97	21.99	23.07	24.20	25.39	26.64	27.95	29.33
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94
Total Fixed Cost	Rs Lakh		119.53	119.34	117.37	115.51	113.76	112.12	110.60	109.22	107.97	106.86	93.44	96.50	99.74	103.15	106.75	110.54	114.55	118.78	123.25	127.96

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
Variable COG	Rs/kWh		2.41	2.53	2.65	2.79	2.93	3.07	3.23	3.39	3.56	3.73	3.92	4.12	4.32	4.54	4.77	5.00	5.26	5.52	5.79	6.08
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.22	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.37	0.38	0.40	0.42	0.44	0.46
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		4.74	4.42	4.52	4.62	4.73	4.85	4.98	5.12	5.27	5.43	5.40	5.65	5.90	6.17	6.46	6.76	7.07	7.40	7.75	8.11

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			123.4	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8	151.8
Fixed Cost			95.2	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1	117.1

Variable Cost (FY10-11)	2.41
Levillised Tariff (Fixed)	1.86
Applicate Tariff (FY10-11) (Rs/Unit)	4.26

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 3I

2.1 Form Template for Biomass Power Projects- Other

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions			
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1			
			Auxillary Consumption during stabilisation	%	10%			
			Auxillary Consumption after stabilisation	%	10%			
			PLF(Stabilization for 6 months)	%	60%			
			PLF(during first year after Stabilization)	%	70%			
			PLF(second year onwards)	%	80%			
			Useful Life	Years	20			
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54			
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%			
			Equity	%	30%			
			Total Debt Amount	Rs Lacs	281.78			
			Total Equity Amount	Rs Lacs	120.76			
			<u>Debt Component</u>	Loan Amount	Rs Lacs	281.78		
				Moratorium Period	years	0		
				Repayment Period(inclld Moratorium)	years	10		
				Interest Rate	%	13.39%		
			<u>Equity Component</u>	Equity amount	Rs Lacs	120.76		
				Return on Equity for first 10 years	% p.a	19.00%		
				RoE Period	Year	10.00		
				Return on Equity after 10 years		24.00%		
				Weighted average of ROE		21.50%		
Discount Rate (equiv. to WACC)		15.82%						
4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation	% p.a	0%			
			HSD Price Escalation	% p.a	0%			
			Discount Rate	% p.a	16%			
			<u>Fiscal Assumptions</u>	Income Tax	%	33.99%		
				MAT Rate (for first 10 years)	%	16.995%		
				80 IA benefits	Yes/No	Yes		
			<u>Depreciation</u>	Depreciation Rate(power plant)	%	7.00%		
				Depreciation Rate 11th year onwards	%	2.00%		
				Years for 7% depreciation rate		10.00		
			5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1
						Maintenance Spare	(% of O&M exepenses)	15%
Receivables for Debtors	Months	2						
<u>For Variable Charges</u>	Biomass Stock	Months				4		
	Interest On Working Capital	%				12.89%		
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3800			
			During Stabilization Period	Kcal/kwh	3800			
			<u>Biomass</u>	Base Price(FY10-11)	Rs/T	1855		
				GCV - Biomass	Kcal/kg	3467		
				Biomass Price Escalation Factor		5%		
7	Operation & Maintenance		power plant (FY 2010-11)		21.41			
			Total O & M Expenses Escalation	%	5.72%			
8	Generation and Sale Of Energy		<u>Working Hours/Day</u>	Hrs	24			
			<u>No. of Days</u>	Days	365			
			Total No. of Hours	Hrs	8760			

2.2 Form Template for (Biomass Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.69	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01
Auxiliary Consumption	MU		0.57	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Net Generation	MU		5.12	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		115.75	149.59	157.07	164.92	173.17	181.83	190.92	200.46	210.49	221.01	232.06	243.66	255.85	268.64	282.07	296.17	310.98	326.53	342.86	360.00

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		21.41	22.63	23.93	25.30	26.74	28.27	29.89	31.60	33.41	35.32	37.34	39.47	41.73	44.12	46.64	49.31	52.13	55.11	58.27	61.60
Depreciation	Rs Lakh		28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	28.18	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05
Interest on term loan	Rs Lakh		35.84	32.07	28.29	24.52	20.75	16.98	13.20	9.43	5.66	1.89	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		10.66	12.87	13.35	13.85	14.39	14.96	15.56	16.20	16.87	17.58	18.06	18.94	19.86	20.83	21.85	22.92	24.04	25.22	26.46	27.77
Return on Equity	Rs Lakh		22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	22.94	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98	28.98
Total Fixed Cost	Rs Lakh		119.03	118.69	116.69	114.80	113.01	111.33	109.78	108.35	107.06	105.91	92.44	95.45	98.63	101.98	105.52	109.26	113.21	117.37	121.76	126.40

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
Variable COG	Rs/kWh		2.26	2.37	2.49	2.61	2.75	2.88	3.03	3.18	3.34	3.50	3.68	3.86	4.06	4.26	4.47	4.70	4.93	5.18	5.44	5.71
O&M expn	Rs/kWh		0.42	0.36	0.38	0.40	0.42	0.45	0.47	0.50	0.53	0.56	0.59	0.63	0.66	0.70	0.74	0.78	0.83	0.87	0.92	0.98
Depreciation	Rs/kWh		0.55	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		0.70	0.51	0.45	0.39	0.33	0.27	0.21	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		0.21	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.33	0.35	0.36	0.38	0.40	0.42	0.44
RoE	Rs/kWh		0.45	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Total COG	Rs/kWh		4.58	4.25	4.34	4.43	4.54	4.65	4.77	4.90	5.03	5.18	5.14	5.38	5.62	5.88	6.15	6.43	6.73	7.04	7.37	7.71

Levillised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			115.8	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5
Fixed Cost			94.5	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3	116.3

Variable Tariff (FY10-11)	2.26
Levillised Tariff (Fixed)	1.84
Applicable Tariff (FY10-11) (Rs/Unit)	4.10

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	402.5

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	10.63	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	21.25	11.59	0.00	0.00

Accelerated Depreciation		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	161.02	193.22	38.64	7.73	1.55	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	150.39	171.96	17.39	-13.53	-19.71	-20.94	-21.19	-21.24	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-21.25	-11.59	0.00	0.00
Tax Benefit	Rs Lakh	51.12	58.45	5.91	-4.60	-6.70	-7.12	-7.20	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-7.22	-3.94	0.00	0.00
Net Energy generation	MU	2.56	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levelised benefit	0.19	(Rs/kWh)
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Annexure – 4A

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Andhra Pradesh

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption	%	8.5%	
			Plant Load Factor	%	45%	
			Life of Power Plant	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07	
3	Financial Assumptions	Debt: Equity	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	278.65	
			Total Equity Amount	Rs Lacs	119.42	
			Debt Component	Loan Amount	Rs Lacs	278.65
				Moratorium Period	years	0
				Repayment Period(incl. Moratorium)	years	10
				Interest Rate	%	13.39%
			Equity Component	Equity amount	Rs Lacs	119.42
				Return on Equity for first 10 years	% p.a	19.00%
				RoE Period	Year	10.00
				Return on Equity after 10 years		24.00%
				Weighted average of ROE		21.50%
				Discount Rate (equiv. to WACC)		15.82%
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%	
			HSD Price Escalation	% p.a	0%	
			Discount Rate	% p.a	16%	
			Depreciation	Depreciation Rate(power plant)	%	7.00%
				Depreciation Rate 11th year onwards	%	2.00%
				Years for 7% depreciation rate		10.00
				MAT Rate	%	16.995%
				Corporate Tax Rate	%	33.99%
			5	Working Capital	For Fixed Charges	O&M Charges
Maintenance Spare	(% of O&M exepenses)	15%				
Receivables for Debtors	Months	2				
For Variable Charges	Bagasse Stock	Months				4
	Interest On Working Capital	%				12.89%
6	Fuel Related Assumptions	Heat Rate				After Stabilisation period
			During Stablization Period	Kcal/kwh	3600	
			Bagasse	Base Price(FY10-11)	Rs/T	928
				GCV - Bagasse	Kcal/kg	2250
				Bagasse Price Escalation Factor		5%
			7	Allocation of Bagasse to Power and Steam	Power	As a % of fuel cost
Steam	As a % of fuel cost	0%				
8	Operation & Maintenance	power plant (FY 2010-11)	Total O & M Expenses Escalation	%	5.72%	
9	Generation and Sale Of Energy	No. of Days	Total No. of Hours	Days	365	
				Hrs	8760	

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94
Auxiliary Consumption	MU		0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Net Generation	MU		3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		58.52	61.45	64.52	67.75	71.14	74.69	78.43	82.35	86.47	90.79	95.33	100.10	105.10	110.36	115.87	121.67	127.75	134.14	140.84	147.89

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		6.49	6.64	6.80	6.98	7.17	7.38	7.60	7.84	8.09	8.36	8.38	8.77	9.18	9.60	10.06	10.53	11.03	11.55	12.10	12.68
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69
Total Fixed Cost	Rs Lakh		106.60	103.83	101.11	98.46	95.88	93.36	90.92	88.55	86.26	84.06	69.62	71.41	73.31	75.31	77.43	79.66	82.02	84.51	87.14	89.91

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
Variable COG	Rs/kWh		1.62	1.70	1.79	1.88	1.97	2.07	2.17	2.28	2.40	2.52	2.64	2.78	2.91	3.06	3.21	3.37	3.54	3.72	3.90	4.10
O&M expn	Rs/kWh		0.39	0.41	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.68	0.72	0.76	0.81	0.85	0.90	0.95	1.01	1.06	1.13
Depreciation	Rs/kWh		0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Int. on term loan	Rs/kWh		0.98	0.88	0.78	0.67	0.57	0.47	0.36	0.26	0.16	0.05	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	0.18	0.19	0.19	0.20	0.20	0.21	0.22	0.22	0.23	0.23	0.24	0.25	0.27	0.28	0.29	0.31	0.32	0.34	0.35
RoE	Rs/kWh		0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Total COG	Rs/kWh		4.58	4.58	4.59	4.61	4.63	4.66	4.69	4.74	4.79	4.85	4.57	4.75	4.95	5.15	5.36	5.58	5.82	6.06	6.32	6.59

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5
Fixed Cost			94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0

Variable Cost (FY10-11)	1.62
Levillised Tariff Fixed	2.61
Applicable Tariff (FY10-11)	4.23

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																						
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	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
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	

Levellised benefit	0.32	Rs/Unit
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Annexure – 4B

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Haryana

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions			
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1			
			Auxillary Consumption	%	8.5%			
			Plant Load Factor	%	53%			
			Life of Power Plant	Years	20			
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07			
3	Financial Assumptions	Debt: Equity	Debt	%	70%			
			Equity	%	30%			
			Total Debt Amount	Rs Lacs	278.65			
			Total Equity Amount	Rs Lacs	119.42			
			Debt Component	Loan Amount	Rs Lacs	278.65		
				Moratorium Period	years	0		
				Repayment Period(incl. Moratorium)	years	10		
				Interest Rate	%	13.39%		
			Equity Component	Equity amount	Rs Lacs	119.42		
				Return on Equity for first 10 years	% p.a	19.00%		
				RoE Period	Year	10.00		
				Return on Equity after 10 years		24.00%		
				Weighted average of ROE		21.50%		
				Discount Rate (equiv. to WACC)		15.82%		
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%			
			HSD Price Escalation	% p.a	0%			
			Discount Rate	% p.a	16%			
			Depreciation	Depreciation Rate(power plant)	%	7.00%		
				Depreciation Rate 11th year onwards	%	2.00%		
				Years for 7% depreciation rate		10.00		
				MAT Rate	%	16.995%		
				Corporate Tax Rate	%	33.99%		
			5	Working Capital	For Fixed Charges	O&M Charges	Months	1
						Maintenance Spare	(% of O&M expenses)	15%
Receivables for Debtors	Months	2						
For Variable Charges	Bagasse Stock	Months				4		
	Interest On Working Capital	%				12.89%		
6	Fuel Related Assumptions	Heat Rate	After Stabilisation period	Kcal/kwh	3600			
			During Stabilization Period	Kcal/kwh	3600			
			Bagasse	Base Price(FY10-11)	Rs/T	1456		
				GCV - Bagasse	Kcal/kg	2250		
				Bagasse Price Escalation Factor		5%		
7	Allocation of Bagasse to Power and Steam	Power	As a % of fuel cost		100%			
			Steam	As a % of fuel cost	0%			
8	Operation & Maintenance	power plant (FY 2010-11)	Total O & M Expenses		14.11			
			Escalation	%	5.72%			
9	Generation and Sale Of Energy	No. of Days		Days	365			
			Total No. of Hours	Hrs	8760			

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64
Auxiliary Consumption	MU		0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Net Generation	MU		4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		108.18	113.59	119.27	125.24	131.50	138.07	144.98	152.23	159.84	167.83	176.22	185.03	194.28	204.00	214.20	224.91	236.15	247.96	260.36	273.38

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		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	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		9.76	10.07	10.41	10.77	11.15	11.55	11.98	12.44	12.92	13.43	13.71	14.36	15.05	15.77	16.53	17.33	18.17	19.05	19.97	20.95
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69
Total Fixed Cost	Rs Lakh		109.87	107.26	104.72	102.25	99.85	97.54	95.30	93.15	91.09	89.13	74.94	77.01	79.18	81.48	83.90	86.46	89.16	92.00	95.01	98.18

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
Variable COG	Rs/kWh		2.55	2.67	2.81	2.95	3.10	3.25	3.41	3.58	3.76	3.95	4.15	4.36	4.57	4.80	5.04	5.29	5.56	5.84	6.13	6.44
O&M expn	Rs/kWh		0.33	0.35	0.37	0.39	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.68	0.72	0.77	0.81	0.86	0.90	0.96
Depreciation	Rs/kWh		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Int. on term loan	Rs/kWh		0.83	0.75	0.66	0.57	0.48	0.40	0.31	0.22	0.13	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		0.23	0.24	0.25	0.25	0.26	0.27	0.28	0.29	0.30	0.32	0.32	0.34	0.35	0.37	0.39	0.41	0.43	0.45	0.47	0.49
RoE	Rs/kWh		0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Total COG	Rs/kWh		5.13	5.20	5.27	5.35	5.45	5.55	5.66	5.78	5.91	6.05	6.21	6.44	6.72	7.02	7.33	7.66	8.00	8.37	8.75	9.14

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2	108.2
Fixed Cost			98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4

Variable Cost (FY10-11)	2.55
Levillised Tariff Fixed	2.32
Applicable Tariff (FY10-11)	4.86

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

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	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																					
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	0.00	0.00
Energy generation	MU	2.40	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07

Levellised benefit	0.24	Rs/Unit
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Annexure – 4C

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Maharashtra

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions			
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1			
			Auxillary Consumption	%	8.5%			
			Plant Load Factor	%	60%			
			Life of Power Plant	Years	20			
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07			
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%			
			Equity	%	30%			
			Total Debt Amount	Rs Lacs	278.65			
			Total Equity Amount	Rs Lacs	119.42			
			<u>Debt Component</u>	Loan Amount	Rs Lacs	278.65		
				Moratorium Period	years	0		
				Repayment Period(incld Moratorium)	years	10		
				Interest Rate	%	13.39%		
				<u>Equity Component</u>	Equity amount	Rs Lacs	119.42	
			Return on Equity for first 10 years		% p.a	19.00%		
			RoE Period		Year	10.00		
			Return on Equity after 10 years			24.00%		
			Weighted average of ROE			21.50%		
			Discount Rate (equiv. to WACC)		15.82%			
			4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation	% p.a	0%
HSD Price Escalation	% p.a	0%						
Discount Rate	% p.a	16%						
<u>Depreciation</u>	Depreciation Rate(power plant)	%				7.00%		
	Depreciation Rate 11th year onwards	%				2.00%		
	Years for 7% depreciation rate					10.00		
	MAT Rate	%				16.995%		
	Corporate Tax Rate	%				33.99%		
5	Working Capital	<u>For Fixed Charges</u>				O&M Charges	Months	1
						Maintenance Spare	(% of O&M exepenses)	15%
						Receivables for Debtors	Months	2
			<u>For Variable Charges</u>	Bagasse Stock	Months	4		
				Interest On Working Capital	%	12.89%		
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3600			
			During Stabilization Period	Kcal/kwh	3600			
			<u>Bagasse</u>	Base Price(FY10-11)	Rs/T	1159		
				GCV - Bagasse	Kcal/kg	2250		
				Bagasse Price Escalation Factor		5%		
7	Allocation of Bagasse to Power and Steam		Power	As a % of fuel cost	100%			
			Steam	As a % of fuel cost	0%			
8	Operation & Maintenance		power plant (FY 2010-11)		14.11			
			Total O & M Expenses Escalation	%	5.72%			
9	Generation and Sale Of Energy		No. of Days	Days	365			
			Total No. of Hours	Hrs	8760			

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26
Auxiliary Consumption	MU		0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Net Generation	MU		4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		97.47	102.35	107.47	112.84	118.48	124.41	130.63	137.16	144.01	151.22	158.78	166.71	175.05	183.80	192.99	202.64	212.77	223.41	234.58	246.31

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	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		9.05	9.33	9.63	9.95	10.29	10.65	11.04	11.45	11.88	12.34	12.56	13.15	13.78	14.44	15.13	15.86	16.63	17.43	18.28	19.17
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	28.66	28.66	28.66	28.66	28.66	28.66	28.66	28.66	28.66	28.66
Total Fixed Cost	Rs Lakh		109.16	106.52	103.94	101.43	99.00	96.64	94.35	92.16	90.05	88.04	73.80	75.80	77.92	80.15	82.51	84.99	87.62	90.39	93.31	96.40

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
Variable COG	Rs/kWh		2.03	2.13	2.23	2.35	2.46	2.59	2.72	2.85	2.99	3.14	3.30	3.47	3.64	3.82	4.01	4.21	4.42	4.65	4.88	5.12
O&M expn	Rs/kWh		0.29	0.31	0.33	0.35	0.37	0.39	0.41	0.43	0.46	0.48	0.51	0.54	0.57	0.60	0.64	0.68	0.71	0.76	0.80	0.84
Depreciation	Rs/kWh		0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Int. on term loan	Rs/kWh		0.74	0.66	0.58	0.50	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		0.19	0.19	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.26	0.26	0.27	0.29	0.30	0.31	0.33	0.35	0.36	0.38	0.40
RoE	Rs/kWh		0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Total COG	Rs/kWh		4.30	4.34	4.40	4.46	4.52	4.60	4.68	4.77	4.87	4.97	4.84	5.04	5.26	5.49	5.73	5.98	6.25	6.52	6.82	7.13

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5
Fixed Cost			97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5

Variable Cost (FY10-11)	2.03
Levillised Tariff Fixed	2.03
Applicable Tariff (FY10-11)	4.05

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																						
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	0.00	0.00
Energy generation	MU	2.40	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	

Levellised benefit	0.24	Rs/Unit
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Annexure – 4D

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Madhya Pradesh

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption	%	8.5%
			Plant Load Factor	%	53%
			Life of Power Plant	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	278.65
			Total Equity Amount	Rs Lacs	119.42
		Debt Component	Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incl. Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component	Equity amount	Rs Lacs	119.42
			Return on Equity for first 10 years	% p.a	19.00%
			RoE Period	Year	10.00
			Return on Equity after 10 years		24.00%
			Weighted average of ROE		21.50%
Discount Rate (equiv. to WACC)		15.82%			
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16%
		Depreciation	Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			MAT Rate	%	16.995%
			Corporate Tax Rate	%	33.99%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		For Variable Charges	Receivables for Debtors	Months	2
			Bagasse Stock	Months	4
		Interest On Working Capital	%	12.89%	
		6	Fuel Related Assumptions	Heat Rate	After Stabilisation period
During Stabilization Period	Kcal/kwh				3600
Bagasse	Base Price(FY10-11)			Rs/T	835
	GCV - Bagasse			Kcal/kg	2250
	Bagasse Price Escalation Factor				5%
7	Allocation of Bagasse to Power and Steam	Power	As a % of fuel cost		100%
		Steam	As a % of fuel cost		0%
8	Operation & Maintenance	power plant (FY 2010-11)			14.11
		Total O & M Expenses Escalation	%		5.72%
9	Generation and Sale Of Energy	No. of Days		Days	365
		Total No. of Hours		Hrs	8760

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64
Auxiliary Consumption	MU		0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Net Generation	MU		4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		62.03	65.13	68.39	71.80	75.39	79.16	83.12	87.28	91.64	96.23	101.04	106.09	111.39	116.96	122.81	128.95	135.40	142.17	149.28	156.74

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		6.72	6.88	7.06	7.25	7.45	7.67	7.91	8.16	8.43	8.71	9.00	9.29	9.59	10.04	10.51	11.01	11.53	12.08	12.66	13.27
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69
Total Fixed Cost	Rs Lakh		106.83	104.07	101.37	98.73	96.16	93.66	91.23	88.87	86.60	84.42	82.30	80.23	78.21	76.23	74.29	72.39	70.53	68.71	66.93	65.19

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
Variable COG	Rs/kWh		1.46	1.53	1.61	1.69	1.77	1.86	1.96	2.05	2.16	2.27	2.38	2.50	2.62	2.75	2.89	3.04	3.19	3.35	3.51	3.69
O&M expn	Rs/kWh		0.33	0.35	0.37	0.39	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.68	0.72	0.77	0.81	0.86	0.90	0.96
Depreciation	Rs/kWh		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Int. on term loan	Rs/kWh		0.83	0.75	0.66	0.57	0.48	0.40	0.31	0.22	0.13	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		0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.30	0.31
RoE	Rs/kWh		0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Total COG	Rs/kWh		3.97	3.98	4.00	4.01	4.04	4.07	4.10	4.15	4.20	4.25	4.30	4.36	4.42	4.49	4.56	4.64	4.72	4.81	4.90	5.00

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0
Fixed Cost			94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4

Variable Cost (FY10-11)	1.46
Levillised Tariff Fixed	2.22
Applicable Tariff (FY10-11)	3.68

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																						
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	0.00	0.00
Energy generation	MU	2.12	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.07

Levellised benefit	0.27	Rs/Unit
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Annexure – 4E

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Punjab

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxillary Consumption	%	8.5%
			Plant Load Factor	%	53%
			Life of Power Plant	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	278.65
			Total Equity Amount	Rs Lacs	119.42
		Debt Component	Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component	Equity amount	Rs Lacs	119.42
			Return on Equity for first 10 years	% p.a	19.00%
			RoE Period	Year	10.00
			Return on Equity after 10 years		24.00%
			Weighted average of ROE		21.50%
Discount Rate (equiv. to WACC)		15.82%			
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16%
		Depreciation	Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			MAT Rate	%	16.995%
			Corporate Tax Rate	%	33.99%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		For Variable Charges	Receivables for Debtors	Months	2
			Bagasse Stock	Months	4
		Interest On Working Capital	%	12.89%	
		6	Fuel Related Assumptions	Heat Rate	After Stabilisation period
During Stabilization Period	Kcal/kwh				3600
Bagasse	Base Price(FY10-11)			Rs/T	1443
	GCV - Bagasse			Kcal/kg	2250
	Bagasse Price Escalation Factor				5%
7	Allocation of Bagasse to Power and Steam	Power	As a % of fuel cost		100%
		Steam	As a % of fuel cost		0%
8	Operation & Maintenance	power plant (FY 2010-11)			14.11
		Total O & M Expenses Escalation	%		5.72%
9	Generation and Sale Of Energy	No. of Days		Days	365
		Total No. of Hours		Hrs	8760

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64
Auxiliary Consumption	MU		0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Net Generation	MU		4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		107.19	112.55	118.17	124.08	130.29	136.80	143.64	150.82	158.36	166.28	174.60	183.33	192.49	202.12	212.22	222.83	233.98	245.68	257.96	270.86

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	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		9.69	10.00	10.34	10.69	11.07	11.47	11.89	12.35	12.82	13.33	13.60	14.25	14.93	15.65	16.40	17.19	18.02	18.90	19.82	20.78
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	28.66	28.66	28.66	28.66	28.66	28.66	28.66	28.66	28.66	28.66
Total Fixed Cost	Rs Lakh		109.80	107.19	104.65	102.17	99.77	97.45	95.21	93.06	91.00	89.03	74.84	76.89	79.07	81.36	83.77	86.32	89.01	91.85	94.85	98.01

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
Variable COG	Rs/kWh		2.52	2.65	2.78	2.92	3.07	3.22	3.38	3.55	3.73	3.91	4.11	4.32	4.53	4.76	5.00	5.25	5.51	5.78	6.07	6.38
O&M expn	Rs/kWh		0.33	0.35	0.37	0.39	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.68	0.72	0.77	0.81	0.86	0.90	0.96
Depreciation	Rs/kWh		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Int. on term loan	Rs/kWh		0.83	0.75	0.66	0.57	0.48	0.40	0.31	0.22	0.13	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		0.23	0.24	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.34	0.35	0.37	0.39	0.40	0.42	0.44	0.47	0.49
RoE	Rs/kWh		0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Total COG	Rs/kWh		5.11	5.17	5.25	5.33	5.42	5.51	5.62	5.74	5.87	6.01	6.13	6.39	6.67	6.97	7.28	7.60	7.95	8.31	8.68	

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2	107.2
Fixed Cost			98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3	98.3

Variable Cost (FY10-11)	2.52
Levillised Tariff Fixed	2.31
Applicable Tariff (FY10-11)	4.84

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																						
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	0.00	0.00
Energy generation	MU	2.12	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.07

Levellised benefit	0.27	Rs/Unit
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Annexure – 4F

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Uttar Pradesh

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption	%	8.5%	
			Plant Load Factor	%	45%	
			Life of Power Plant	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07	
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	278.65	
			Total Equity Amount	Rs Lacs	119.42	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	278.65
				Moratorium Period	years	0
				Repayment Period(incl'd Moratorium)	years	10
				Interest Rate	%	13.39%
				<u>Equity Component</u>	Equity amount	Rs Lacs
			Return on Equity for first 10 years		% p.a	19.00%
			RoE Period		Year	10.00
			Return on Equity after 10 years			24.00%
			Weighted average of ROE			21.50%
			Discount Rate (equiv. to WACC)		15.82%	
			4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation
HSD Price Escalation	% p.a	0%				
Discount Rate	% p.a	16%				
<u>Depreciation</u>	Depreciation Rate(power plant)	%				7.00%
	Depreciation Rate 11th year onwards	%				2.00%
	Years for 7% depreciation rate					10.00
	MAT Rate	%				16.995%
	Corporate Tax Rate	%				33.99%
5	Working Capital	<u>For Fixed Charges</u>				O&M Charges
			Maintenance Spare	(% of O&M exepenses)	15%	
			Receivables for Debtors	Months	2	
			<u>For Variable Charges</u>	Bagasse Stock	Months	4
				Interest On Working Capital	%	12.89%
			6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period
During Stabilization Period	Kcal/kwh	3600				
<u>Bagasse</u>	Base Price(FY10-11)	Rs/T				1046
	GCV - Bagasse	Kcal/kg				2250
	Bagasse Price Escalation Factor					5%
7	Allocation of Bagasse to Power and Steam	<u>Power</u>	As a % of fuel cost		100%	
			<u>Steam</u>	As a % of fuel cost	0%	
8	Operation & Maintenance	<u>power plant (FY 2010-11)</u>			14.11	
			<u>Total O & M Expenses Escalation</u>	%	5.72%	
9	Generation and Sale Of Energy	<u>No. of Days</u>		Days	365	
			<u>Total No. of Hours</u>	Hrs	8760	

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94
Auxiliary Consumption	MU		0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Net Generation	MU		3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61	3.61

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		65.95	69.24	72.70	76.34	80.16	84.16	88.37	92.79	97.43	102.30	107.42	112.79	118.43	124.35	130.57	137.10	143.95	151.15	158.70	166.64

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		6.97	7.15	7.34	7.55	7.77	8.00	8.25	8.52	8.81	9.12	9.18	9.60	10.05	10.53	11.02	11.55	12.10	12.67	13.28	13.92
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69
Total Fixed Cost	Rs Lakh		107.08	104.34	101.65	99.03	96.47	93.99	91.57	89.24	86.98	84.82	70.41	72.25	74.19	76.23	78.39	80.68	83.09	85.63	88.31	91.15

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
Variable COG	Rs/kWh		1.83	1.92	2.02	2.12	2.22	2.33	2.45	2.57	2.70	2.84	2.98	3.13	3.28	3.45	3.62	3.80	3.99	4.19	4.40	4.62
O&M expn	Rs/kWh		0.39	0.41	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.68	0.72	0.76	0.81	0.85	0.90	0.95	1.01	1.06	1.13
Depreciation	Rs/kWh		0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Int. on term loan	Rs/kWh		0.98	0.88	0.78	0.67	0.57	0.47	0.36	0.26	0.16	0.05	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	0.20	0.21	0.22	0.22	0.23	0.24	0.24	0.25	0.25	0.27	0.28	0.29	0.31	0.32	0.34	0.35	0.37	0.39
RoE	Rs/kWh		0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Total COG	Rs/kWh		4.80	4.81	4.83	4.86	4.90	4.94	4.99	5.05	5.11	5.19	4.93	5.13	5.34	5.56	5.79	6.04	6.29	6.56	6.85	7.15

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9
Fixed Cost			94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7

Variable Cost (FY10-11)	1.83
Levillised Tariff Fixed	2.62
Applicable Tariff (FY10-11)	4.45

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																						
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	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
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	

Levellised benefit	0.32	Rs/Unit
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Annexure – 4G

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Tamil Nadu

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Auxiliary Consumption	%	8.5%
			Plant Load Factor	%	60%
			Life of Power Plant	Years	20
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07
3	Financial Assumptions	Debt: Equity	Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	278.65
			Total Equity Amount	Rs Lacs	119.42
		Debt Component	Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incl'd Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component	Equity amount	Rs Lacs	119.42
			Return on Equity for first 10 years	% p.a	19.00%
			RoE Period	Year	10.00
			Return on Equity after 10 years		24.00%
			Weighted average of ROE		21.50%
			Discount Rate (equiv. to WACC)		15.82%
4	Financial Assumptions	Economic Assumptions	Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16%
		Depreciation	Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			MAT Rate	%	16.995%
			Corporate Tax Rate	%	33.99%
5	Working Capital	For Fixed Charges	O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
		For Variable Charges	Receivables for Debtors	Months	2
			Bagasse Stock	Months	4
		Interest On Working Capital	%	12.89%	
		6	Fuel Related Assumptions	Heat Rate	After Stabilisation period
During Stabilization Period	Kcal/kwh				3600
Bagasse	Base Price(FY10-11)			Rs/T	1283
	GCV - Bagasse			Kcal/kg	2250
	Bagasse Price Escalation Factor				5%
7	Allocation of Bagasse to Power and Steam	Power	As a % of fuel cost		100%
		Steam	As a % of fuel cost		0%
8	Operation & Maintenance	power plant (FY 2010-11)			14.11
		Total O & M Expenses Escalation	%		5.72%
9	Generation and Sale Of Energy	No. of Days		Days	365
		Total No. of Hours		Hrs	8760

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26	5.26
Auxiliary Consumption	MU		0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Net Generation	MU		4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		107.89	113.28	118.95	124.90	131.14	137.70	144.58	151.81	159.40	167.37	175.74	184.53	193.76	203.44	213.62	224.30	235.51	247.29	259.65	272.63

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	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		9.74	10.05	10.39	10.75	11.13	11.53	11.96	12.41	12.89	13.40	13.68	14.33	15.01	15.73	16.49	17.29	18.13	19.00	19.93	20.90
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69
Total Fixed Cost	Rs Lakh		109.85	107.24	104.70	102.23	99.83	97.51	95.27	93.12	91.07	89.10	74.91	76.97	79.15	81.44	83.86	86.42	89.12	91.96	94.96	98.13

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
Variable COG	Rs/kWh		2.24	2.36	2.47	2.60	2.73	2.86	3.01	3.16	3.31	3.48	3.65	3.84	4.03	4.23	4.44	4.66	4.90	5.14	5.40	5.67
O&M expn	Rs/kWh		0.29	0.31	0.33	0.35	0.37	0.39	0.41	0.43	0.46	0.48	0.51	0.54	0.57	0.60	0.64	0.68	0.71	0.76	0.80	0.84
Depreciation	Rs/kWh		0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Int. on term loan	Rs/kWh		0.74	0.66	0.58	0.50	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		0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.28	0.30	0.31	0.33	0.34	0.36	0.38	0.40	0.41	0.43
RoE	Rs/kWh		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
Total COG	Rs/kWh		4.53	4.59	4.65	4.72	4.80	4.89	4.99	5.09	5.21	5.33	5.21	5.44	5.67	5.92	6.19	6.46	6.75	7.05	7.37	7.71

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9
Fixed Cost			98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4

Variable Tariff (FY10-11)	2.24
Levillised Tariff Fixed	2.05
Applicable Tariff (FY10-11)	4.29

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																						
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	0.00	0.00
Energy generation	MU	2.40	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	

Levellised benefit	0.24	Rs/Unit
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Annexure – 4H

2.1 Form Template for Non-Fossil Fueled Based Cogeneration Power Projects- Other States

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions	
1	Power Generation	<u>Capacity</u>	Installed Power Generation Capacity	MW	1	
			Auxillary Consumption	%	8.5%	
			Plant Load Factor	%	53%	
			Life of Power Plant	Years	20	
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	398.07	
3	Financial Assumptions	<u>Debt: Equity</u>	Debt	%	70%	
			Equity	%	30%	
			Total Debt Amount	Rs Lacs	278.65	
			Total Equity Amount	Rs Lacs	119.42	
			<u>Debt Component</u>	Loan Amount	Rs Lacs	278.65
				Moratorium Period	years	0
				Repayment Period(incl. Moratorium)	years	10
				Interest Rate	%	13.39%
			<u>Equity Component</u>	Equity amount	Rs Lacs	119.42
				Return on Equity for first 10 years	% p.a	19.00%
				RoE Period	Year	10.00
				Return on Equity after 10 years		24.00%
				Weighted average of ROE		21.50%
Discount Rate (equiv. to WACC)		15.82%				
4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation	% p.a	0%	
			HSD Price Escalation	% p.a	0%	
			Discount Rate	% p.a	16%	
			<u>Depreciation</u>	Depreciation Rate(power plant)	%	7.00%
				Depreciation Rate 11th year onwards	%	2.00%
				Years for 7% depreciation rate		10.00
				MAT Rate	%	16.995%
				Corporate Tax Rate	%	33.99%
5	Working Capital	<u>For Fixed Charges</u>	O&M Charges	Months	1	
			Maintenance Spare (% of O&M expenses)		15%	
			Receivables for Debtors	Months	2	
			<u>For Variable Charges</u>	Bagasse Stock	Months	4
				Interest On Working Capital	%	12.89%
6	Fuel Related Assumptions	<u>Heat Rate</u>	After Stabilisation period	Kcal/kwh	3600	
			During Stabilization Period	Kcal/kwh	3600	
			<u>Bagasse</u>	Base Price(FY10-11)	Rs/T	1200
				GCV - Bagasse	Kcal/kg	2250
				Bagasse Price Escalation Factor		5%
7	Allocation of Bagasse to Power and Steam	<u>Power</u>	As a % of fuel cost		100%	
			<u>Steam</u>	As a % of fuel cost	0%	
8	Operation & Maintenance	<u>power plant (FY 2010-11)</u>			14.11	
			<u>Total O & M Expenses Escalation</u>	%	5.72%	
9	Generation and Sale Of Energy	<u>No. of Days</u>		Days	365	
			<u>Total No. of Hours</u>	Hrs	8760	

2.2 Form Template for (Non fossil Fueled Based Cogeneration Power 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
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64
Auxiliary Consumption	MU		0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Net Generation	MU		4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25

Variable Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		89.17	93.63	98.31	103.22	108.39	113.81	119.50	125.47	131.74	138.33	145.25	152.51	160.14	168.14	176.55	185.38	194.65	204.38	214.60	225.33

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		14.11	14.92	15.77	16.68	17.63	18.64	19.71	20.83	22.02	23.28	24.62	26.02	27.51	29.09	30.75	32.51	34.37	36.33	38.41	40.61
Depreciation	Rs Lakh		27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Interest on term loan	Rs Lakh		35.44	31.71	27.98	24.25	20.52	16.79	13.06	9.33	5.60	1.87	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		8.50	8.76	9.03	9.32	9.63	9.96	10.30	10.68	11.07	11.49	11.67	12.22	12.80	13.41	14.05	14.73	15.43	16.18	16.96	17.78
Return on Equity	Rs Lakh		22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69	22.69
Total Fixed Cost	Rs Lakh		108.61	105.95	103.34	100.80	98.33	95.94	93.62	91.39	89.24	87.19	72.90	74.86	76.93	79.12	81.42	83.86	86.42	89.13	92.00	95.01

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
Variable COG	Rs/kWh		2.10	2.20	2.31	2.43	2.55	2.68	2.81	2.95	3.10	3.26	3.42	3.59	3.77	3.96	4.16	4.36	4.58	4.81	5.05	5.30
O&M expn	Rs/kWh		0.33	0.35	0.37	0.39	0.42	0.44	0.46	0.49	0.52	0.55	0.58	0.61	0.65	0.68	0.72	0.77	0.81	0.86	0.90	0.96
Depreciation	Rs/kWh		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Int. on term loan	Rs/kWh		0.83	0.75	0.66	0.57	0.48	0.40	0.31	0.22	0.13	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		0.20	0.21	0.21	0.22	0.23	0.23	0.24	0.25	0.26	0.27	0.27	0.29	0.30	0.32	0.33	0.35	0.36	0.38	0.40	0.42
RoE	Rs/kWh		0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Total COG	Rs/kWh		4.66	4.70	4.75	4.80	4.87	4.94	5.02	5.10	5.20	5.31	5.14	5.35	5.58	5.82	6.07	6.34	6.62	6.91	7.22	7.54

Levillised Tariff	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	0.745	0.644	0.556	0.480	0.414	0.358	0.309	0.267	0.230	0.199	0.172	0.148	0.128	0.110	0.095	0.082	0.071	0.061
Variable Cost			89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2
Fixed Cost			96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7

Variable Cost (FY10-11)	2.10
Levillised Tariff Fixed	2.28
Applicable Tariff (FY10-11)	4.38

Determination of Accelerated Depreciation for Non fossil Fueled Based Cogeneration Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	398.1

Years ----->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%
Book Depreciation	Rs Lakh	10.51	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	21.02	11.46	0.00	0.00

Accelerated Depreciation																						
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	159.23	191.07	38.21	7.64	1.53	0.31	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	148.72	170.05	17.20	-13.38	-19.49	-20.71	-20.96	-21.01	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-21.02	-11.46	0.00	0.00
Tax Benefit	Rs Lakh	50.55	57.80	5.85	-4.55	-6.62	-7.04	-7.12	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-7.14	-3.90	0.00	0.00
Energy generation	MU	2.12	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.52	0.45	0.38	0.33	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.07

Levellised benefit	0.27	Rs/Unit
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Form 1.1 Form Template for (Solar PV Power Projects) Parameters Assumptions

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Asumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	19.0%
			Deration Factor	%	0.0%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	1690
3	Financial Assumptions		Tariff Period	Years	25
			<u>Debt: Equity</u>		
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	1183
			Total Equity Amout	Rs Lacs	507
			<u>Debt Component</u>		
			Loan Amount	Rs Lacs	1183.00
			Moratorium Period	years	0
			Repayment Period(inclld Moratorium)	years	10
			Interest Rate	%	13.39%
			<u>Equity Component</u>		
			Equity amount	Rs Lacs	507.00
			Return on Equity for first 10 years	% p.a	19.00%
RoE Period	Year	10			
Return on Equity 11th year onwards	% p.a	24.00%			
Weighted average of ROE		22.00%			
Discount Rate		15.97%			
4	Financial Assumptions	<u>Economic Assumptions</u>	Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16%
			<u>Fiscal Assumptions</u>		
			Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
			<u>Depreciation</u>		
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	1.33%
Years for 7% rate		10			
5	Working Capital		<u>For Fixed Charges</u>		
			O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
			<u>For Variable Charges</u>		
Interest On Working Capital	%	12.89%			
7	Operation & Maintenance		power plant (FY 10-11)		9.5148
			Total O & M Expenses Escalation	%	5.72%

Form 1.2 Form Template for (Solar PV) - Determination of Tariff Component

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		9.51	10.06	10.63	11.24	11.89	12.57	13.28	14.04	14.85	15.70	16.59	17.54	18.55	19.61	20.73	21.92	23.17	24.49	25.90	27.38	28.94	30.60	32.35	34.20	36.16
Depreciation	Rs Lakh		118.30	118.30	118.30	118.30	118.30	118.30	118.30	118.30	118.30	118.30	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53	22.53
Interest on term loan	Rs Lakh		150.47	134.63	118.79	102.95	87.11	71.28	55.44	39.60	23.76	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		8.52	8.20	7.88	7.56	7.25	6.94	6.63	6.32	6.02	5.71	4.04	4.09	4.14	4.20	4.26	4.32	4.39	4.46	4.53	4.61	4.69	4.78	4.87	4.97	5.07
Return on Equity	Rs Lakh		96.33	96.33	96.33	96.33	96.33	96.33	96.33	96.33	96.33	96.33	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68	121.68
Total Fixed Cost	Rs Lakh		383.13	367.52	351.94	336.39	320.88	305.41	289.98	274.59	259.25	243.96	164.85	165.85	166.90	168.02	169.20	170.45	171.77	173.16	174.64	176.20	177.85	179.59	181.43	183.38	185.44

Levillised COG

Per Unit Cost of Generat	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh		0.57	0.60	0.64	0.68	0.71	0.75	0.80	0.84	0.89	0.94	1.00	1.05	1.11	1.18	1.25	1.32	1.39	1.47	1.56	1.64	1.74	1.84	1.94	2.05	2.17
Depreciation	Rs/kWh		7.11	7.11	7.11	7.11	7.11	7.11	7.11	7.11	7.11	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	
Int. on term loan	Rs/kWh		9.04	8.09	7.14	6.19	5.23	4.28	3.33	2.38	1.43	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Int. on working capital	Rs/kWh		0.51	0.49	0.47	0.45	0.44	0.42	0.40	0.38	0.36	0.34	0.24	0.25	0.25	0.26	0.26	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.29	0.30	
RoE	Rs/kWh		5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	5.79	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	
Total COG	Rs/kWh		23.02	22.08	21.14	20.21	19.28	18.35	17.42	16.50	15.58	14.66	9.90	9.96	10.03	10.09	10.17	10.24	10.32	10.40	10.49	10.59	10.69	10.79	10.90	11.02	11.14

Discount Factor			1	0.862	0.744	0.641	0.553	0.477	0.411	0.354	0.306	0.264	0.227	0.196	0.169	0.146	0.126	0.108	0.093	0.081	0.069	0.060	0.052	0.045	0.038	0.033	0.029
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Levillised Tariff 17.91 Rs/Unit

Determination of Accelerated Depreciation Benefit for Solar PV Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	1690.0

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	44.62	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	89.23	48.67	0.00	0.00

Accelerated Depreciation																					
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Depm.	Rs Lakh	676.00	811.20	162.24	32.45	6.49	1.30	0.26	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	631.38	721.97	73.01	-56.78	-82.74	-87.93	-88.97	-89.18	-89.22	-89.23	-89.23	-89.23	-89.23	-89.23	-89.23	-89.23	-89.23	-48.67	0.00	0.00	
Tax Benefit	Rs Lakh	214.61	245.40	24.82	-19.30	-28.12	-29.89	-30.24	-30.31	-30.33	-30.33	-30.33	-30.33	-30.33	-30.33	-30.33	-30.33	-30.33	-30.33	-16.54	0.00	0.00
Energy generation	MU	0.83	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.07	0.06	

Levellised benefit	2.96	Rs/Unit
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Annexure – 6A

Form 1.1 Form Template for (Solar Thermal Power Projects) Parameters Assumptions

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	Power Generation	Capacity	Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	23.0%
			Auxiliary Consumption Factor	%	10.0%
			Useful Life	Years	25
2	Project Cost	Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	1530
3	Sources of Fund		Tariff Period	Years	25
			<u>Debt: Equity</u>		
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	1071
			Total Equity Amount	Rs Lacs	459
			<u>Debt Component</u>		
			Loan Amount	Rs Lacs	1071
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
			<u>Equity Component</u>		
			Equity amount	Rs Lacs	459.00
			Return on Equity for first 10 years	% p.a	19.00%
			RoE Period	Year	10
Return on Equity 11th year onwards	% p.a	24.00%			
Weighted average of ROE		22.00%			
Discount Rate		15.97%			
4	Financial Assumptions		<u>Economic Assumptions</u>		
			Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16%
			<u>Fiscal Assumptions</u>		
			Income Tax	%	33.99%
			MAT Rate (for first 10 years)	%	16.995%
			80 IA benefits	Yes/No	Yes
			<u>Depreciation</u>		
			Depreciation Rate for first 10 years	%	7.00%
Depreciation Rate 11th year onwards	%	1.33%			
Years for 7% rate		10			
5	Working Capital		<u>For Fixed Charges</u>		
			O&M Charges	Months	1
			Maintenance Spare	(% of O&M exepenses)	15%
			Receivables for Debtors	Months	2
			<u>For Variable Charges</u>		
Interest On Working Capital	%	12.89%			
7	Operation & Maintenance		power plant (FY10-11)		13.74
			Total O & M Expenses Escalation	%	5.72%

Form 1.2 Form Template for (Solar Thermal) - 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		1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		13.74	14.53	15.36	16.24	17.17	18.15	19.19	20.29	21.45	22.67	23.97	25.34	26.79	28.32	29.94	31.66	33.47	35.38	37.40	39.54	41.81	44.20	46.73	49.40	52.22
Depreciation	Rs Lakh		107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10	107.10
Interest on term loan	Rs Lakh		136.22	121.88	107.55	93.21	78.87	64.53	50.19	35.85	21.51	7.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		7.98	7.71	7.44	7.17	6.90	6.64	6.38	6.12	5.87	5.62	4.13	4.20	4.28	4.36	4.44	4.53	4.63	4.73	4.84	4.95	5.07	5.19	5.33	5.47	5.62
Return on Equity	Rs Lakh		87.21	87.21	87.21	87.21	87.21	87.21	87.21	87.21	87.21	87.21	87.21	87.21	87.21	110.16	110.16	110.16	110.16	110.16	110.16	110.16	110.16	110.16	110.16	110.16	110.16
Total Fixed Cost	Rs Lakh		352.26	338.43	324.65	310.92	297.25	283.63	270.06	256.57	243.13	229.77	158.66	160.10	161.63	163.24	164.95	166.75	168.66	170.67	172.80	175.05	177.44	179.95	182.61	185.43	188.40

Levelised COG	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh		0.76	0.80	0.85	0.90	0.95	1.00	1.06	1.12	1.18	1.25	1.32	1.40	1.48	1.56	1.65	1.75	1.85	1.95	2.06	2.18	2.31	2.44	2.58	2.72	2.88
Depreciation	Rs/kWh		5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91
Int. on term loan	Rs/kWh		7.51	6.72	5.93	5.14	4.35	3.56	2.77	1.98	1.19	0.40	0.00	0.00	0.00	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		0.44	0.43	0.41	0.40	0.38	0.37	0.35	0.34	0.32	0.31	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.29	0.29	0.30	0.31
RoE	Rs/kWh		4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08	6.08
Total COG	Rs/kWh		19.43	18.66	17.90	17.15	16.39	15.64	14.89	14.15	13.41	12.67	8.75	8.83	8.91	9.00	9.10	9.20	9.30	9.41	9.53	9.65	9.79	9.92	10.07	10.23	10.39

Levelised Tariff	15.31	Rs/Unit
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Determination of Accelerated Depreciation Benefit for Solar Thermal Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
Income Tax (MAT)	16.995%
Income Tax (Normal Rates)	33.99%
Capital Cost	1530.0

Years	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Book Depreciation	%	2.64%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	2.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	40.39	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	80.78	44.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Accelerated Depreciation																										
Opening	%	100%	60%	12%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	40%	48.00%	9.60%	1.92%	0.38%	0.08%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	60%	12%	2.40%	0.48%	0.10%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelerated Deprn.	Rs Lakh	612.00	734.40	146.88	29.38	5.88	1.18	0.24	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	571.61	653.62	66.10	-51.41	-74.91	-79.61	-80.55	-80.74	-80.77	-80.78	-80.78	-80.78	-80.78	-80.78	-80.78	-80.78	-80.78	-44.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	194.29	222.16	22.47	-17.47	-25.46	-27.06	-27.38	-27.44	-27.46	-27.46	-27.46	-27.46	-27.46	-27.46	-27.46	-27.46	-27.46	-14.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	0.91	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81
Discounting Factor		1.00	0.93	0.80	0.69	0.60	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.16	0.14	0.12	0.10	0.09	0.07	0.06	0.06	0.05	0.04	0.04	0.03

Levellised benefit	2.46	Rs/Unit
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