CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 53/2010 (Suo Motu)

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

Date of hearing: 09.03.2010 **Date of order: 26.4.2010**

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. The Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009, (hereinafter referred to as "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 Regulations enjoins upon the Commission to determine the generic tariff on the basis of the *suo motu* petition, for the RE technologies for which norms have been provided in the 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 suo *motu* basis 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 had suo motu issued the generic 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 hereby determines the generic tariff of the RE projects for the second year of control period (i.e. FY 2010-11) through this order.

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 Regulations, the Commission, by this order, based on the financial principles and technology specific parameters, determines the 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 31.3.2011 and entire capacity shall be commissioned on or before 31.3.2012 in case of solar PV projects and on or before 31.3.2013 in case of thermal projects.

6. The Commission vide its public notice no. 1/3/2009-Reg.Affairs (RE Tariff – FY – 2010-11) (ii)/CERC dated 26th February, 2010 issued Order proposing the 'Determination of Generic Tariff for RE Technologies for the second year of the Control Period i.e. FY 2010-11' and invited comments from the various stakeholders.

7. A public hearing was held on 9th March, 2010. A statement indicating in brief the comments received from various stakeholders is enclosed in **Attachment–1** . The list of participants in the public hearing is enclosed in **Attachment-2**.

COMMENT/SUGGESTION RECEIVED AND COMMISSION'S DECISION THEREON

8. Usage of fossil fuel in Solar Power Projects

Comments/Suggestions:

8.1. Stakeholders have submitted that for maintaining healthiness of the solar thermal power plant operations for longer run, a 5%~10% of fossil fuel firing shall be allowed in case of solar thermal power plant.

Analysis and Decision:

8.2. Regulation 7 provides for project specific tariff for determination in case of hybrid solar thermal power plants. Further, clause 2(1)(j) of the RE Regulations, define 'Hybrid Solar Thermal Power Plant' as the solar thermal power plant that uses other forms of energy input sources alongwith solar thermal energy for electricity generation, and wherein not less than 75% of electricity is generated from solar energy component.

8.3. With regard to the usage of fossil fuel in the solar thermal power projects, the Commission is of the view that configuration of each Hybrid Solar thermal power project may be unique in terms of usage of support fuel, project sizing, configuration, technology and operational requirement. Accordingly the Commission has made specific provision in the regulations for providing project

specific tariff determination for such hybrid solar thermal power plants so that tariff could be determined on case-to-case basis.

8.4. It is clarified that hybrid solar thermal projects which may use some percentage of fossil fuel are to approach the Commission for approval for project specific tariff determination as per Clause 7 (1) e) of the RE Regulations, 2009. We also clarify that the present petition pertains to the determination of generic tariff pursuant to Regulation 8 of the RE regulation and the first amendment to the RE Regulation and is not a review of the parameters relating to usage of fossil fuel in Solar Thermal power projects.

9. Minimum Alternate Tax Rate (MAT)

Comments/Suggestions:

9.1. The Stakeholders have submitted that the minimum alternate tax have now been increased to 18%, CST to 7.5% and cess to 3%. Accordingly, MAT should be considered as 19.93% for all renewable energy tariff.

Analysis and Decision:

9.2. We are of the view that the RE Regulation provide for normative return on equity in pre-tax terms. Accordingly, we clarify that that the review of above parameters (Minimum Alternate Tax) is not the subject matter of present regulatory process.

10. Capital Cost for Biomass Power Project

Comments/Suggestions:

10.1. The Stakeholders have submitted that taking into consideration the rise in the price of Steel, Cement and Labour, the Capital Cost has seen upward trend and accordingly, the capital cost for biomass power project of around Rs540 lakh /MW ~Rs580 lakh/MW may be specified and considered while determining the tariff.

Analysis and Decision :

10.2. With regard to Capital Cost for Biomass Power Projects for FY 2010-11, the Commission has specified the Capital Cost Indexation formulae under Regulation 35 of RE Regulations. It is noted that the key project cost determining factors such as Iron and Steel and Electrical and Machinery have followed a downward trend compared to the previous year. The detailed calculation of the capital cost applicable for the purpose of determination of generic tariff for biomass power project is explained in the Appendix – 3 and would apply.

11. Auxiliary Consumption and Line Losses

Comments/Suggestions:

11.1. One of the Stakehodlers has submitted that the Lines losses as 3%~4% may be considered in the auxiliary power consumption.

Analysis and Decision:

11.2. Regulation 2(1)(l) of RE Regulations, defines the 'Inter-connection Point' in relation to biomass power project as line isolator on outgoing feeder on HV side of generator transformer. Further, it is defined that the Inter-connection point shall mean interface point of RE generation facility with transmission system or distribution system, as the case may be. Thus, metering and accounting of energy by biomass power generating station will be at the Inter-connection point. Besides, the Clause 2(1)(b) of RE Regulations, defines the Auxiliary Power Consumption in relation to a period in case of generating station as "the quantum of energy consumed by auxiliary equipment of generating station, and transformer losses within the generating station, expressed as percentage of the sum of gross energy generated at generator terminals of all units of generating station". therefore we are of the view that the question of accounting line losses as part of auxiliary power consumption does not arise as it is not covered under the Regulations

12. O&M Expenses for Biomass Power Projects

Comments/Suggestions:

12.1. Some of the Stakeholders have submitted that the O&M norm for biomass power project should be around Rs 35Lakh/MW instead of Rs 21.41 lakh/MW as proposed for FY 2010-11. One stakeholder has submitted that considering insurance and other charges, the O&M Expenses for biomass power projects shall be 7% of the capital cost.

Analysis and Decision:

12.2. With regard to the Operation and Maintenance Expenses for biomass power projects, Regulation 39 of RE Regulations provides for normative O&M expenses as Rs 20.25 lakh/MW for first year of control period (FY 2009-10) with escalation factor of 5.72% per annum. Accordingly, normative O&M expense of Rs 21.41lakh /MW has been considered while determining the generic tariff for the plants to be commissioned during FY 2010-11 and the same shall apply. Besides, the review of above parameters (normative O&M expense for biomass power projects) is not the subject matter of present regulatory process which has been initiated for determination of generic tariff.

13. Transmission Line Cost for Solar PV power project(s)

Comments/Suggestions:

13.1. The cost of transmission line upto Utility's grid substation may be considered for the purpose of generic tariff determination or alternately, following amendment to the Regulations may be considered:

- For Solar PV projects of capacity less than 1 MW – the interconnection point shall be the outgoing line of the utility and the cost of connectivity shall be to the developer's account.
- For Solar PV projects of capacity 1MW and above – the interconnection point shall be the isolator of the developer's bus.

Analysis and Decision:

13.2. As per Regulation 12 of RE Regulations, the normative Capital Cost includes the cost of all capital work including plant and machinery, civil works, erection and commissioning, financing and interest during construction and the cost towards evacuation infrastructure up to the **interconnection point**. The Interconnection point for Solar PV power projects has been defined under Regulation 2(1)(l) as line isolator on outgoing feeder on HV side of the Pooling sub-station at the premises of the generating station similar to interfacing arrangement in case of solar thermal generating station or any other RE Generating Station. The inter-connection point represents the interface point of RE generation facility with transmission system or distribution system, as the case may be. The metering and accounting of energy of RE generating stations will be at the inter-connection point. We are of the view that above dispensation is in line with the definition of 'Interface Point' and other related provisions for installation and location of Interface Meters as stipulated under CEA (Installation and Operation of Meters) Regulations, 2006.

The Commission in its Order dated February 25, 2010 in Petition No. 13/2010 (Suo –Motu) has given the detailed analysis and ruling in respect of capital cost components including cost of evacuation infrastructure upto interconnection point. We are of the view that inclusion of transmission line cost upto utility's grid substation is not part of the normative capital cost and the review of the same is not the subject matter of present regulatory process which has been initiated for determination of generic tariff

14. Solar Insolation Level, Capacity Utilisation Factor & Panel Degradation

Comments/Suggestions:

14.1. One of the stakehodlers submitted that in view of the varying solar insolation levels across the country, the capacity utilization factor of 19% per annum is achievable at few places like Gujarat and Rajasthan. In view of the varying solar insolation, the mandated post tax Return on Equity of 16% is achievable only at few places. Accordingly, the capacity utilization factor linked to insolation level should be specified in such a way that it ensures 16% p.a. post tax return on equity to the developers for projects being developed anywhere in the country. Reliance Industries Ltd. has suggested that the Capacity Utilisation Factor as 15% may be considered.

14.2. The Stakeholders have submitted that the Solar PV Panels shall perform at approximately 80% of their original capacity by the end of 25 year period. Accordingly, the degradation factor may be considered while deriving the generic tariff.

14.3. One of the stakeholders has submitted that the useful life of the plant shall be considered taking into consideration the degradation of the panels. They have further submitted that 14%~15% degradation throughout the life of the projects may be considered.

Analysis and Decision:

The Commission in its order dated 25.2.2010 in Petition No. 13/2010 (Suo –Motu) at Para 15.4 has given the analysis and ruling in respect of capacity utilization factor, varying insolation levels and degradation factor. We are of the view that the review of

above parameters (capacity utilization factor, degradation factor etc.) is not the subject matter of present regulatory process which has been initiated for determination of generic tariff

15. O&M Expenses for Solar PV Power Projects

Comments/Suggestions:

15.1. Stakeholders have suggested that the O&M cost should be fixed on the basis of the project capacity. For 5 MW size project, the O&M cost should be INR 75lakh/annum.

15.2. Stakeholders have submitted that an insurance expense of 0.5% of Installed Capital Cost should be allowed per annum.

15.3. The cost towards maintenance spares @ 15% of O&M Expenses are part of Working Capital however have not been included in Form 1.2 "*Form Template for (Wind Power/Small Hydro Projects/Solar PV/Solar Thermal) : Determination of Tariff Components".* The same should be included.

Analysis and Decision

15.4. With regard to the Operation and Maintenance Expenses for biomass power projects, Regulation 59 of RE Regulations, provides for normative O&M expenses as Rs 9 Lakh/MW for first year of control period (FY 2009-10) with escalation factor of 5.72% per annum. Accordingly, normative O&M expense of Rs 9.51 Lakh/MW for FY 2010-11 has been considered alongwith escalation factor of 5.72% p.a. while determining the generic tariff for the solar PV power plants. Besides, the the review of above parameters (normative O&M expense for

solar PV power) is not the subject matter of present regulatory process which has been initiated for determination of generic tariff

15.5. With regard to the inclusion of cost towards maintenance spares @ 15% of O&M Expenses are part of Working Capital in Form 1.2, it is clarified that the interest on working capital has been calculated as per the Regulation 17 of the RE Regulations. “Working Capital” includes maintenance spares as 15% of O&M expense as one of the component of working capital as per Regulation 17 whereas Form 1.2 presents interest on such working capital.

16. Tariff for Solar PV Power Project

Comments/Suggestions:

16.1. One of the stakeholders has submitted that the tariff for Solar PV Power projects shall apply for entire control period and the same may be subjected to inflation consideration.

Analysis and Decision:

16.2. The Commission vide notification date 25.2.2010 has notified the first amendment to the RE Regulations, which has been extracted in para 3 of this order. The said Regulations shall given the tariff of the solar PV power projects and the same shall apply.

17. Tariff for Solar Thermal Power Projects

Comments/Suggestions:

17.1. One of the stakeholders has submitted that the tariff for solar thermal power plants of Rs15.31/kWh as proposed is on the lower side and the same may be determined at Rs16.50/kWh.

Commission's Analysis and Ruling:

17.2. The tariff for Solar Thermal power projects has been determined taking into consideration the benchmark capital cost for solar thermal power outlined in our Order dated 25.2.2010 in Petition No. 13/2010 (Suo-Motu) and in accordance with the terms and conditions as specified under RE Regulations.

Norms for Determination of Generic Levellised Tariff

18. The generic levellised 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

19. 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

20. Regulation 5 of the RE Regulations provides that the control period for determination of tariff for renewable energy 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 would be 2010-11.The Proviso to the said regulation stipulates that the tariff determined for the Renewable Energy 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, the generic tariff determined for solar photovoltaic power projects for year 2010-11 shall also apply for projects commissioned during 2011-12 and 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

21. In terms of Regulation 6 of the RE Regulations, the tariff period in respect of the Renewable Energy 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 Renewable Energy projects and the tariff determined under the regulations shall be applicable for the duration of the tariff period.

TARIFF STRUCTURE

22. 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

23. 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

24. 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

25. 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 n^{th} year

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

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

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

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

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

$SI_{(0)}$ = Average WPI Steel Index prevalent for calendar year (0) at the beginning of the Control Period 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)

F_1 = Factor for Land and Civil Works

F_2 = Factor for Erection and Commissioning

F_3 = Factor for IDC and Financing Cost

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

Parameters	Wind Energy	Small Hydro Projects	Biomass 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 Renewable Energy projects is discussed hereinunder:

(A) Wind Energy for FY 2010-11

26. Wind Power projects located at the wind sites having minimum annual Wind Power Density(WPD) of 200 Watt/m^2 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 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.467.13Lakh/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** to this order.

(B) Small Hydro Projects for FY 2010-11

27. 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.

28. The Commission under clause (1) of Regulation 28 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 5 MW to 25 MW	700 630
Other States	Below 5 MW 5 MW to 25 MW	550 500

29. In line with the indexation mechanism, specified in Regulation 29 of the RE 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 5 MW to 25 MW	634.94 571.44
Other States	Below 5 MW 5 MW to 25 MW	498.88 453.53

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) Biomass based Power Projects for FY 2010-11

30. 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.

31. 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 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.402.54Lakh/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** tothis order.

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

32. 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 Clause (4) of 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.

33. 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 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.398.07Lakh/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) Solar PV Projects for FY 2010-11

34. 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.

35. As per Regulation 5, the Commission by Order dated 25. 2.2010 in Petition No. 13/2010 has reviewed the 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. 3.2011 and entire capacity covered under the PPA is signed on or before 31. 3.2012.

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

36. 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.

37. As per Regulation 5, the Commission by the Order dated 25. 2.2010 in Petition No. 13/2010 has reviewed the benchmark capital cost for Solar Thermal Power projects to 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. 3.2011 and entire capacity covered under the PPA is signed on or before 31. 3.2013.

38. 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	467.13
(2) Small Hydro	
(a) Himachal Pradesh, Uttarakhand and North Eastern Stᵃtes (less than 5 MW)	634.94
(b) Himachal Pradesh, Uttarakhand and North Eastern States (5MW to 25 MW)	571.44
(c) Other States (below 5 MW)	498.88
(d) Other States (5MW to 25 MW)	453.53
(3) Biomass power projects	40.54
(4) Non-fossil fuel based co-generation projects	398.07
(5) Solar Photovoltaic power projects	1690
(6) Solar Thermal power projects	1530

DEBT-EQUITY RATIO

39. 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.

40. 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 Renewable Energy 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 **(6) Solar Thermal**	1183.00 1071.00	507.00 459.00

RETURN ON EQUITY

41. 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.

42. In accordance with the above regulations, return on equity has been worked out in respect of the Renewble Energy generaton stations, 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

43. 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."

In pursuance of the above provisions, the Commission while seeking comments on the order proposing tariffs for FY 2010-11 from all stakeholders, calculated the SBI prime lending rate based on the data available upto 16.2.2010(i.e. upto date of order). This data for the weighted average SBI prime lending rate has been considered as shown in the table below:

Period	**SBI PLR**
1-Apr- 2009 to 28-June 2009	12.25%
29-Jun-2009 to 13-Feb-2010	11.75%
Avg. SBI PLR	**11.89%**

The interest of the computations of interest on loan for determination of tariff in respect of the Renewable Energy 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:

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

44. 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."*

45. 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 Renewable Energy 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

46. Regulation 17 of the RE Regulations provides for the working capital requirements of the Renewable Energy 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"*

47. 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 Renewable Energy 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

OPERATION AND MAINTENANCE EXPENSES

48. Regulation 18 of the RE Regulations provides for Operation and Maintenance Expenses (O&M expenses) in respect of Renewable Energy 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."*

49. The normative O&M expenses for various Renewable Energy project 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, O&M cost norm for wind energy as Rs 6.87Lakh/MW for FY 2010-11 has been considered

(b) Small Hydro: Regulation 32 of RE Regulations provides 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 normative O&M Expenses for small hydro power for FY 2010-11, considered is as under:

Region	Project Size	O&M expenses (Rs Lakh/MW)
Himachal Pradesh, Uttarakhand and North Eastern States	Below 5 MW 5 MW to 25 MW	22.20 15.86
Other States	Below 5 MW 5 MW to 25 MW	17.97 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, O&M cost norm for biomass power as Rs 21.41 Lakh/MW for FY 2010-11 has been considered.

(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, O&M cost norm for non-fossil fuel based co-generation as Rs 14.11 Lakh/MW for FY 2010-11, has been considered.

(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, O&M expense norm for solar PV power project as Rs 9.51 Lakh/MW for FY 2010-11, has been considered.

(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 13.00 Lakh/MW to be escalated at the rate of 5.72% per annum over the tariff period for determination of the levellised tariff. Accordingly, O&M expense norm for solar thermal power project as Rs 13.74 Lakh/MW for FY 2010-11, has been considered.

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

CAPACITY UTILISATION FACTOR

50. 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/m2) 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%

51. 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)

52. 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) (b) During first year after stabilization (c) Second year onwards	 60% 70% 80%

53. 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

54. 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 Renewable Energy 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

55. 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) <u>Fuel Mix</u>

56. 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**

57. 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

58. 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
Rajasthan	3689
Tamil Nadu	3300
Uttar Pradesh	3371
Other States	3467

59. 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

60. 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. However, the due to non availability of the data for Pd and WPI as per regulations, latest figures for December, 2009 and December, 2008 corresponding to n^{th} and $(n-1)^{th}$ year has been considered while calculating the fuel price indexation for biomass and also non-fossil fuel based co-generation power projects. The detailed computations of the fuel price indexation mechanism and the determination of the

biomass fuel prices for FY 2010-11 thereof, has been enclosed as **Appendix-5** to this order. Accordingly, the biomass fuel price applicable for FY 2010-11 is as under:,

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

61. The Commission, In terms of Regulation 53 of the RE Regulations, the Commission has specified the price of bagasse during the period 2009-10 and has also specified the fuel price indexation mechanism, in case developer wishes to opt, for the remaining years of the control period. However, the due to non availability of the data for Pd and WPI as per regulations, latest figures for December, 2009 and December, 2008 corresponding to n^{th} and $(n-1)^{th}$ year has been considered while calculating the fuel price indexation for non-fossil fuel based co-generation power projects. The detailed computations of the fuel price indexation mechanism and the determination of the bagasse fuel prices for FY 2010-11, has been enclosed as **Appendix-6** to this order. Accordingly, the price of bagasse (for non-fossil fuel based co-generation projects) applicable for FY 2010-11 is as under:

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

In case of Biomass Power Projects and non-fossil fuel based co generation projects, the variable component of tariff is calculated based on the fuel cost for FY 2010 -11. This variable component will change each year based on whether a Renewable Energy Power Project developer opts for fuel price indexation or escalation factor of 5%. Hence,. while calculating the total applicable tariff for biomass based power projects, and non-fossil fuel based co generation projects levellisation of only fixed component is considered and the variable component for the first year of operation (i.e. 2010-11) is specified.

Subsidy or incentive by the Central / State Government

62. 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."

63. In terms of the above regulation, for the projects availing the benefit of accelerated depreciation as per applicable Income tax rate @ 33.99% (30% IT rate+ 10% surcharge +3% Education cess) has been considered. For the purpose of determining net depreciation benefits, depreciation @ 5.28% as per straight line method (Book depreciation as per Companies Act, 1956) has been compared with depreciation as per Income Tax rate i.e. 80% of the written down value method 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. While ascertaining income tax benefits of accelerated depreciation for first year of control period i.e. FY 2009-10, Minimum Alternate Tax (MAT) rate of 11.33% has been considered . However, some of the objectors including RERC have pointed out that the same should be calculated at corporate tax rate of 33.99%, since the RE Project developer, that wishes to avail such tax benefits would avail only if it has such capacity (or taxable profits) to absorb/avail such tax benefits. The applicable corporate tax rate for such RE project developers, (typically, funded on balance sheet of existing company) shall be marginal Income tax rate for corporate at 33.99%. taking note of the above the Tax benefit has been worked out as per normal tax rate on the net depreciation benefit. Also, the per unit levellised accelerated depreciation

benefit has been computed considering the weighted average cost of capital as discount factor.

64. 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)	3.17
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)	3.69
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 Tariff	Variable Tariff (FY 2010-11)	Applicable Tariff Rate (FY 2010-11)	Benefit of Accelerated Depreciation (if availed)	Net Applicable 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
Rajasthan	1.83	2.16	3.99	(0.19)	3.80
Tamil Nadu	1.86	2.40	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	2.54	4.86	(0.27)	4.59
Maharashtra	2.03	2.02	4.05	(0.24)	3.81
Madhya Pradesh	2.22	1.46	3.68	(0.27)	3.41
Punjab	2.31	2.53	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

65. The detailed computations of the normative Capital Cost in respect of various Renewable Energy technologies for FY 2010-11, in line with the indexation

mechanism stipulated under RE Regulations, have been enclosed to this order as per 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

66. 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

S No	Renewable Energy Projects	Annexure
	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
	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 6A
F	List of the Stakeholders submitted Comment	Attachment-1
	Summary of the Comments Received from Stakeholders	Attachment-2

67. Above generic tariff has been determined 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.

Sd/-	**Sd/-**	**Sd/-**	**Sd/-**
[M. DEENA DAYALAN]	**[V.S.VERMA]**	**[S. JAYARAMAN]**	**[Dr. PRAMOD DEO]**
MEMBER	**MEMBER**	**MEMBER**	**CHAIRPERSON**

Appendix – 1

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

Indexation Formulation
CC(n)=P&M(n)*[1+F1+F2+F3]
dn = (a*(SIn-1/SI0)-1)+b*(EIn-1/EI0)-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
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	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)

Appendix-2

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

Indexation Formulation
CC(n)=P&M(n)*[1+F1+F2+F3]
dn = (a*(SIn-1/SI0)-1)+b*(EIn-1/EI0)-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
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	HP/Uttrakhand/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+F1+F2+F3]

dn = (a*(SIn-1/SI0)-1)+b*(EIn-1/EI0)-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
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	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)

Appendix – 4

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

Indexation Formulation
CC(n)=P&M(n)*[1+F1+F2+F3]
dn = (a*(SIn-1/SI0)-1)+b*(EIn-1/EI0)-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)

Appendix – 5

Biomass Fuel Price across States for FY 2010-11

(As per Fuel Price Index Mechanism outlined under Regulation 45 and the availability of the required information)

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

Indexation Formulation **Pn = Pn-1*{a*(WPIn/WPIn-1)+b*(1+IRCn-1)+c*(Pdn/Pdn-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

Note: The Calculation of Pd and WPI is based on the figures available on December 2008 and 2009 as nth and (n-1)th year .

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)

Appendix – 6

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
$Pn = Pn\text{-}1*\{a*(WPIn/WPIn\text{-}1)+b*(1+IRCn\text{-}1)+c*(Pdn/Pdn\text{-}1)\}$

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	Baggase 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	467.13
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	326.99
			Total Equity Amout	Rs Lacs	140.14
		Debt Component			
			Loan Amount	Rs Lacs	326.99
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	140.14
			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%
			80 IA benefits	Yes/No	Yes
		Depreciation			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**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	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		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	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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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
Levellised 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 (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	0.88	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
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	**0.78**	**Rs/Unit**

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	467.13
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	326.99
			Total Equity Amout	Rs Lacs	140.14
		Debt Component			
			Loan Amount	Rs Lacs	326.99
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	140.14
			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%
			80 IA benefits	Yes/No	Yes
		Depreciation			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**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	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	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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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	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
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	0.10	0.10	0.10	0.10	0.11	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
Levellised 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 (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**

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	467.13
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	326.99
			Total Equity Amout	Rs Lacs	140.14
		Debt Component			
			Loan Amount	Rs Lacs	326.99
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	140.14
			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%
			80 IA benefits	Yes/No	Yes
		Depreciation			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**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	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
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
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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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
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
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	1.42	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
Levellised Tariff	**3.75**	Rs/Unit																									

Determination of Accelerated Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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**

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	467.13
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	326.99
			Total Equity Amout	Rs Lacs	140.14
		Debt Component			
			Loan Amount	Rs Lacs	326.99
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	140.14
			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%
			80 IA benefits	Yes/No	Yes
		Depreciation			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**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	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	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
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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Int. on term loan	Rs/kWh		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
Levellised 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 (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	1.31	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**

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	634.94
3	**Financial Assumption**				
			Tariff Period	Years	35
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	444.46
			Total Equity Amout	Rs Lacs	190.48
		Debt Component			
			Loan Amount	Rs Lacs	444.46
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Intrest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	190.46
			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**				
		Economic Assumptions			0
			Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16.14%
					0%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			80 IA benefits	Yes/No	Yes
		Depreciation			0.0%
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	0.80%
			Years for 7% rate		10
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			
		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		3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90

Fixed Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		22.20	23.47	24.81	26.23	27.73	29.32	31.00	32.77	34.64	36.63	38.72	40.94	43.28	45.75	48.37	51.14	54.06	57.15	60.42	63.88	67.53	71.40	75.48	79.80	84.36	89.19	94.29	99.68	105.38	111.41	117.79	124.52	131.65	139.18	147.14
Depreciation	Rs Lakh		44.45	44.45	44.45	44.45	44.45	44.45	44.45	44.45	44.45	44.45	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08
Interest on term loan	Rs Lakh		56.53	50.58	44.63	38.68	32.73	26.78	20.83	14.88	8.93	2.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		4.18	4.12	4.06	4.00	3.95	3.90	3.86	3.82	3.79	3.77	3.16	3.27	3.40	3.53	3.66	3.81	3.96	4.13	4.30	4.48	4.67	4.88	5.09	5.32	5.56	5.81	6.08	6.37	6.67	6.99	7.32	7.68	8.05	8.45	8.87
Return on Equity	Rs Lakh		36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	36.19	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72	45.72
Total Fixed Cost	**Rs Lakh**		**163.55**	**158.81**	**154.14**	**149.55**	**145.05**	**140.64**	**136.32**	**132.11**	**128.00**	**124.00**	**92.67**	**95.00**	**97.47**	**100.07**	**102.83**	**105.74**	**108.82**	**112.08**	**115.52**	**119.16**	**123.00**	**127.07**	**131.37**	**135.91**	**140.72**	**145.80**	**151.17**	**156.84**	**162.85**	**169.19**	**175.90**	**182.99**	**190.49**	**198.42**	**206.80**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh		0.57	0.60	0.64	0.67	0.71	0.75	0.79	0.84	0.89	0.94	0.99	1.05	1.11	1.17	1.24	1.31	1.39	1.46	1.55	1.64	1.73	1.83	1.93	2.04	2.16	2.29	2.42	2.55	2.70	2.85	3.02	3.19	3.37	3.57	3.77
Depreciation	Rs/kWh		1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Int. on term loan	Rs/kWh		1.45	1.30	1.14	0.99	0.84	0.69	0.53	0.38	0.23	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23
RoE	Rs/kWh		0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Total COG	**Rs/kWh**		**4.19**	**4.07**	**3.95**	**3.83**	**3.72**	**3.60**	**3.49**	**3.39**	**3.28**	**3.18**	**2.37**	**2.43**	**2.50**	**2.56**	**2.63**	**2.71**	**2.79**	**2.87**	**2.96**	**3.05**	**3.15**	**3.26**	**3.37**	**3.48**	**3.61**	**3.74**	**3.87**	**4.02**	**4.17**	**4.34**	**4.51**	**4.69**	**4.88**	**5.08**	**5.30**

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
Levellised Tariff	**3.59**	**Rs/Unit**																																			

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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%	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	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
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%
Accelrated 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	-31.08	-33.04	-33.42	-33.51	-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
Tax Benefit	Rs Lakh	80.63	92.20	9.32	-7.25	-10.57	-11.23	-11.36	-11.39	-11.39	-11.39	-11.39	-11.40	-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
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	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01

Levellised benefit	**0. 48**	**Rs/Unit**

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	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	571.44
3	**Financial Assumption**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	400.01
			Total Equity Amout	Rs Lacs	171.43
		Debt Component			
			Loan Amount	Rs Lacs	400.01
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Intrest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	171.43
			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**				
		Economic Assumptions			0
			Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16.14%
					0%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			80 IA benefits	Yes/No	Yes
		Depreciation			0.0%
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	0.80%
			Years for 7% rate		10
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			
		Intrest On Working Capital		%	12.89%
6	**Operation & Maintenance**				
		O&M Expense			
		power plant (FY 10-11)			15.86
		Total O & M Expenses Escalation		%	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		3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90

Fixed Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M Expenses	Rs Lakh		15.86	16.77	17.72	18.74	19.81	20.94	22.14	23.41	24.75	26.16	27.66	29.24	30.91	32.68	34.55	36.53	38.62	40.82	43.16	45.63	48.24	51.00	53.91	57.00	60.26	63.71	67.35	71.20	75.27	79.58	84.13	88.94	94.03	99.41	105.10
Depreciation	Rs Lakh		40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57
Interest on term loan	Rs Lakh		50.88	45.52	40.17	34.81	29.46	24.10	18.74	13.39	8.03	2.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		3.55	3.48	3.41	3.34	3.28	3.23	3.17	3.12	3.07	3.03	2.46	2.54	2.63	2.73	2.82	2.93	3.04	3.15	3.28	3.41	3.55	3.69	3.84	4.01	4.18	4.36	4.55	4.75	4.97	5.20	5.44	5.69	5.96	6.24	6.54
Return on Equity	Rs Lakh		32.57	32.57	32.57	32.57	32.57	32.57	32.57	32.57	32.57	32.57	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14	41.14
Total Fixed Cost	**Rs Lakh**		**142.86**	**138.34**	**133.87**	**129.47**	**125.12**	**120.84**	**116.63**	**112.49**	**108.43**	**104.44**	**75.83**	**77.50**	**79.26**	**81.12**	**83.09**	**85.17**	**87.37**	**89.69**	**92.15**	**94.75**	**97.50**	**100.40**	**103.47**	**106.72**	**110.15**	**113.78**	**117.62**	**121.67**	**125.96**	**130.49**	**135.28**	**140.35**	**145.71**	**151.37**	**157.35**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh		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	0.89	0.94	0.99	1.05	1.11	1.17	1.24	1.31	1.38	1.46	1.54	1.63	1.73	1.82	1.93	2.04	2.16	2.28	2.41	2.55	2.69
Depreciation	Rs/kWh		1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Int. on term loan	Rs/kWh		1.30	1.17	1.03	0.89	0.75	0.62	0.48	0.34	0.21	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.09	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
RoE	Rs/kWh		0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Total COG	**Rs/kWh**		**3.66**	**3.54**	**3.43**	**3.32**	**3.21**	**3.10**	**2.99**	**2.88**	**2.78**	**2.68**	**1.94**	**1.99**	**2.03**	**2.08**	**2.13**	**2.18**	**2.24**	**2.30**	**2.36**	**2.43**	**2.50**	**2.57**	**2.65**	**2.73**	**2.82**	**2.92**	**3.01**	**3.12**	**3.23**	**3.34**	**3.47**	**3.60**	**3.73**	**3.88**	**4.03**

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
Levellised Tariff	**3.06**	**Rs/Unit**																																			

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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%	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	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%
Accelrated Deprn.	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	0.00	0.00
Net Depreciation Benefit	Rs Lakh	213.49	244.12	24.69	-19.20	-27.98	-29.73	-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	0.00
Tax Benefit	Rs Lakh	72.57	82.98	8.39	-6.53	-9.51	-10.11	-10.23	-10.25	-10.26	-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	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	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01

Levellised 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**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	30%
			Auxiliary Consumption		1%
			Deration Factor	%	0.00%
			Useful Life	Years	35
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	498.88
3	**Financial Assumption**				
			Tariff Period	Years	35
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	349.21
			Total Equity Amout	Rs Lacs	149.66
		Debt Component			
			Loan Amount	Rs Lacs	349.21
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Intrest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	149.66
			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**				
		Economic Assumptions			0
			Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16.14%
					0%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			80 IA benefits	Yes/No	Yes
		Depreciation			0.0%
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	0.80%
			Years for 7% rate		10
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			
		Intrest On Working Capital		%	12.89%
6	**Operation & Maintenance**				
		O&M Expense			
		power plant (FY 10-11)			17.97
		Total O & M Expenses Escalation		%	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		17.97	19.00	20.09	21.24	22.45	23.74	25.09	26.53	28.05	29.65	31.35	33.14	35.03	37.04	39.16	41.40	43.76	46.27	48.91	51.71	54.67	57.80	61.10	64.60	68.29	72.20	76.33	80.70	85.31	90.19	95.35	100.80	106.57	112.67	119.11
Depreciation	Rs Lakh		34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99
Interest on term loan	Rs Lakh		44.42	39.74	35.07	30.39	25.72	21.04	16.36	11.69	7.01	2.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		3.31	3.26	3.22	3.18	3.14	3.10	3.07	3.05	3.02	3.00	2.53	2.62	2.72	2.83	2.94	3.06	3.18	3.31	3.45	3.60	3.76	3.92	4.10	4.28	4.47	4.68	4.90	5.13	5.37	5.63	5.90	6.19	6.49	6.81	7.15
Return on Equity	Rs Lakh		28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92	35.92
Total Fixed Cost	**Rs Lakh**		**129.06**	**125.36**	**121.73**	**118.16**	**114.66**	**111.24**	**107.89**	**104.62**	**101.44**	**98.35**	**73.78**	**75.67**	**77.67**	**79.78**	**82.01**	**84.36**	**86.86**	**89.49**	**92.28**	**95.22**	**98.34**	**101.63**	**105.11**	**108.79**	**112.68**	**116.79**	**121.14**	**125.73**	**130.59**	**135.73**	**141.16**	**146.90**	**152.97**	**159.39**	**166.17**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh		0.69	0.73	0.77	0.82	0.86	0.91	0.96	1.02	1.08	1.14	1.20	1.27	1.35	1.42	1.51	1.59	1.68	1.78	1.88	1.99	2.10	2.22	2.35	2.48	2.62	2.78	2.93	3.10	3.28	3.47	3.66	3.87	4.10	4.33	4.58
Depreciation	Rs/kWh		1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Int. on term loan	Rs/kWh		1.71	1.53	1.35	1.17	0.99	0.81	0.63	0.45	0.27	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh		0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27
RoE	Rs/kWh		1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Total COG	**Rs/kWh**		**4.96**	**4.82**	**4.68**	**4.54**	**4.41**	**4.28**	**4.15**	**4.02**	**3.90**	**3.78**	**2.84**	**2.91**	**2.99**	**3.07**	**3.15**	**3.24**	**3.34**	**3.44**	**3.55**	**3.66**	**3.78**	**3.91**	**4.04**	**4.18**	**4.33**	**4.49**	**4.66**	**4.83**	**5.02**	**5.22**	**5.43**	**5.65**	**5.88**	**6.13**	**6.39**

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
Levellised Tariff	**4.26**	**Rs/Unit**																																			

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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%	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%	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%
Accelrated Deprn.	Rs Lakh	199.55	239.46	47.89	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	0.00
Net Depreciation Benefit	Rs Lakh	186.38	213.12	21.55	-16.76	-24.43	-25.96	-26.26	-26.33	-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
Tax Benefit	Rs Lakh	63.38	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	-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	1.30	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	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

Levellised 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	MW	1
			Capacity Utilization Factor	%	30%
			Auxiliary Consumption		1%
			Deration Factor	%	0.00%
			Useful Life	Years	35
2	**Project Cost**				453.53
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	
3	**Financial Assumption**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	317.47
			Total Equity Amout	Rs Lacs	136.06
		Debt Component			
			Loan Amount	Rs Lacs	317.47
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Intrest Rate	%	13.39%
		Equity Component			
			Equity amount	Rs Lacs	136.06
			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**				
		Economic Assumptions			0
			Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	16.14%
					0%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			80 IA benefits	Yes/No	Yes
		Depreciation			0.0%
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	0.80%
			Years for 7% rate		10
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			
		Intrest On Working Capital		%	12.89%
6	**Operation & Maintenance**				
		O&M Expense			
		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	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63
Interest on term loan	Rs Lakh		40.38	36.13	31.88	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	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65	32.65
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**	**60.37**	**61.70**	**63.11**	**64.60**	**66.17**	**67.84**	**69.60**	**71.46**	**73.43**	**75.50**	**77.70**	**80.03**	**82.48**	**85.08**	**87.83**	**90.73**	**93.80**	**97.04**	**100.47**	**104.10**	**107.93**	**111.98**	**116.27**	**120.80**	**125.59**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generatio	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh		0.49	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	1.96	2.07	2.19	2.31	2.45	2.59	2.73	2.89	3.06	3.23
Depreciation	Rs/kWh		1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Int. on term loan	Rs/kWh		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	Rs/kWh		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	Rs/kWh		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
Total COG	**Rs/kWh**		**4.36**	**4.22**	**4.09**	**3.95**	**3.82**	**3.69**	**3.56**	**3.44**	**3.31**	**3.19**	**2.32**	**2.37**	**2.43**	**2.48**	**2.54**	**2.61**	**2.68**	**2.75**	**2.82**	**2.90**	**2.99**	**3.08**	**3.17**	**3.27**	**3.38**	**3.49**	**3.61**	**3.73**	**3.86**	**4.00**	**4.15**	**4.30**	**4.47**	**4.64**	**4.83**

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
Levellised Tariff	**3.65**	**Rs/Unit**																																			

Determination of Accelerated Depreciation

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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%	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	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	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%
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%
Accelrated Deprn.	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	193.75	19.59	-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	1.30	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	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

Levellised 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
			Auxillary Consumption during stablisatio	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		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 Stablization 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

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		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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3275	3275	
Biomass Required	Million Kg	3.049	3.557	6.61
Biomass Price	Rs/ MT			1343
Biomass Cost	Rs Lakh			88.7
Cost of Generation	**Rs/kWh**			**1.73**

Variable Tariff (FY 2010-11)	1.73
Levellised Tariff (Fixed)	1.80
Applicable Tariff (FY2010-11)	**3.53**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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 stablisation	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization 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)			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

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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3458	3458	
Biomass Required	Million Kg	2.888	3.369	6.26
Biomass Price	Rs/ MT			2238
Biomass Cost	Rs Lakh			140.0
Cost of Generation	**Rs/kWh**			**2.73**

Variable Tariff (FY 2010-11)	2.73
Levellised Tariff (Fixed)	1.89
Applicable Tariff (FY2010-11)	**4.62**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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 stablisation	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization Period	Kcal/kwh	3800
		Biomass			
			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**				
		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

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		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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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	0.21	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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3611	3611	
Biomass Required	Million Kg	2.766	3.226	5.99
Biomass Price	Rs/ MT			1859
Biomass Cost	Rs Lakh			111.4
Cost of Generation	**Rs/kWh**			**2.17**

Variable Tariff (FY 2010-11)	2.17
Levellised Tariff (Fixed)	1.84
Applicable Tariff (FY 2010-11)	**4.01**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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
			Auxillary Consumption during stablisatio	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization 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) : 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

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		12.17	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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**	**5.92**	**6.19**	**6.48**	**6.78**	**7.09**	**7.42**	**7.77**	**8.13**	**8.52**	**8.92**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3368	3368	
Biomass Required	Million Kg	2.965	3.459	6.42
Biomass Price	Rs/ MT			2159
Biomass Cost	Rs Lakh			138.7
Cost of Generation	**Rs/kWh**			**2.71**

Variable Tariff (FY 2010-11)	2.71
Levellised Tariff (Fixed)	1.88
Applicable Tariff (FY 2010-11)	**4.59**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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
			Auxillary Consumption during stablisatio	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization 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)			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

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		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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3612	3612	
Biomass Required	Million Kg	2.765	3.226	5.99
Biomass Price	Rs/ MT			1341
Biomass Cost	Rs Lakh			80.3
Cost of Generation	**Rs/kWh**			**1.57**

Variable Tariff (FY 2010-11)	1.57
Levellised Tariff (Fixed)	1.78
Applicable Tariff (FY2010-11)	**3.35**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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
			Auxillary Consumption during stablisatio	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization 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

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		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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3689	3689	
Biomass Required	Million Kg	2.707	3.158	5.87
Biomass Price	Rs/ MT			1881
Biomass Cost	Rs Lakh			110.3
Cost of Generation	**Rs/kWh**			**2.16**

Variable Tariff (FY 2010-11)	2.16
Levellised Tariff (Fixed)	1.83
Applicable Tariff (FY2010-11)	**3.99**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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 stablisatio	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization Period	Kcal/kwh	3800
		Biomass			
			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**				
		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

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		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
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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3371	3371	
Biomass Required	Million Kg	2.962	3.456	6.42
Biomass Price	Rs/ MT			1567
Biomass Cost	Rs Lakh			100.6
Cost of Generation	**Rs/kWh**			**1.96**

Variable Tariff (FY 2010-11)	1.96
Levellised Tariff (Fixed)	1.82
Applicable Tariff (FY2010-11)	**3.78**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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 stablisatio	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization 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
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

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		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	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**		**119.53**	**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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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		0.22	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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3300	3300	
Biomass Required	Million Kg	3.026	3.531	6.56
Biomass Price	Rs/ MT			1882
Biomass Cost	Rs Lakh			123.4
Cost of Generation	**Rs/kWh**			**2.40**

Variable Tariff (FY 2010-11)	2.40
Levellised Tariff (Fixed)	1.86
Applicable Tariff (FY2010-11)	**4.26**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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 stablisatio	%	10%
			Auxillary Consumption after stabilisation	%	10%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	70%
			PLF(second year onwards)	%	80%
			Useful Life	Years	20
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	402.54
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	281.78
			Total Equity Amout	Rs Lacs	120.76
		Debt Component			
			Loan Amount	Rs Lacs	281.78
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			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 Stablization Period	Kcal/kwh	3800
		Biomass			
			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**				
		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

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		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**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**

Levellised Tariff	Unit	Year -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 Component

Particulars	Unit	Stabilisation Period (First 6 Month)	Remain. 6 month	1
Installed Capacity	MW	1	1	1
Plant load factor	%	60%	70%	
Gross energy generation	MU	2.63	3.07	5.69
Auxiliary Consumption	%	10.0%	10.0%	
Auxiliary Consumption	MU	0.26	0.31	0.57
Net Energy generation	MU	2.37	2.76	5.12
Station Heat Rate	Kcal/kWh	3800	3800	
Energy Input required	Million Kcal	9986.4	11650.8	
Calorific Value	Kcal/kg	3467	3467	
Biomass Required	Million Kg	2.880	3.360	6.24
Biomass Price	Rs/ MT			1855
Biomass Cost	Rs Lakh			115.8
Cost of Generation	**Rs/kWh**			**2.26**

Variable Tariff (FY 2010-11)	2.26
Levellised Tariff (Fixed)	1.84
Applicable Tariff (FY2010-11)	**4.10**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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																					
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	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

Levellised benefit	**0.19**	**(Rs/kWh)**

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 Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			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		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		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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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	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		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	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**		**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**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	45%
Gross energy generation	MU	3.94
Auxiliary Consumption	%	8.5%
Auxiliary Consumption	MU	0.34
Net Energy generation	MU	3.61
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	14191.2
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	6.307
Biomass Price	Rs/ MT	927.889
Biomass Cost	Rs Lakh	58.5
Biomass cost allocation to Power	Rs Lakh	58.5
Biomass cost allocation to Steam	Rs Lakh	0.0
Cost of Generation	**Rs/kWh**	**1.62**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh		0.98	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**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	1.62
Levellised Tariff Fixed	2.61
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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	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
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**

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 Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization 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)			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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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	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		9.76	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	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**		**109.87**	**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**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	53%
Gross energy generation	MU	4.64
Auxiliary Consumption	%	9%
Auxiliary Consumption	MU	0.39
Net Energy generation	MU	4.25
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	16714.1
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	7.42848
Biomass Price	Rs/ MT	1456.3419
Biomass Cost	Rs Lakh	108.2
Biomass cost allocation to Power	Rs Lakh	108.2
Biomass cost allocation to Steam	Rs Lakh	0
Cost of Generation	**Rs/kWh**	**2.54**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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	0.25	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**	**5.91**	**6.17**	**6.44**	**6.72**	**7.02**	**7.33**	**7.66**	**8.00**	**8.37**	**8.75**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	2.54
Levellised Tariff Fixed	2.32
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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	2.12	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
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	**0.27**	**Rs/Unit**

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**				
		Capacity			
			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**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	278.65
			Total Equity Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		Bagasse			
			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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	60%
Gross energy generation	MU	5.26
Auxiliary Consumption	%	9%
Auxiliary Consumption	MU	0.45
Net Energy generation	MU	4.81
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	18921.6
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	8.4096
Biomass Price	Rs/ MT	1159.0871
Biomass Cost	Rs Lakh	97.5
Biomass cost allocation to Power	Rs Lakh	97.5
Biomass cost allocation to Steam	Rs Lakh	0
Cost of Generation	**Rs/kWh**	**2.02**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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	0.17	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**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	2.02
Levellised Tariff Fixed	2.03
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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**

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 Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization 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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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	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		6.72	6.88	7.06	7.25	7.45	7.67	7.91	8.16	8.43	8.71	8.76	9.16	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	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**		**106.83**	**104.07**	**101.37**	**98.73**	**96.16**	**93.66**	**91.23**	**88.87**	**86.60**	**84.42**	**69.99**	**71.81**	**73.72**	**75.75**	**77.88**	**80.14**	**82.52**	**85.04**	**87.69**	**90.50**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	53%
Gross energy generation	MU	4.64
Auxiliary Consumption	%	9%
Auxiliary Consumption	MU	0.39
Net Energy generation	MU	4.25
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	16714.1
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	7.42848
Biomass Price	Rs/ MT	834.9969
Biomass Cost	Rs Lakh	62.0
Biomass cost allocation to Power	Rs Lakh	62.0
Biomass cost allocation to Steam	Rs Lakh	0
Cost of Generation	**Rs/kWh**	**1.46**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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		0.16	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	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Total COG	**Rs/kWh**		**3.97**	**3.98**	**4.00**	**4.01**	**4.04**	**4.07**	**4.10**	**4.15**	**4.20**	**4.25**	**4.03**	**4.19**	**4.36**	**4.54**	**4.72**	**4.92**	**5.13**	**5.35**	**5.58**	**5.82**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	1.46
Levellised Tariff Fixed	2.22
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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	2.12	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
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	**0.27**	**Rs/Unit**

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 Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization 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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	53%
Gross energy generation	MU	4.64
Auxiliary Consumption	%	9%
Auxiliary Consumption	MU	0.39
Net Energy generation	MU	4.25
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	16714.1
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	7.42848
Biomass Price	Rs/ MT	1442.9241
Biomass Cost	Rs Lakh	107.2
Biomass cost allocation to Power	Rs Lakh	107.2
Biomass cost allocation to Steam	Rs Lakh	0
Cost of Generation	**Rs/kWh**	**2.53**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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**	**5.87**	**6.13**	**6.39**	**6.67**	**6.97**	**7.28**	**7.60**	**7.95**	**8.31**	**8.68**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	2.53
Levellised Tariff Fixed	2.31
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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	2.12	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
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	**0.27**	**Rs/Unit**

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**				
		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 Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		Bagasse			
			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**				
		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		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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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	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		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	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**		**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**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	45%
Gross energy generation	MU	3.94
Auxiliary Consumption	%	9%
Auxiliary Consumption	MU	0.34
Net Energy generation	MU	3.61
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	14191.2
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	6.3072
Biomass Price	Rs/ MT	1045.5523
Biomass Cost	Rs Lakh	65.9
Biomass cost allocation to Power	Rs Lakh	65.9
Biomass cost allocation to Steam	Rs Lakh	0
Cost of Generation	**Rs/kWh**	**1.83**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Int. on term loan	Rs/kWh		0.98	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**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	1.83
Levellised Tariff Fixed	2.62
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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	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
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**

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
			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**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	278.65
			Total Equity Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization 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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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	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		9.74	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	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**		**109.85**	**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**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	60%
Gross energy generation	MU	5.26
Auxiliary Consumption	%	9%
Auxiliary Consumption	MU	0.45
Net Energy generation	MU	4.81
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	18921.6
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	8.4096
Biomass Price	Rs/ MT	1282.9433
Biomass Cost	Rs Lakh	107.9
Biomass cost allocation to Power	Rs Lakh	107.9
Biomass cost allocation to Steam	Rs Lakh	0
Cost of Generation	**Rs/kWh**	**2.24**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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	0.17	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		0.20	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	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
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**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	2.24
Levellised Tariff Fixed	2.05
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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**

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**				
		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 Amout	Rs Lacs	119.42
		Debt Component			
			Loan Amount	Rs Lacs	278.65
			Moratorium Period	years	0
			Repayment Period(incld 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	15.82%
		Depreciation			
			Depreciation Rate(power plant)	%	7.00%
			Depreciation Rate 11th year onwards	%	2.00%
			Years for 7% depreciation rate		10.00
			Corporate Tax Rate	%	33.99%
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			
		Bagasse Stock		Months	4
		Interest On Working Capital		%	12.89%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
			During Stablization Period	Kcal/kwh	3600
		Bagasse			
			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**				
		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

Vaiable Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Biomass Cost	Rs Lakh		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	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		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	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**		**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**

Variable Cost

Particulars	Unit	1
Installed Capacity	MW	1
Plant load factor	%	53%
Gross energy generation	MU	4.64
Auxiliary Consumption	%	9%
Auxiliary Consumption	MU	0.39
Net Energy generation	MU	4.25
Station Heat Rate	Kcal/kWh	3600
Energy Input required	Million Kcal	16714.1
Calorific Value	Kcal/kg	2250
Biomass Required	Million Kg	7.42848
Biomass Price	Rs/ MT	1200.3725
Biomass Cost	Rs Lakh	89.2
Biomass cost allocation to Power	Rs Lakh	89.2
Biomass cost allocation to Steam	Rs Lakh	0
Cost of Generation	**Rs/kWh**	**2.10**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M expn	Rs/kWh		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		0.20	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	0.67	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**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Discount Factor			1	0.863	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 (Fy 2010-11)	2.10
Levellised Tariff Fixed	2.28
Applicable Tariff (FY 2010-11)	**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 (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%
Accelrated 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	2.12	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
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	**0.27**	**Rs/Unit**

Annexure – 5A

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
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	1183
			Total Equity Amout	Rs Lacs	507
		Debt Component			
			Loan Amount	Rs Lacs	1183.00
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component			
			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**				
		Economic Assumptions			
			Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			80 IA benefits	Yes/No	Yes
		Depreciation			
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	1.33%
			Years for 7% rate		10
5	**Working Capital**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	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 Capita	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**

Levellised COG

Per Unit Cost of Generat	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		0.57	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	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	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	0.25	0.26	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.29	0.30	0.30
RoE	Rs/kWh		5.79	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

Levellised 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 (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%
Accelrated Deprn.	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	-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**

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
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	1071
			Total Equity Amout	Rs Lacs	459
		Debt Component			
			Loan Amount	Rs Lacs	1071
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	10
			Interest Rate	%	13.39%
		Equity Component			
			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**				
		Economic Assumptions			
			Coal Price Escalation	% p.a	0%
			HSD Price Escalation	% p.a	0%
			Discount Rate	% p.a	15.82%
		Fiscal Assumptions			
			Income Tax	%	33.99%
			80 IA benefits	Yes/No	Yes
		Depreciation			
			Depreciation Rate for first 10 years	%	7.00%
			Depreciation Rate 11th year onwards	%	1.33%
			Years for 7% rate		10
5	**Working Capital**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	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	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40
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	110.16	110.16	110.16	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**

Levellised COG

Per Unit Cost of Generation	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh		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	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
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	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	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**

Levellised Tariff	15.31	Rs/Unit

Determination of Accelerated Depreciation Benefit for Solar Thermal Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	80%
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%
Accelrated 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

Attachment-1

Summary of Comments Received from Stakeholders

Usage of Fossil Fuel

1. In order to maintain healthiness of the solar thermal power system operations, a fossil fuel firing of 5% ~10% shall be allowed in solar thermal technologies. **(Enam Consulting)**

Minimum Alternate Tax Rate

2. MAT has been increased to 18%, CST to 7.5% and cess to 3% and therefore MAT should be considered as 19.93% for all the renewable energy tariff determination. **(Power and Energy Consultants)**

Capital Cost – Biomass Power Project

3. Benchmark Capital Cost has seen upward trend due to increase in the prices of Steel, Cement and Labour. The cost per MW shall be Rs540/MW (minimum) and may go up to Rs580/MW on account of civil works due to site conditions. The same should be considered while determining the tariff. **(Astonfield Renewable Resources Ltd.)**

Auxiliary Consumption and Line Losses

4. Lines losses as 3%~4% may be considered in the auxiliary power consumption. **(Surya Chakra Power Ltd.)**

Operation and Maintenance Expenses – Biomass Power Project

5. The O&M Expenses may be considered as around Rs35Lakh/MW. **(Astonfield Renewable Resources Ltd.)**

Calorific Value of Biomass

6. The calorific value of the paddy in Chattisgarh is around 3100kCal/kg against 3467kCal/kg specified for Chattisgarh under the *"Other State"* status. **(Surya Chakra Power Ltd.)**

Transmission Cost– Solar PV Power Project

7. For Solar PV projects of capacity less than 1 MW – the interconnection point shall be the outgoing line of the utility and the cost of connectivity shall be to the developer's account and for Solar PV projects of capacity 1MW and above – the interconnection point shall be the isolator of the developer's bus. **(Future Computing and Energy Solutions)**

Solar Insolation Levels and Capacity Utilisation Factor

8. In view of the varying insolation levels across the country, the capacity utilization factor of 19% p.a. is achievable at few places in the States like Rajasthan and Gujarat. The CERC shall ensure that the specified return on equity 16% p.a. (post tax) is available to the developers for project being developed anywhere in the country. **(Astonfield Renewable Resources Ltd.)**
9. A capacity utilization factor of 15% should be taken into account while determining the tariff. **(Reliance Industries Limited)**

Solar PV Panel Degradation

10. The Solar PV panels shall perform at approximately 80% of their original capacity at the end of 25 year period. Accordingly, 0.8% panel degradation per annum may be considered on average basis. **(Astonfield Renewable Resources Ltd.)**
11. The Commission shall consider panel degradation factor taking into account international norms. **(Power and Energy Consultants)**
12. The useful life of the plant shall be considered taking into consideration the degradation of the panels. A factor of 14%~15% for panel degradation throughout the life of the projects may be considered. **(TATA BP Solar)**

Insurance – Solar PV Power Project

13. The Commission may allow an insurance expense as 0.5% of the installed capital cost as insurance expense every year. **(Astonfield Renewable Resources Ltd.)**

14. An insurance charge as 0.25% of the capital cost may be considered. **(Power and Energy Consultants)**

Operation and Maintenance Expenses – Solar PV Power Project

15. The O&M Expenses shall be Rs75Lakh/year for 5MW project size. For sizes below 5MW a reduction may be fixed by the Commission. **(Astonfield Renewable Resources Ltd.)**

Cost of Maintenance and Spares – Solar PV Power Project

16. Maintenance Spares @ 15% of O&M Expenses should become part of Form 1.2 form template. **(Future Computing and Energy Solutions)**

Tariff – Solar PV Power Project

17. The tariff shall apply for entire control period and shall be subjected to inflation consideration. **(TATA BP Solar)**

Tariff – Solar Thermal Power Project

18. The tariff of Solar Thermal Power Plants may be determined as Rs16.50/kWh. **(Abengoa Solar)**

Attachment-2

List of Stakeholders submitted Written Comment/Suggestions and/or made Oral Submission at Public Hearing

S No	Name of Stakeholder
1	Abengoa Solar
2	Astonfield Renewable Resources Ltd
3	Enam Consulting
6	Future Computing and Energy Solution
4	Power and Energy Consultant
7	Reliance Industries Limited
5	Surya Chakra Power Ltd
8	TATA BP Solar