Before the
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CASE No. 33 of 2017

In the matter of
Determination of Generic Tariff for Renewable Energy for FY 2017-18

Coram

Shri. Azeez M. Khan, Member
Shri. Deepak Lad, Member

DRAFT ORDER

Dated: 23 February, 2017

In exercise of its powers under Sections 61, 66 and 86 read with Section 181 of the Electricity Act (EA), 2003 and other powers enabling it in this behalf, the Maharashtra Electricity Regulatory Commission (MERC) has notified the MERC (Terms and Conditions for Determination of Renewable Energy (RE) Tariff) Regulations, 2015, ('RE Tariff Regulations') on 10 November, 2015. The Regulations specify the terms and conditions and the procedure for determination of Generic Tariff in respect of the following RE Generation Projects:

(a) Wind Power Projects;
(b) Biomass-based Power Projects;
(c) Non-Fossil Fuel-based Co-Generation Projects;
(d) Mini/Micro and other Small Hydro Power Projects;
(e) Solar Photo Voltaic (PV)/Solar Thermal Power Projects;
(f) Solar Roof-top PV Systems Power Projects.

2. Regulation 9.1 of the RE Tariff Regulations requires the Commission to determine suo-moto the Generic Tariffs for the RE technologies for which norms have been specified in the Regulations:

> *"9.1 The Commission shall notify the generic tariff at the beginning of each year of the Review Period considering the norms specified by the Central Commission from time to time with regard to the respective RE technologies:*
>
> *Provided that, for the first year (FY 2015-16) of the Review Period, the generic tariff may be determined by the Commission within three months from the date of notification of these Regulations."*

3. Subsequent to the notification of RE Tariff Regulations on 10 November, 2015, the Commission, vide its Order dated 25 January, 2016 in Case No 135 of 2015, had determined the Generic Tariff for RE Technologies for FY 2015-16 from the date of publication of the Regulations as per Regulation 1.2, i.e., from 10 November, 2015 to 31 March, 2016.

4. Further, the Commission determined the Generic Tariff of RE Projects for the Tariff Review Period of FY 2016-17 vide its Order dated 29 April, 2016 in Case No 45 of 2016, applicable for the Projects commissioned in that year.

5. In discharge of its mandate under Regulation 9.1 and through this draft Order, the Commission proposes to determine the Generic Tariff for RE Technologies for FY 2017-18 and applicable for the RE Projects to be commissioned during that year, and has invited public comments, objections and suggestions.

1. COMMON PARAMETERS FOR DETERMINATION OF GENERIC TARIFF

This Section details the applicable norms for determination of Generic levelised Tariff which are common to all types of RE technologies as specified in the RE Tariff Regulations.

1.1. REVIEW PERIOD

Regulation 6.1 of the RE Tariff Regulations specifies that the Review Period for determination of Tariff for RE Projects shall be five years, starting from the date of notification of the Regulations. The first year of the Review Period was FY 2015-16, and the Regulations were notified on 10 November, 2015. FY 2017-18 is the the third year of this Review Period.

1.2. TARIFF STRUCTURE

Regulation 10 specifies that the Tariff for RE Projects shall be a 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 RE technologies with a fuel cost component, like Biomass-based Projects and Non-Fossil Fuel-based Co-Generation Projects, a single-part Tariff with two components, viz., fixed cost and fuel cost, has been determined in this Order. The relevant cost components and basis for determination of Generic Tariff in respect of each RE technology have been elaborated in the technology-specific Sections of this Order.

1.3. TARIFF DESIGN

As per Regulation 11, the Tariff Design for RE Generating Stations is as under**:**

"11.1 The tariff shall be determined on a levelised basis for the Tariff Period:

Provided that, for RE Projects having a single-part tariff with two components, the tariff shall be determined on a levelised basis considering the year of commissioning of the Project for the fixed cost component, while the fuel cost component shall be specified on the basis of the year of operation.

11.2 For the purpose of computation of levelised tariff, a discount factor equivalent to the normative post-tax weighted average cost of capital shall be considered.

11.3 Levelisation shall be carried out for the 'useful life' of the RE Project, while tariff shall be determined for the period equivalent to the Tariff Period."

1.4. INTEREST ON LOAN

Regulation 15.1 specifies a loan tenure of 12 years for determination of Generic Tariff for RE Projects. Regulation 15.2 provides for consideration of the rate of interest on loan as follows:

"For the purpose of computation of tariff, the Base Rate of the State Bank of India prevailing during the previous year plus 300 basis points shall be considered as the normative interest rate.

Notwithstanding any moratorium period availed, 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."

The Base Rates notified by State Bank of India (SBI) from 1 April, 2016 to 31 January 2017 were as follows:

Period		Base Rate (%)	Period (No. of days)
01 April 2016	31 December 2016	9.30	275
01 January 2017	31 January 2017	9.25	31
Weighted Average Base Rate		9.29	

The weighted average of the SBI Base Rate for the period from 1 April, 2016 to 31 January, 2017 as shown in the above Table, plus 300 basis points, works out to an interest rate of 12.29% p.a. (9.29% + 300 basis points).

However, as per the Reserve Bank of India (RBI) guidelines dated 3 March, 2016 (updated on 29 March, 2016),

"All rupee loans sanctioned and credit limits renewed w.e.f. April 1, 2016 shall be priced with reference to the Marginal Cost of Funds based Lending Rate (MCLR) which will be the internal benchmark for such purposes."

SBI will continue to declare its Base Rate for existing loans, but new loans will be sanctioned on the basis of MCLR.

The MCLR has been effective from 1 May, 2016. The monthly MCLR declared by SBI is shown in the Table below:

MCLR declared by SBI on monthly basis

Date of Revision	Overnight MCLR	1 month MCLR	3 month MCLR	6 month MCLR	1 year MCLR	2 year MCLR	3 year MCLR
01-May-16	8.90%	9.00%	9.05%	9.10%	9.15%	9.25%	9.30%
01-Jun-16	8.90%	9.00%	9.05%	9.10%	9.15%	9.25%	9.30%
01-Jul-16	8.90%	9.00%	9.05%	9 .10%	9.15%	9.25%	9.30%
01-Aug-16	8.85%	8.95%	9.00%	9.05%	9.10%	9.20%	9.25%
01-Sep-16	8.85%	8.95%	9.00%	9.05%	9.10%	9.20%	9.25%
01-Oct-16	8.65%	8.75%	8.80%	8.85%	8.90%	9.00%	9.05%
01-Nov-16	8.65%	8.75%	8.80%	8.85%	8.90%	9.00%	9.05%
01-Dec-16	8.65%	8.75%	8.80%	8.85%	8.90%	9.00%	9.05%
01-Jan-17	7.75%	7.85%	7.90%	7.95%	8.00%	8.10%	8.15%
01-Feb-17	7.75%	7.85%	7.90%	7.95%	8.00%	8.10%	8.15%
Average	**8.59%**	**8.69%**	**8.74%**	**8.79%**	**8.84%**	**8.94%**	**8.99%**

The RE Tariff Regulations specify a loan period of 12 years, whereas MCLR has been published for different tenures ranging from overnight to 3 years.

Thus, with the new interest rate regime linked to MCLR, applying the RE Tariff Regulations, 2015 for determining the normative interest rate linked to the SBI Base Rate for new RE Projects to be commissioned during FY 2017-18, would not be appropriate. With the new MCLR regime, which has different tenures, there is a need to revisit the benchmark interest rate along with its spread.

Hence, the Commission has considered the interest rates of the Indian Renewable Energy Development Agency Ltd. (IREDA), Power Finance Corporation Ltd. (PFC) and Rural Electrification Corporation (REC) for RE Projects. IREDA's interest rates for different RE technologies and borrower credit profiles range from 10.20% p.a. to 11.90% p.a., while the rates of PFC and REC vary from 9.75% p.a. to 12.00% p.a. The interest considered for Tariff purposes ought to reflect the market conditions. The average rate of interest on the loans offered by the leading lending institutions specifically for RE technologies works out to around 11.00% p.a. This amounts to a spread of around 2% p.a. above the Average MCLR (3 year) of 8.99% p.a.

Under Regulation 82, the Commission can make minor adaptations and peripheral adjustments in the Regulations for effecting their implementation without altering their substance so to remove any difficulty:

"82. Power to remove difficulties

If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by general or specific order, make such provisions not inconsistent with the provisions of the Act, as may appear to be necessary for removing the difficulty."

For the reasons cited above with regard to applying the SBI Base Rate, the Commission considers it necessary to invoke its powers under the Regulations to remove difficulties.

1.5. INTEREST ON WORKING CAPITAL

Regulation 18.3 provides for computation of the rate of Interest on Working Capital (IoWC) as under:

"Interest on Working Capital shall be the average of the Base Rate of State Bank of India prevalent during the previous year, plus 350 basis points."

As mentioned earlier, the SBI Base Rate-linked interest rate for working capital is no longer available for new RE Projects. The Commission also notes that the interest rates for short-term RE loans from REC and PFC ranges from 10.75% p.a. to 11.50% p.a. (REC) and 10.75% to 12.50% p.a. (PFC).

In view of the above, the Commission invokes its powers under Regulation 82 to remove difficulties and to apply, for the purposes of this Order, a normative interest rate of 11.00% on long-term loans and IoWC for FY 2017-18) considering the market conditions.

1.6. LEVELISED TARIFF

The Levelised Tariff is computed by undertaking levelisation over the Useful Life of each technology considering a discount factor equivalent to the normative post-tax weighted average cost of capital, to represent the time value of money.

Discount Factor

The discount factor considered for this purpose is 9.84 %, which is equal to the normative post-tax weighted average cost of capital on the basis of normative debt-equity ratio of 70:30 specified in the Regulations, and the weighted average rates for the debt and equity components.

The Interest Rate considered for the loan component (i.e., 70%) of Capital cost is 11.00%. For the equity component (i.e., 30%), the rate of Return on Equity (RoE) shall be computed at the base rate of 16%, grossed up as per the applicable tax rate. The rate of RoE is to be computed by grossing up the base rate with the tax rate equivalent to Minimum Alternate Tax (MAT) for the first 10 years from the Commercial Operation Date (COD), and the normal tax rate for the remaining years of Project life. Based on these rates and the debt-equity ratio, the weighted average RoE ranges from 21% to 23.30% depending on the Useful Life of different RE technologies. The discount factor for each technology derived by this method is detailed in the respective technology-specific Sections of this Order.

It may be noted that the Discount Factor is computed as 9.84% = ((11.00% x 0.70 x (1-34.61%)) + (16.00% x 0.30)).

1.7. GRANT, SUBSIDY OR INCENTIVE FROM CENTRAL/STATE GOVERNMENTS

Regulation 24 of the RE Tariff Regulations specifies that:

> *"The Commission shall take into consideration any grant, subsidy or incentive offered by the Central or State Government or their agencies, including accelerated/additional depreciation benefit, if availed, while determining the tariff under these Regulations:*
>
> *Provided that the State Nodal Agency shall inform the Distribution Licensee regarding any such grant, subsidy or incentives received by a Project Entity on a quarterly basis;*
>
> *Provided further that any such grant, subsidy or incentives availed by a Project Entity shall be deducted by the Distribution Licensee in subsequent bills raised by the particular Project Entity towards sale of electricity in suitable instalments or within such period as may be stipulated by the Commission;*
>
> *Provided also that the following principles shall be considered for ascertaining the Income Tax benefit on account of accelerated or additional depreciation, if availed, for the purpose of tariff determination:*
>
> *a. The assessment of benefit shall be based on normative Capital cost, accelerated/additional depreciation rate as per the relevant provisions of the Income Tax Act and the Corporate Income Tax rate;*
>
> *b. Capitalisation of RE Projects for the full financial year;*
>
> *c. Per-unit benefit shall be derived on levelised basis at a discounting factor equivalent to the post-tax weighted average cost of capital;*
>
> *Provided also that, in case the Central or State Government or their agencies provide any generation-based incentive which is specifically over and above the tariff, such incentive shall not be taken into account while determining the tariff."*

Accordingly, for Projects availing the benefit of accelerated depreciation, the applicable Corporate Income Tax rate of 34.61% (30% Income Tax rate + 12% surcharge + 3% Education Cess) has been considered. As per the Circular dated 7 November, 2016 of the Income Tax Department, the accelerated depreciation rates have been revised to 40% for FY 2017-18.

For determining the net depreciation benefits, depreciation @ 5.28% as per the Straight Line Method (book depreciation as per Companies Act, 2013) has been compared with depreciation as per the Income Tax Act, i.e., 40% under the Written Down Value method. Moreover, additional 20% depreciation in the initial year is proposed to be extended to new assets acquired by Generation Companies vide amendment to Section 32 (1) (ii a) of the Income Tax Act.

Depreciation for the first year has been computed at the rate of 100% of 40%, and 100% of the AD of 20%, assuming the Project to be capitalized for the full financial year as per the

second proviso to Regulation 24. The tax benefit has been worked out as per the Corporate Income Tax rate on the net depreciation benefit. The 'per unit levelised accelerated depreciation benefit' has been computed considering the weighted average cost of capital as discounting factor, as detailed in para 1.6 of this Order. The detailed computation of benefit of accelerated depreciation in respect of each RE technology has been covered under the technology-specific Sections.

Further, as per the second proviso to Regulation 24, in case the Central or State Government or their agencies provide any generation-based incentive which is specifically over and above the Tariff, such incentive shall not be taken into account while determining the Tariff. Thus, while determining the Tariffs for RE Projects in this Order, no such incentives have been considered.

1.8. SHARING OF CDM BENFITS

As per Regulation 22, all risks, costs and efforts associated with the availing of carbon credits shall be borne by the Project Entity. Further, the entire proceeds of carbon credit from an approved Clean Development Mechanism (CDM) Project, if any, shall be retained by it.

1.9. APPLICABILITY OF TARIFF ORDER

This Tariff Order shall be applicable to New RE Projects commissioned in FY 2017-18, i.e. from 1 April, 2017 to 31 March, 2018.

In case of Biomass-based Power Projects and Non-Fossil Fuel-based Co-generation Projects commissioned on or before 31 March, 2017, the Variable Charge component of the Tariff shall be determined as set out in the relevant provisions of this Order. The Fixed Charge component of the Tariff of such Projects shall continue to be governed by the relevant Orders of the Commission.

The applicable Tariff Rate, Tariff Structure and other terms and conditions for other RE Projects commissioned on or before 31 March, 2017 will be in accordance with the provisions of the relevant Generic RE Tariff Orders.

The following Sections of this Order outline the technology-wise norms and corresponding Generic Tariffs for New RE Projects to be commissioned in FY 2017-18 based on various RE technologies.

2. WIND ENERGY PROJECTS

2.1. USEFUL LIFE

Regulation 2.1 (mm) of the RE Tariff Regulations defines 'Useful Life' in relation to a Unit of a Generating Station (including evacuation system) to mean the duration from the COD till such time as specified under the Regulations. The Useful Life of Wind Energy Projects under Regulation 2.1 (mm) is 25 years from COD.

2.2. TARIFF PERIOD

Regulation 7 specifies the Tariff Period for various RE Projects. The Tariff Period for Wind Energy Projects is 13 years, considered from the COD of the Project, and the Tariff determined under the Regulations shall be applicable only for the duration of the Tariff Period.

2.3. CAPACITY UTILISATION FACTOR

Under Regulation 28 of the RE Tariff Regulations, the norms for Capacity Utilization Factor (CUF) specified for Wind Energy Projects are as under:

Wind Zone	*Annual Mean Wind Power Density (W/m^2)*	*CUF*
Zone 1	*<=250*	*22%*
Zone 2	*>250 - <=300*	*25%*
Zone 3	*>300 - <=400*	*30%*
Zone 4	*>400*	*32%*

Provided that these CUF norms may be revised by the Commission through general or specific Order considering data that may become available subsequently."

In accordance with Regulation 28.2, the annual mean wind power density is to be measured at 80 metre hub-height.

2.4. CAPITAL COST

The Capital Cost of Wind Energy Projects shall include the cost of Wind Turbine Generator (WTG), including its auxiliaries, land cost, site development charges and other civil works, transportation charges, evacuation cost up to the inter-connection point, financing charges and Interest during Construction (IDC), and capital investment relating to forecasting and scheduling. Accordingly, as specified in Regulation 26.2, the Capital Cost of Wind Energy Projects of Rs. 600.74 lakh/MW is the base capital cost for the first year of the Review Period. That base capital cost has been revised applying the indexation specified in the Central Electricity Regulatory Commission (CERC) RE Tariff Regulations, as stipulated in Regulation 27 of this Commission's Regulations. The computation is shown below.

Indexation Formula

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

$dn = (a*(SIn-1/SI_0)-1) + b*(EIn-1/EI_0)-1))/(a+b)$

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

Where: a=Weightage for Steel Index and b= Weightage for Electrical Machinery Index

Capital Cost Indexation for FY 2017-18

	Variables				
Technology	**a**	**b**	**F1**	**F2**	**F3**
Wind	0.6	0.4	0.08	0.07	0.1
Small Hydro	0.6	0.4	0.16	0.1	0.14
Biomass	0.7	0.3	0.1	0.09	0.14
Co-Generation	0.7	0.3	0.1	0.09	0.14

Wholesale Price Index (WPI)

	WPI of Electrical Machinery		WPI of Iron and Steel	
	2016	**2014**	**2016**	**2014**
January	138.30	137.40	153.50	155.10
February	138.00	137.80	153.60	155.40
March	138.00	138.40	153.60	155.90
April	139.40	138.40	154.60	154.60
May	139.20	138.60	154.30	155.20
June	138.90	138.60	153.90	156.10
July	138.80	138.80	153.80	156.10
August	138.70	138.40	155.10	155.70
September	138.60	138.60	155.40	159.10
October	138.70	138.70	154.10	161.10
November	138.80	138.70	154.00	160.70
December	138.90	138.60	154.10	160.60
Average	**138.69**	**138.42**	**154.17**	**157.13**

Variable	**Year**	**Value**
SI_0	2014	157.13
SI_{n-1}	2016	154.17
EI_0	2014	138.42
EI_{n-1}	2016	138.69
dn		**-1.05%**

Parameter	**Description**	**Cost**
1+F1+F2+F3		1.25
CC_0 (Rs. lakh/MW)	Capital Cost for the Base Year	600.74
$P\&M_0$(Rs. lakh/MW)	Plant & Machinery Cost for the Base Year Capital Cost Escalation Factor	480.59
$P\&M_n$(Rs. lakh/MW)	Plant & Machinery Cost for the nth Year (FY 2017-18)	475.53
CC_n(Rs. lakh/MW)	**Capital Cost for the nth Year (FY2017-18)**	**594.41**

2.5. DEBT-EQUITY RATIO

Regulation 14.1 of the RE Tariff Regulations, 2015 provides for a debt-equity ratio of 70:30 for determination of Generic Tariff. In accordance with this normative debt-equity ratio and the above Capital Cost, the debt and equity components for Wind Energy Projects work out to Rs. 416.09 lakh per MW and Rs. 178.32 lakh per MW, respectively**.**

2.6. RETURN ON EQUITY

Regulation 17.2 and 17.3 stipulates the normative RoE as under:

> *"The Return on Equity shall be computed at the base rate of 16%, to be grossed up as per the applicable tax rate.*
>
> *The rate of Return on Equity shall be computed by grossing up the base rate with the tax rate equivalent to Minimum Alternate Tax (MAT) during the year for the first 10 years from COD, and the weighted average of normal tax rate during the year for the remaining years of Project life."*

Accordingly, the RoE for the applicable period of this Order works out as follows:

Opening Equity (Rs lakh / MW)	178.32
Return on Equity for first 10 years @16% grossing up with MAT rate of 21.34% (Rs lakh per MW)	36.27
Return on Equity after first 10 years @16% grossing up with Income Tax rate of 34.61% (Rs lakh per MW)	43.63

Grossing up of the RoE is done as per the Formula: RoE(%) / [1- Tax Rate(%)]

2.7. INTEREST ON LOAN

As explained in para. **Error! Reference source not found.** of this Order, the interest rate of - 11.00% has been considered for Wind Energy Projects for a loan amount of Rs. 416.09 lakh per MW.

2.8. DEPRECIATION

Regulation 16 specifies that depreciation is to be allowed up to a maximum of 90% of the Capital Cost of the asset. The depreciation rate for the first 12 years of the Tariff Period shall be 5.83% per annum, and the remaining depreciation shall be spread over the remaining Useful Life of the Project from the 13th year onwards.

Accordingly, for Wind Energy Projects, the depreciation rate is 5.83% for the first 12 years, and works out to 1.54% thereafter for the remaining Useful Life of 13 years.

2.9. INTEREST ON WORKING CAPITAL

Regulation 18.1 of the RE Tariff Regulations, 2015 provides for computation of the Working Capital requirements of Wind Energy Projects as under:

"(a) Operation & Maintenance expenses for one month;

(b) Receivables equivalent to Two months of tariff for sale of electricity calculated on the normative CUF;

(c) Maintenance spares @ 15% of O & M expenses."

As explained earlier at para. 1.4 and 1.5, IoWC is considered as 11.00 % for computation of Tariff of Wind Energy Projects for the period from 1 April, 2017 to 31 March, 2018.

2.10. OPERATION AND MAINTENANCE EXPENSES

Regulation 29 of the RE Tariff Regulations specifies the normative O&M Expenses for Wind Energy Projects for FY 2015-16 (Base Year) as 1.47 % of the Capital Cost, which works out to Rs. 8.83 lakh/MW. This is escalated at the rate of 2.96% for the subsequent FY 2016-17 and further at the rate of 2.97% (as per the rate applied in the Multi-Year Tariff (MYT) Orders for the 3rd Control Period) in the present Order for FY 2017-18. Accordingly, the Commission has considered the O&M Expense norm for Wind Energy Projects as Rs 9.36 lakh per MW for FY 2017-18.

2.11. LEVELISED TARIFF FOR NEW WIND ENERGY PROJECTS FROM 1 APRIL, 2017 TO 31 MARCH, 2018

Accordingly, the Generic Tariffs for Wind Energy Projects in the period from 1 April, 2017 to 31 March, 2018 have been determined as follows. The discount factor for levelisation of Tariff for Wind Energy Projects works out to 9.84%, as computed in para 1.6 of this Order.

Tariff for New Wind Energy Projects for FY 2017-18

Wind Energy	Tariff Period	Levelised Tariff from 1 April, 2017 to 31 March, 2018 Rs/kWh	Benefits of Tax and Additional Depreciation (if availed) Rs/kWh	Net Levelised Tariff, adjusting for Tax and Additional Depreciation Benefit) (if availed) Rs/kWh
Wind Zone-1	13	5.26	0.48	4.78
Wind Zone-2	13	4.63	0.42	4.21
Wind Zone-3	13	3.85	0.35	3.51
Wind Zone-4	13	3.61	0.33	3.29

Notes:

- The above Tariff shall be valid for Projects commissioned in FY 2017-18.
- The above Tariff shall be valid for a Tariff Period of 13 years from the COD.
- Detailed computations of Tariffs for Wind Zones 1, 2, 3 and 4 are provided in Annexures 1A, 1B, 1C and 1D of this Order, respectively.

3. SMALL (INCLUDING MINI/MICRO) HYDRO POWER PROJECTS

3.1. USEFUL LIFE

The Useful Life specified for Small Hydro Power Projects (SHPs) and Mini/Micro Hydro Projects under Regulation 2.1 (mm) of the RE Tariff Regulations is 35 years from COD.

3.2. TARIFF PERIOD

Regulation 7.2 specifies a Tariff Period of 13 years for SHPs of capacity higher than 5 MW and upto and including 25MW.

Regulation 7.3 specifies a Tariff Period of 35 years for Mini/Micro Hydro Projects and SHPs upto and including 5 MW. The Tariff Period matches the Useful Life in case of these Projects, reflecting a longer preferential treatment for them.

3.3. CAPITAL COST OF SMALL HYDRO PROJECTS

For the purpose of the RE Tariff Regulations, SHPs are those Projects located at sites approved by the State Government/ State Nodal Agency using new plant and machinery and with installed power plant capacity lower than or equal to 25 MW. For Capital Cost, SHPs have been classified into two categories based on their installed capacities, viz., a) SHPs above 1 MW and upto and including 5 MW, and b) SHPs above 5 MW and lower than or equal to 25 MW.

Under Regulation 30.1, the Commission has considered the normative Capital Cost for SHPs for the first year of the Review Period (Base Year) as below:

Project Size	Capital Cost (Rs. lakh/MW)
> 1 MW and upto and including 5 MW	605.28
> 5 MW and upto and including 25 MW	550.70

The above Capital Cost has been escalated by applying the indexation mechanism specified in the CERC RE Tariff Regulations, as stipulated in Regulation 31 of the Commission's RE Tariff Regulations. The computation steps are shown in para. 3.4 of this Order. The normative Capital Cost for FY 2017-18 computed as per the mechanism specified in the CERC RE Tariff Regulations is shown in the Table below.

Parameter	Particulars	SHP of > 1 MW and upto and including 5 MW	SHP of > 5 MW and upto and including 25 MW
1+F1+F2+F3		1.40	1.40
CC_0 (Rs. lakh/MW)	Capital Cost for the Base Year	605.28	550.70
$P\&M_0$(Rs. lakh/MW)	Plant & Machinery Cost for the Base Year Capital Cost	432.34	393.36
$P\&M_n$(Rs. lakh/MW)	Plant & Machinery Cost for the nth Year (FY 2017-18)	427.79	389.21
CC_n(Rs. lakh/MW)	**Capital Cost for the nth Year (FY 2017-18)**	**598.90**	**544.90**

3.4. DEBT-EQUITY RATIO

In accordance with Regulation 14.1, the debt and equity components for SHPs with capacities above 1 MW and up to and including 5 MW work out to Rs. 419.23 lakh per MW and Rs. 179.67 lakh per MW (i.e., 70% and 30% of the Capital Cost), respectively. For Projects of capacities above 5 MW and lower than or equal to 25 MW, the debt and equity components work out to Rs. 381.43 lakh per MW and Rs. 163.47 lakh per MW, respectively.

3.5. RETURN ON EQUITY

In accordance with Regulation 17.2, the RoE works out as shown in the Table below:

Particulars	> 1 MW and up to and including 5 MW	> 5 MW and up to and including 25 MW
Opening Equity (in Rs lakh per MW)	179.67	163.47
Return on Equity for the first 10 years @16% grossing up with MAT rate of 21.34% (Rs lakh per MW)	36.55	33.25
Return on Equity after first 10 years @16% grossing up with Income Tax rate of 34.61% (Rs lakh per MW)	43.96	40.00

Grossing up of the RoE is done as per the Formula: RoE (%) / [1- Tax Rate(%)]

3.6. INTEREST ON LOAN

As explained at para. 1.4 above, the interest rate of 11.00% has been taken for SHPs with capacities above 1 MW and up to and including 5 MW, with a gross opening loan amount of

Rs. 419.23 lakh per MW; and for SHPs above 5 MW and lower than or equal to 25 MW, with a gross opening loan amount of Rs. 381.43 lakh per MW in the applicable period of this Order.

3.7. DEPRECIATION

In accordance with Regulation 16.2, the depreciation will be charged at 5.83% for the first 12 years and at 0.87% thereafter for the remaining Useful Life of 23 years for SHPs.

3.8. INTEREST ON WORKING CAPITAL

Regulation 18.1 of the RE Tariff Regulations provides for computation of the working capital requirements of SHPs as follows:

"(a) O & M expenses for one month;

(b) Receivables equivalent to two months of tariff for sale of electricity calculated on the normative CUF;

(c) Maintenance spares @ 15% of O & M expenses."

As explained earlier at para. 1.4 and 1.5, the IoWC is taken as 11.00 % for computation of the Tariff for SHPs for FY 2017-18.

3.9. OPERATION AND MAINTENANCE EXPENSES

Regulation 34.1 provides for the normative Operation and Maintenance (O&M) Expenses for SHPs for FY 2015-16 (Base Year), in accordance with which the following normative O&M expenses have been considered for the Base Year:

Project Size	**O&M Expense Norm**	**O&M Expenses (Rs. lakh/MW)**
> 1 MW and upto and including 5 MW	3.60% of the Capital Cost	21.79
> 5 MW and upto and including 25 MW	2.80% of the Capital Cost.	15.42

These O&M Expenses are escalated by 2.96% for FY 2016-17 and further escalated at the rate of 2.97% (the rate applied in the latest MYT Orders) for FY 2017-18. Accordingly, the Commission has applied the O&M expense norm for SHPs for FY 2017-18 as shown in the Table below:

Project Size	**O&M Expenses (Rs. lakh/MW) for FY 2017-18**
> 1 MW and upto and including 5 MW	23.10
> 5 MW and upto and including 25 MW	16.35

3.10. CAPACITY UTILISATION FACTOR

In accordance with Regulation 32, a CUF of 30% has been taken for determination of Tariff for SHPs.

3.11. AUXILIARY POWER CONSUMPTION

In accordance with Regulation 33, a Normative Auxiliary Consumption of 1.0% has been considered for determination of Tariff.

3.12. INCENTIVE FOR MINI/MICRO HYDRO PROJECTS

The RE Tariff Regulations provide for a higher Tariff for Mini/Micro Hydro Projects than for other SHP Projects, as below:

> *"35.1 The tariff for Mini Hydro Power Projects of capacity of 1 MW and less but more than 500 kW, shall be higher by Rs 0.50 per kWh than that applicable to Small Hydro Power Projects with installed capacity of 5 MW or less, but more than 1 MW.*
>
> *35.2 The tariff for Micro Hydro Power Projects of a capacity of 500 kW and below shall be higher by Rs. 1.00 per kWh than that tariff applicable to Small Hydro Power Projects with installed capacity of 5 MW or less but more than 1 MW."*

Accordingly, the Commission has determined a higher Tariff for Mini/Micro Hydro Projects than for other SHPs.

3.13. LEVELISED TARIFF FOR NEW SMALL HYDRO PROJECTS FOR FY 2017-18

Considering the above parameters and the discount factor of 9.84 % (as computed at para. 1.6 of this Order) for levelisation of Tariff for SHPs, the Generic Tariffs for SHPs during the applicable period of this Order have been determined as under:

Tariff for New RE Projects – Mini/Micro Hydro Projects and other SHPs

Type of SHP	Tariff Period (Years)	Levelised Tariff from 1 April, 2017 to 31 March, 2018	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for accelerated depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Mini and Micro Hydro Projects				
500 kW and below	35	5.54	0.33	5.21
Above 500 kW and up to and including 1 MW	35	5.04	0.33	4.71
Other SHPs				

Type of SHP	Tariff Period (Years)	Levelised Tariff from 1 April, 2017 to 31 March, 2018	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for accelerated depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Above 1 MW and up to and including 5 MW	35	4.54	0.33	4.21
Above 5 MW and upto and including 25 MW	13	3.88	0.30	3.58

Notes:

- The above Tariffs shall apply to Projects commissioned during FY 2017-18
- The above Tariffs shall be valid for a Tariff Period of 35 years from COD for SHPs less than and including 5 MW, and for 13 years for SHPs with installed capacity greater than 5 MW and up to and including 25 MW
- Detailed computations of Tariffs for SHPs of 1 MW to 5 MW, and for SHPs of 5 MW to 25 MW are provided in Annexures 2A and 2B of this Order, respectively.

4. BIOMASS-BASED POWER PROJECTS

4.1. KEY PROVISIONS OF RE TARIFF REGULATIONS

Chapter 5 of the RE Tariff Regulations specifies the technology-specific norms for determination of Tariff for Biomass-based Power Projects based on Rankine Cycle technology applications using water-cooled condensers, as below:

> *"37.1 The Capital cost and performance norms as specified in this Chapter shall be applicable only to new Biomass-based Power Projects commissioned after notification of these Regulations.*
>
> *37.2 The fuel-related aspects specified in Regulations 44 to 50 shall be applicable to both existing and new Biomass-based Power Projects;*
>
> *Provided that the norms in respect of SHR and Auxiliary Consumption factor for existing Biomass-based Power Projects shall be as stipulated in the respective RE Tariff Orders referred to in Regulation 3.2.*"

Accordingly, Regulation 49 specifies the Biomass fuel price as Rs. 3987 /MT during the first year of the Review Period, i.e., FY 2015-16, which is thereafter linked to the indexation mechanism specified in Regulation 50. Regulation 50.1 reads as follows:

> *"50.1 In the case of both existing and new Biomass-based Power Projects, the following indexing mechanism for adjustment of fuel prices for each year of*

operation will be applicable for determination of the variable charge component of tariff:

The Variable Charge for the nth year shall be computed as under:

$VC_n = VC_1 x (P_n / P_1)$

where,

VC_1 represents the Variable Charge based on Biomass Price P1 for FY 2015-16 as specified under Regulation 49, and shall be determined as under:

$$VC1 = \frac{Station\ Heat\ Rate\ (SHR)}{Gross\ Calorific\ Value\ (GCV)}\ x\ \frac{1}{(1 - Aux\ iliary\ Consumption\ Factor)}\ x\ \frac{P1}{1000}$$

$P_{(n)}$ = Price per tonne of biomass for the n^{th} year to be considered for tariff determination

$P_{(n-1)}$ = Price per tonne of biomass for the $(n-1)^{th}$ year to be considered for tariff determination. P_1 shall be the Biomass price for FY 2015-16 as specified under Regulation 49."

The Biomass fuel price shall be revised by the Commission taking into consideration the Biomass fuel price determined by the Central Commission or a normative escalation factor of 5% per annum, as it may consider appropriate."

Accordingly, in case of Biomass-based Power Projects commissioned on or before 31 March, 2017, the Variable Charge component of the Tariff shall be determined as outlined in para 4.14 of this Order. The Fixed Charge component shall continue to be governed by the relevant Orders of the Commission.

4.2. CAPITAL COST OF BIOMASS-BASED POWER PROJECTS

Regulation 38 specifies the normative Capital Cost for Biomass-based Power Projects based on Rankine Cycle technology as Rs. 494.32 lakh per MW for FY 2015-16 (Base Year). The Base Year Capital Cost has been revised as per the indexation mechanism of the CERC RE Tariff Regulations, as stipulated in Regulation 39 of the Commission's Regulations. The computation steps are as shown in para. 2.4 of this Order. The normative Capital Cost for FY 2017-18 computed as per the CERC RE Tariff Regulations mechanism is shown in the Table below.

Parameter	Description	Cost
1+F1+F2+F3		1.33
CC_0 (Rs. lakh/MW)	Capital Cost for the Base Year	494.32
$P\&M_0$ (Rs. lakh/MW)	Plant & Machinery Cost for the Base Year Capital Cost	371.67
$P\&M_n$ (Rs. lakh/MW)	Plant & Machinery Cost for the nth Year (FY 2017-18)	366.98

CC_n (Rs. lakh/MW)	**Capital Cost for the nth Year (FY2017-18)**	**488.08**

4.3. DEBT-EQUITY RATIO

In accordance with Regulation 14.1, the debt and equity components for Biomass-based Power Projects to be commissioned during the applicable period of this Order work out to Rs. 341.66 lakh per MW and Rs. 146.42 lakh per MW respectively.

4.4. RETURN ON EQUITY

In accordance with Regulation 17.2, the RoE works out as shown in the Table below:

Particulars	Biomass-based Projects
Opening Equity (in Rs lakh per MW)	146.42
Return on Equity for the first 10 years @16% grossing up with MAT rate of 21.34% (Rs lakh per MW)	29.78
Return on Equity after first 10 years @16% grossing up with Income Tax rate of 34.61% (Rs lakh per MW)	35.83

Grossing up of the RoE is done as per the Formula: RoE (%) / [1- Tax Rate(%)]

4.5. INTEREST ON LOAN

As explained in para. 1.4 of this Order, the interest rate of 11.00% has been considered for Biomass-based Power Projects commissioned in the applicable period of this Order, with a gross opening loan amount of Rs. 341.66 lakh per MW.

4.6. DEPRECIATION

In accordance with Regulation 16.2, depreciation will be charged at 5.83% for the first 12 years, and at 2.50% thereafter for the remaining Useful Life of 8 years.

4.7. INTEREST ON WORKING CAPITAL

Regulation 18.2 provides for computation of the working capital requirements of Biomass-based Power Projects as under:

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

(b) O & M expenses for one month;

(c) Receivables equivalent to two months of fixed and variable charges for sale of electricity calculated on the target PLF;

(d) Maintenance spares @ 15% of O & M expenses"

As explained at para. 1.4 and 1.5 earlier, IoWC is taken as 11.00 % for computation of the Tariff of Biomass Power Projects for FY 2017-18.

4.8. PLANT LOAD FACTOR

In accordance with Regulation 40.1 of the RE Tariff Regulations, the Plant Load Factor (PLF) for determining the Fixed Charge component of the Tariff for Biomass-based Power Projects will be as follows:

a) During stabilisation: 60%
b) During the remaining period of the first year (after stabilisation): 70%
c) From 2nd Year onwards: 80%.

4.9. AUXILIARY POWER CONSUMPTION

In accordance with Regulation 41, a Normative Auxiliary Consumption of 10.0% has been considered.

4.10. STATION HEAT RATE

In accordance with Regulation 42, the Normative SHR of 4200 kcal/kWh has been considered for determination of Tariff.

4.11. OPERATION AND MAINTENANCE EXPENSES

Regulation 43.1 specifies the normative O&M Expenses for Biomass-based Power Projects for FY 2015-16 (Base Year) as 5.32% of the Capital Cost for Tariff determination. This works out to Rs. 26.30 lakh per MW, which is to be escalated at 2.96% for the second year FY 2016-17, and further escalated by 2.97% (as per the escalation rate in the last MYT Orders) for. FY 2017-18. Accordingly, the Commission has taken the O&M expense norm for Biomass Projects for FY 2017-18 as Rs. 27.88 lakh per MW.

4.12. CALORIFIC VALUE

In accordance with Regulation 48, the average Calorific Value of the Biomass Fuel (s) of 3611 kcal/kg has been considered for determination of Tariff.

4.13. FUEL COST

Regulation 49 specifies the Biomass fuel price in the first year of the Review Period, i.e., FY 2015-16, as Rs. 3987/MT, to be linked to the indexation mechanism specified under Regulation 50. As per Regulation 50.1, the Biomass fuel price is to be revised taking into consideration the Biomass fuel price determined by the CERC or a normative escalation factor of 5% per annum, as it may consider appropriate. While the CERC is yet to notify the Biomass price for FY 2017-18, it had approved the Biomass fuel price for Maharashtra for FY 2016-17 as Rs. 3268.62/MT. Considering the equivalent calorific value method, the Biomass fuel price for Maharashtra for FY 2016-17 works out as below:

$$Derived\ Biomass\ fuel\ price\ for\ Maharashtra\ for\ FY\ 2016-17$$
$$= Biomass\ fuel\ price\ of\ CERC\ for\ FY\ 2016-17\ for\ Maharashtra\ x\ \frac{Gross\ Calorific\ Value\ (GCV)\ consider\ by\ MERC}{\text{Gross Calorific Value (GCV)}considered\ by\ CERC}$$

$= 3268.62\ x\ \frac{3611}{3100} = 3807.42$ Rs./MT

Considering the principle of equivalent heat value, Biomass fuel price for Maharashtra for FY 2016-17 works out to Rs. 3807.42 /MT. With an annual escalation factor of 5%, the Fuel Cost for Biomass-based Power Projects to be commissioned during FY 2017-18 works out to Rs 3997.79 per MT. Considering this Fuel Cost, the Commission has computed the Variable Charge as Rs. 5.14/kWh in accordance with Regulation 50.1, considering GCV of 3611 kcal/kg, SHR as 4200 Kcal/kWh and Auxiliary Consumption as 10%.

4.14. VARIABLE CHARGE FOR BIOMASS-BASED POWER PROJECTS COMMISSIONED PRIOR TO 1 APRIL, 2017

As per Regulation 37.2, the fuel-related aspects specified in Regulations 44 to 50 shall be applicable to both existing and new Biomass-based Power Projects, except for the SHR and Auxiliary Consumption norms which shall be as stipulated in the respective RE Tariff Orders referred to in Regulation 3.2. Accordingly, the norms in respect of Fuel Price and GCV shall be applicable to existing Projects as per Regulations 48, 49 and 50. Further, as detailed in para. 1.18 of the Generic RE Tariff Order in Case No. 135 of 2015, the SHR for existing Projects has been considered the same as for new Projects, i.e. 4200 kcal/kWh. The Auxiliary Consumption Factor for existing Projects commissioned prior to 1 April, 2017 shall be as stipulated in the respective Tariff Orders (i.e., 10%). Based on these parameters, the variable cost of the Projects commissioned before 1 April, 2017 works out to Rs 5.14/kWh.

The Fixed Charge component of the Tariff for Biomass-based Power Projects commissioned prior to 1 April, 2017 shall be the levelised Fixed Charge approved under the respective RE Tariff Orders.

4.15. LEVELISED TARIFF FOR BIOMASS-BASED POWER PROJECTS FOR FY 2017-18

Considering the above parameters and the discount factor of 9.84 % (as computed at para 1.6 of this Order) for levelisation of Tariff, the Generic Tariffs for Biomass-based Power Projects for the applicable period of this Order have been determined as in the Table below.

Date of Commissioning of Project	Fixed Charge (Rs/kWh)	Variable Charge (Rs/kWh)	Tariff during 1 April, 2017 to 31 March, 2018 (Rs/kWh)	Benefit of Accelerated Depreciation (if availed) (Rs/kWh)	Net Levelised Tariff (upon adjusting for accelerated depreciation benefit, if availed) (Rs/kWh)
During FY 2017-18	**2.09**	**5.14**	**7.23**	**0.16**	**7.07**

During FY 2016-17	2.25***	5.14	7.39	0.17	7.22
During FY 2015-16 (10 November, 2015 to 31 March, 2016)	2.35@	5.14	7.49	0.16	7.33
During FY 2015-16 (1 April to 9 November, 2015)	2.27*	5.14	7.41	0.22*	7.19
During FY 2014-15	2.27*	5.14	7.41	0.22*	7.19
During FY 2013-14	2.17#	5.14	7.31	0.21#	7.10
Prior to FY 2013-14	1.70**	5.14	6.84	NA	6.84

**** As per Order Dt 29 April, 2016 in Case No. 45 of 2016 (from 1st April, 2016 to 31st March, 2017)*
@ As per Order dt 25 January, 2016 in Case No 135 of 2015 (from 10 November, 2015 to 31 March, 2016)
** As per Order dt 7 July, 2014 in Case No. 100 of 2014(extended till 31 Dec 2015)*
 # As per Order dt 22 March, 2013 in Case No. 6 of 2013
***Considering first year of operation as per Order dt 8 August, 2005 in Case Nos. 37 of 2003 and 83 of 2008.*

The detailed computations of Tariff for FY 2017-18 for Biomass based Power Projects are provided in Annexure 3 of this Order.

The Tariff Rate comprises (i) Fixed Charge component, and (ii) Variable Charge component, and shall be applicable for sale of power by Rankine Cycle-based Projects to Distribution Licensees in Maharashtra during the applicable period of this Order.

5. NON-FOSSIL FUEL-BASED CO-GENERATION PROJECTS

5.1. KEY PROVISIONS OF RE TARIFF REGULATIONS

Chapter 6 of the RE Tariff Regulations provides the technology-specific norms for determination of Tariff for Non-Fossil Fuel-based Co-Generation Projects. Regulations 52.1 and 52.2 read as follows:

> *"52.1 The Capital cost and performance norms specified in this Chapter shall be applicable only to Non-Fossil Fuel-based Co-Generation Projects commissioned after notification of these Regulations.*
>
> *52.2 The fuel-related aspects specified under Regulations 59 to 66 shall be applicable to both existing and new Non-Fossil Fuel-based Co-Generation Projects:*

Provided that the norms in respect of specific fuel consumption and Auxiliary Consumption factor for existing Non-Fossil Fuel-based Co-Generation Projects shall be as stipulated in the respective RE Tariff Orders referred to in Regulation 3.2."

The Regulations also specify that the fuel price for each year of operation, for both existing and new Projects, shall be adjusted according to the following indexation mechanism:

"61.1 In the case of both existing and new Non-Fossil Fuel-based Co-Generation Projects, the following indexing mechanism for adjustment of fuel prices for each year of operation will be applicable for determination of the variable charge component of tariff:

The Variable Charge for the nth year shall be computed as under:

$VC_n = VC_1 x (P_n / P_1)$

where,

VC_1 represents the Variable Charge based on Bagasse Price P1 for FY 2015-16 as specified under Regulation 60, and shall be determined as under:

$$\boldsymbol{VC1} = \frac{Station\ Heat\ Rate\ (SHR)}{Gross\ Calorific\ Value\ (GCV)}\ x\ \frac{1}{(1 - Aux\ iliary\ Consumption\ Factor)}\ x\ \frac{P1}{1000}$$

$P_{(n)}$ = Price per tonne of Bagasse for the n^{th} year to be considered for tariff determination

$P_{(n-1)}$ = Price per tonne of Bagasse for the $(n-1)^{th}$ year to be considered for tariff determination. P_1 shall be the Bagasse price for FY 2015-16 as specified under Regulation 60.

The Bagasse fuel price shall be revised by the Commission taking into consideration the Bagasse fuel price determined by the Central Commission for each year or a normative escalation factor of 5% per annum, as it may consider appropriate."

Accordingly, in case of Non-Fossil Fuel-based Co-generation Power Projects commissioned on or before 31 March, 2017, the Variable Charge component of the Tariff shall be determined as per para. 5.14 of this Order. The Fixed Charge component shall continue to be governed by the relevant Orders issued by the Commission.

5.2. CAPITAL COST OF NON-FOSSIL FUEL-BASED CO-GENERATION PROJECTS

The normative Capital Cost of Non-Fossil Fuel-based Co-Generation Projects for the first year of the Review Period has been specified in Regulation 53. Hence, the normative Capital Cost for FY 2015-16 (Base Year) is considered as Rs. 489.02 lakh per MW. The Base Year Capital Cost has been escalated considering the CERC RE Tariff Regulations indexation mechanism, as stipulated in Regulation 54 of the Commission's RE Tariff Regulations. The computation steps are as shown in para. 2.4 of this Order. The normative

Capital Cost for FY 2017-18 computed as per the CERC RE Tariff Regulations mechanism is as shown in the Table below.

Parameter	Description	Cost
1+F1+F2+F3		1.33
CC_0 (Rs. lakh/MW)	Capital Cost for the Base Year	489.02
$P\&M_0$(Rs. lakh/MW)	Plant & Machinery Cost for the Base Year Capital Cost	367.68
$P\&M_n$(Rs. lakh/MW)	Plant & Machinery Cost for the nth Year (FY 2017-18)	363.04
CC_n(Rs. lakh/MW)	**Capital Cost for the nth Year (FY2017-18)**	**482.85**

5.3. DEBT-EQUITY RATIO

In accordance with Regulation 14.1, the debt and equity components work out to Rs. 337.99 lakh per MW and Rs. 144.85 lakh per MW, respectively.

5.4. RETURN ON EQUITY

In accordance with Regulation 17, the RoE works out as shown in the Table below:

Particulars	Non-Fossil Fuel-based Co-generation Project
Opening Equity (in Rs lakh per MW)	144.85
Return on Equity for the first 10 years @16% grossing up with MAT rate of 21.34% (Rs lakh per MW)	29.47
Return on Equity after first 10 years @16% grossing up with Income Tax rate of 34.61% (Rs lakh per MW)	35.44

Grossing up of the RoE is done as per the Formula: RoE(%) / [1- Tax Rate(%)].

5.5. INTEREST ON LOAN

As explained in para. 1.4 of this Order, an interest rate of 11.00% has been taken, with a gross opening loan amount of Rs. 337.99 lakh per MW in FY 2017-18.

5.6. DEPRECIATION

In accordance with Regulation 16, the depreciation will be charged at 5.83% for the first 12 years, and at 2.50% thereafter for the remaining Useful Life of 8 years.

5.7. INTEREST ON WORKING CAPITAL

Regulation 18 provides for computation of the working capital requirements as follows:

a) " Fuel costs for four months equivalent to normative Plant Load Factor ('PLF');

b) O&M expenses for one month;

c) Receivables equivalent to two months of fixed and variable charges for sale of electricity calculated on the target PLF;

d) Maintenance spares @ 15% of O&M expenses."

Further, as explained in para. 1.4 and 1.5, the IoWC is considered as 11.00 % for computation of tariff for Non-Fossil Fuel-based Co-Generation Projects for FY 2017-18.

5.8. OPERATION AND MAINTENANCE EXPENSES

Regulation 58.1 specifies the normative O&M Expenses for Non-Fossil Fuel-based Co-Generation Projects for FY 2015-16 (Base Year) as 3.54% of the Capital Cost, which works out to Rs. 17.31 lakh per MW. The Base Year O&M Expense is to be escalated at 2.96% for the second year FY 2016-17, and further at 2.97% (as in the last MYT Orders) for FY 2017-18. Accordingly, the Commission has applied an O&M Expense norm for FY 2017-18 of Rs. 18.35 lakh per MW

5.9. PLANT LOAD FACTOR

In accordance with Regulation 55.2, PLF of 60% has been considered.

5.10. AUXILIARY POWER CONSUMPTION

In accordance with Regulation 56, the Auxiliary Consumption of 8.5% has been applied.

5.11. STATION HEAT RATE

In accordance with Regulation 57, the Normative SHR is 3600 kcal/kWh.

5.12. CALORIFIC VALUE

Under Regulation 59, the average Calorific Value of Bagasse fuel is considered as 2250 kcal/kg for determination of the Tariff of such Projects.

5.13. FUEL COST

Regulation 60.1 specifies the Bagasse fuel price during the first year, i.e., FY 2015-16, as Rs. 2326.84/MT, which is linked to the indexation mechanism specified under Regulation 61.

As per Regulation 61.1, the indexation mechanism specifies that the bagasse fuel price shall be revised taking into consideration the fuel price determined by the CERC or a normative escalation factor of 5% per annum, as it may consider appropriate. While the CERC is yet to notify bagasse price for FY 2017-18, it has approved the fuel price for Maharashtra for FY 2016-17 as Rs. 2221.93/MT. Considering the equivalent calorific value method, the bagasse fuel price for Maharashtra for FY 2016-17 works out as below:

$$Derived\ Bagasse\ fuel\ price\ for\ Maharashtra\ for\ FY\ 2016-17$$
$$= Bagasse\ fuel\ price\ of\ CERC\ for\ FY\ 2016-17\ for\ Maharashtra\ x\ \frac{Gross\ Calorific\ Value\ (GCV)\ consider\ by\ MERC}{\text{Gross Calorific Value (GCV)}considered\ by\ CERC}$$
$$= 2221.93x\ \frac{2250}{2250} = 2221.93\ \text{Rs./MT}$$

Considering the principle of equivalent heat value, the bagasse fuel price for Maharashtra for FY 2016-17 works out to Rs. 2221.93 /MT. With an annual escalation factor of 5%, the Fuel Cost for Bagasse-based Power Projects to be commissioned during FY 2017-18 works out to Rs 2333.03 per MT.

Considering this Fuel Cost, the Commission has computed the Variable Charge as Rs. 4.08/kWh for Projects to be commissioned during this period, in accordance with Regulation 61.1, considering GCV as 2250 kcal/kg, SHR as 3600 Kcal/kWh and Auxiliary Consumption as 8.5%.

5.14. VARIABLE CHARGE FOR BAGASSE-BASED CO-GENERATION POWER PROJECTS COMMISSIONED PRIOR TO 1 APRIL, 2017

As per Regulation 55.2, the fuel-related aspects specified in Regulations 59 to 66 shall be applicable to both existing and new Non-Fossil Fuel-based Co-Generation Projects, except for the SHR and Auxiliary Consumption norms which shall be as stipulated in the respective RE Tariff Orders referred to in Regulation 3.2. Accordingly, the norms in respect of Fuel Price and GCV shall be applicable to existing Projects as per Regulations 59, 60 and 61. The Auxiliary Consumption Factor for existing Projects commissioned prior to 1 April, 2017 shall be as stipulated in the respective Tariff Orders (i.e., 8.5%). Based on these parameters, the variable cost of the Projects commissioned prior to 1 April, 2017 works out to Rs 4.08/kWh.

The Fixed Charge component of the Tariff for Projects commissioned prior to 1 April, 2017 shall be the levelised Fixed Charge approved under the respective RE Tariff Orders.

5.15. LEVELISED TARIFF FOR NON-FOSSIL FUEL-BASED CO-GENERATION PROJECTS FROM 1 APRIL, 2017 TO 31 MARCH, 2018

Considering the above parameters and the discount factor as 9.84% (as computed at para 1.6 of this Order) for levelisation of Tariff of Non-Fossil Fuel-based Co-Generation Projects commissioned in FY 2017-18, the Generic Tariffs for such Projects for FY 2017-18 have been determined as under:

TARIFF FOR NON-FOSSIL FUEL-BASED CO-GENERATION PROJECTS IN FY 2017-18

Date of Commissioning	Fixed Charge (Rs/kWh)	Variable Charge (Rs/kWh)	Tariff (Rs/kWh)	Benefit of Accelerated Depreciation (if availed) (Rs/kWh)	Net Levelised Tariff (upon adjusting for accelerated depreciation benefit, if availed) (Rs/kWh)
During FY 2017-18	**2.34**	**4.08**	**6.42**	**0.16**	**6.26**
During FY 2016-17	2.43***	4.08	6.51	0.21	6.30
During FY 2015-16 (10 November, 2015 to 31 March, 2016)	2.52@	4.08	6.60	0.21	6.39
During FY 2015-16 (1 April to 9 November, 2015)	2.46*	4.08	6.54	0.28	6.34
During FY 2014-15	2.46*	4.08	6.54	0.28	6.34
During FY 2013-14	2.38#	4.08	6.46	0.27	6.19
Prior to FY 2013-14	2.26**	4.08	6.34		6.34

**** As per Order dt 29 April, 2016 in Case No. 45 of 2016 (from 1st April 2016 to 31st March, 2017)*
@ As per Order dt 25 January,2016 in Case No 135 of 2015 (from 10 November, 2015 to 31 March, 2016)
** As per Order dt 7 July, 2014 in Case No. 100 of 2014(extended till 31 Dec 2015)*
#As per Order dt 22 March, 2013 in Case No. 6 of 2013
*** As per Order dt 11 January, 2010 in Case No. 123 of 2008.*

The computations of Tariff for FY 2017-18 are provided in Annexure 4 of this Order.

The Fixed Charge component of the Tariff for Projects commissioned prior to 1 April, 2017 shall be the levelised Fixed Charge approved under the respective RE Tariff Orders.

The Tariff Rate comprises (i) Fixed Charge component, and (ii) Variable Charge component, and shall be applicable for sale of power by such Projects to Distribution Licensees in Maharashtra in FY 2017-18.

5.16. TARIFF FOR NON-FOSSIL FUEL-BASED CO-GENERATION PLANTS USING BIOMASS

Regulation 60.2 specifies that the fuel price for Non-Fossil Fuel-based Co-Generation Projects using biomass other than bagasse, will be the biomass prices specified under Regulation 49. Accordingly, the fuel cost for such Projects is considered as Rs. 3997.79 per MT as set out in para. 4.13 of this Order. The corresponding Calorific Value of biomass fuel (3611 kcal/kg) has been taken as set out in para 4.12. Considering this Fuel Cost and Calorific Value and the Auxiliary Consumption and SHR applicable to Non-Fossil Fuel-based Co-Generation Projects set out at para 5.10 and 5.11, respectively, the Commission has computed the Variable Charge as Rs. 4.35/kWh for Non-Fossil Fuel-based Co-Generation Projects using biomass for FY 2017-18, for the period for which such Projects are using biomass as follows:

$$Variable\ Charge = \frac{\text{Station Heat Rate(SHR)}}{\text{Gross Calorific Value (GCV)}} \times \frac{1}{(1 - \text{Auxillary Consumption Factor})} \times \frac{\text{Price per tonne of Fuel}}{1000}$$

$$4.35 = \frac{3600}{3611} \times \frac{1}{(1 - 8.5\%)} \times \frac{3997.79}{1000}$$

The Project Entity shall, along with its monthly energy bill, furnish a monthly fuel procurement and fuel usage statement certified by a Chartered Accountant to the Distribution Licensee with whom an Energy Purchase Agreement (EPA) has been entered into and to the State Nodal Agency (which is presently the Maharashtra Energy Development Agency (MEDA)) for monitoring the fossil and Non-Fossil fuel consumption as per Regulation 46. The State Nodal Agency shall verify the use of biomass other than bagasse for applicability of the biomass fuel tariff for Non-Fossil Fuel-based Co-Generation Projects using biomass. Before making payment of the monthly energy bills, the Distribution Licensees shall satisfy themselves about the monthly fuel procurement and fuel usage as per the statement certified by a Chartered Accountant and verified by the State Nodal Agency. The Distribution Licensees shall also submit an annual consolidated report to the Commission, giving details of monthly fuel bills and fuel use statement for such Projects having EPAs with them.

5.17. TARIFF FOR NON-QUALIFYING NON-FOSSIL FUEL-BASED CO-GENERATION PLANTS

The Tariff of Non-Qualifying Non-Fossil Fuel-based Co-Generation Projects will be equivalent to the Average Power Purchase Cost (APPC) of the respective Distribution Licensees for FY 2017-18, in accordance with Regulation 67.

6. SOLAR PHOTO VOLTAIC PROJECTS

6.1. USEFUL LIFE

Regulation 2.1 (mm) defines 'Useful Life' in relation to a Unit of a Generating Station (including evacuation system) to mean the duration from the COD till such time as specified under the Regulations for such generation facility. The Useful Life specified for Solar Photo Voltaic (PV) Projects is 25 years.

6.2. CONTROL PERIOD

The Control Period for Solar PV Projects shall be in accordance with the relevant stipulations at para 2.1 of this Order.

6.3. TARIFF PERIOD

Regulation 7 specifies the Tariff Period for Solar PV Projects as 13 years. In terms of Regulation 7.5, the Tariff Period specified shall be reckoned from the COD of the RE Projects, and the Tariff determined under the Regulations shall be applicable only for the duration of the Tariff Period.

6.4. CAPITAL COST OF SOLAR PV PROJECTS

Regulation 69 specifies the normative Capital Cost of Solar PV Projects as Rs. 605.85 lakh/MW for the Base Year FY 2015-16. Further, in its previous RE Tariff Order dated 29 April, 2016 in Case No.45, the Commission considered the capital cost of Solar PV Projects as Rs. 530.02 lakh/MW for FY 2016-17, which was in line with the CERC's RE tariff Order dated 23 March, 2016.

However, CERC is yet to publish a benchmark capital cost for Solar PV Projects for FY 2017-18, and its draft Regulations do not envisage any. The capital cost of solar PV modules is varying significantly and the declining trend of capital cost is expected to continue in the near future as well. Hence, for deriving the normative capital cost for solar PV Projects for FY 2017-18, the Commission evaluated the following three options:

a) Option 1: Capital Cost determined by other SERCs for FY 2017-18

The Commission considered the Capital Cost specified by other State Electricity Regulatory Commissions (SERCs), primarily of Gujarat (GERC), Madhya Pradesh (MPERC), Karnataka (KERC) and Rajasthan (RERC) for FY 2017-18. Except for RERC, all others have considered a Capital cost in the range of Rs. 530 lakh/MW to Rs. 615 lakh/MW, equal or higher than the Capital Cost considered by this Commission for FY 2016-17.

In its recent Order dated 23 August, 2016, the RERC has taken a Capital Cost of Rs. 518.59 lakh/MW. However, it includes evacuation and transmission costs, including connectivity charges of Rs.15 lakh/MW. The RERC capital cost excluding evacuation and transmission costs works out to Rs. 503.59 lakh/MW.

b) **Option 2: Derived Capital Cost considering Viability Gap Funding (VGF) and tariff discovered under reverse bidding process of SECI under JNNSM**

The Solar Energy Corporation of India (SECI) invited bids under Phase-II, Batch-IV of the Jawaharlal Nehru National Solar Mission (JNNSM) for Maharashtra for 450 MW in the open category with VGF on 14 June, 2016 with a benchmark tariff of Rs. 4.43/kWh and VGF support. SECI will also charge Rs.0.07 /kWh as trading margin from the Distribution Licensees.

Considering the SECI trading margin, the benchmark tariff for Distribution Licensees will be Rs. 4.50/kWh. The Commission has estimated the proportionate per MW Capital Cost for arriving at the tariff of Rs. 4.50/kWh, considering the market benchmark for cost of capital.

The VGF sought by the bidders ranges from zero to 19.99 lakh/MW. However, as the bids of zero VGF are only for 10 MW out of the total capacity of 450 MW, the Commission has not taken it into account. The VGF sought by other bidders for the remaining 440 MW capacity is between Rs. 19 lakh/MW to Rs.19.99 lakh/MW. The Average VGF sought by bidders is Rs.19.74 lakh/MW. Considering VGF as additional capital cost, the total Capital Cost is derived as Rs. 405 + 19.74 = Rs. 424.74 lakh/MW.

c) Option 3: Component-wise cost-plus approach based on market cost for Solar PV modules and Balance of Systems (BoS) of Projects

The Capital Cost of Solar PV Projects broadly comprises the PV module and the non-module components, or the BoS of the Project. The Commission analysed the module and non-module cost separately at the market trend and considered the component-wise capital cost as below:

Item	Component-wise Capital Cost (Rs. lakh/MW)	Remarks
PV Module	294.04	Based on Market Analysis
Power Conditioning Unit	25	
Land	25	Similar to CERC's Order for FY 2016-17
Civil & general Works	35	
Ground Mounting Structures	35	
Cables and transformers	44	
Preliminary/Pre-operating expenses	27.63	
Total in Rs. lakh/MW	**485.67**	

The capital cost set out in **Option-1** above may not be representative of the prevalent solar PV market scenario trend as most of the SERC Orders were issued several months ago, in

August, 2016. As regards **Option-3** for estimating the component-wise capital cost, the draft CERC RE Tariff Regulations, 2017 do not envisage determination of any capital cost benchmark for Solar PV Projects but expect that it will be approved on a Project-specific basis. Thus, no benchmark for component-wise capital cost for FY 2017-18 is available at this stage, and the component-wise cost benchmark for the previous year i.e. FY 2016-17 is available from the CERC's earlier RE Tariff Order.

Estimating the component-wise capital cost for FY 2017-18 under Option-3 considering the percentage share of different cost components as approved for FY 2016-17 would not be appropriate considering the rapid decline in the PV Module costs. The PV module costs based on current and expected market price trends may be considered for capital cost estimation for FY 2017-18, but projection of other Non-Module costs (e.g. land, power evacuation, erection and installation costs) would be a challenge without assessment of ground realities. Estimation of Non-Module Costs linked to approved costs for FY 2016-17, as envisaged under Option-3, would not provide an appropriate representation of the projected cost estimates for FY 2017-18.

The Commission notes that, out of 9 GW + Solar PV installed capacity in India (as in February, 2017), over 80% capacity has been set up through the bidding process under Central schemes (SECI/NVVNL) or State-level programmes, and only a relatively small component of solar capacity addition has taken place under the cost-plus regulated regime. Hence, it may be appropriate to consider cost benchmarks emerging through the bidding process as it takes into account prevalent market conditions, emerging trends in technology and costs and corresponding expectations of risks and returns. The bidding process referred to in **Option-2** was executed by SECI specifically for Maharashtra State and through open competitive bidding. Moreover, the Projects under this bidding process are expected to be commissioned in FY 2017-18.

Hence, the Commission is of the view that it is more appropriate to consider the capital cost derived from SECI's bidding process under Option-2 above, which is Rs. 424.74 lakh/MW for Solar PV Power projects, for the Generic Tariff for such Projects for FY 2017-18.

6.5. DEBT-EQUITY RATIO

In accordance with Regulation 14.1, the normative debt and equity components for Solar PV Projects shall be Rs. 270.79 lakh per MW and Rs. 116.05 lakh per MW, respectively.

6.6. RETURN ON EQUITY

In accordance with Regulation 17.1, the RoE works out as shown in the Table below:

Particulars	**Solar PV Projects**
Opening Equity (in Rs lakh per MW)	127.42
Return on Equity for the first 10 years @16% grossing up with MAT rate of 21.34% (Rs lakh per MW	25.92
Return on Equity after first 10 years @16% grossing up with Income Tax rate of 34.61% (Rs lakh per MW)	31.18

Grossing up of the RoE is done as per the Formula: RoE(%) / [1- Tax Rate(%)].

6.7. INTEREST ON LOAN

As explained in Para. 1.4 of this Order, an interest rate of 11.00% has been taken for a loan amount of Rs. 297.32 lakh per MW in FY 2017-18.

6.8. DEPRECIATION

In accordance with Regulation 16, depreciation will be charged at 5.83% for the first 12 years, and at 1.54% thereafter for the remaining Useful Life of 13 years for Solar PV Projects.

6.9. INTEREST ON WORKING CAPITAL

Regulation 18.1 provides for computation of the working capital requirements for Solar PV Projects as under:

a) *"O&M expenses for one month;*

b) *Receivables equivalent to two months of tariff for sale of electricity calculated on the normative CUF;*

c) *Maintenance spares @ 15% of O&M expenses."*

As explained in Para. 1.4 and 1.5 of this Order, the IoWC is considered as 11.00% for computation of the Tariff.

6.10. OPERATION AND MAINTENANCE EXPENSES

Regulation 71.1 specifies the normative O&M Expenses for Solar PV Projects for FY 2015-16 (Base Year) as Rs. 13 lakh per MW. The Base Year O&M Expense is to be escalated at 2.96% for the second year FY 2016-17, and further escalated at 2.97% (as per the last MYT Orders) for FY 2017-18. Accordingly, the Commission has taken the O&M Expense norm for Solar PV Projects for FY 2017-18 as Rs. 13.78 lakh per MW.

6.11. CAPACITY UTILISATION FACTOR

In accordance with Regulation 70, CUF of 19% has been taken.

6.12. LEVELISED TARIFF FOR SOLAR PV POWER PROJECTS COMMISSIONED IN FY 2017-18

Considering the parameters discussed above and the discount factor of 9.84 % derived from the methodology at para. 1.6 of this Order, the Generic Tariff for Solar PV Projects commissioned during FY 2017-18 has been determined as shown below:

Particulars	Tariff Period	Levelised Tariff	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for Accelerated Depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Solar PV Projects	13	4.91	0.39	4.52

The Tariff computations for FY 2017-18 are provided in Annexure 5A of this Order.

6.13. LEVELISED TARIFF FOR SOLAR ROOF-TOP PV PROJECTS FOR FY 2017-18

The Solar Roof-top PV Projects covered in this Order under the RE Tariff Regulations, 2015 are distinct and separate from those covered under the MERC (Net Metering for Roof-top Solar PV Systems) Regulations, 2015.

Regulation 72 of the RE Tariff Regulations specifies that the Tariff for Solar Roof-top PV Projects shall be Rs 0.50 per kWh higher than that of other Solar PV Projects. Accordingly, the Tariff for such Projects during FY 2017-18 shall be as follows:

Tariff for New Solar Roof-top PV Power Projects

Particulars	Tariff Period	Levelised Total Tariff	Benefit of Accelerated Depreciation (if availed)	Net Levelised Tariff (upon adjusting for Accelerated Depreciation benefit, if availed)
		(Rs/kWh)	(Rs/kWh)	(Rs/kWh)
Solar Roof-top PV and other small Solar Power Projects	13	5.41	0.39	5.02

7. SOLAR THERMAL POWER PROJECTS

7.1. USEFUL LIFE

Regulation 2.1 (mm) defines the 'Useful Life' of a Unit of a Generating Station (including evacuation system) to mean the duration from the COD till such time as specified under the Regulations for such generation facility. The Useful Life specified for Solar Thermal Power Projects is 25 years.

7.2. CONTROL PERIOD

The Control Period for Solar Thermal Power Projects shall be in accordance with the relevant stipulations in para 1.1 of this Order.

7.3. TARIFF PERIOD

Regulation 7 specifies the Tariff Period for Solar PV Projects as 25 years. In terms of Regulation 7.5, the Tariff Period shall be reckoned from the COD of the RE Project, and the Tariff determined under the Regulations shall be applicable only for the duration of the Tariff Period.

7.4. CAPITAL COST OF SOLAR THERMAL POWER PROJECTS

Regulation 74 specifies the normative Capital Cost of a Solar Thermal Power Project for FY 2015-16 (Base Year) as Rs. 1200 lakh/MW. Vide its Order dated 23 March, 2016, the CERC has determined the normative Capital Cost for such Projects as Rs. 1200 lakh/MW for FY 2016-17. The Commission has taken this normative Capital Cost for Projects to be commissioned in FY 2017-18 also.

7.5. DEBT-EQUITY RATIO

In accordance with Regulation 14.1, the normative debt and equity components for Solar Thermal Projects shall be Rs. 840 lakh per MW and Rs. 360 lakh per MW, respectively.

7.6. RETURN ON EQUITY

In accordance with Regulation 17.1, the RoE for such Projects works out as shown in the Table below:

Particulars	**Solar Thermal Projects**
Opening Equity (in Rs lakh per MW)	360.00
Return on Equity for the first 10 years @16% grossing up with MAT rate of 21.34% (Rs lakh per MW)	73.23
Return on Equity after first 10 years @16% grossing up with Income Tax rate of 34.61% (Rs lakh per MW)	88.08

Grossing up of the RoE is done as per the Formula: RoE (%) / [1- Tax Rate(%)].

7.7. INTEREST ON LOAN

As explained in para. 1.4 of this Order, the interest rate of 11.00% has been considered for Solar Thermal Power Projects for a loan amount of Rs. 840.00 lakh per MW for FY 2017-18.

7.8. DEPRECIATION

In accordance with Regulation 16, the Depreciation will be charged at 5.83% for the first 12 years, and at 1.54% thereafter for the remaining Useful Life of 13 years.

7.9. INTEREST ON WORKING CAPITAL

Regulation 18.1 provides for computation of the working capital requirements for Solar Thermal Power Projects as under:

"a) O&M expenses for one month;

b) Receivables equivalent to two months of tariff for sale of electricity calculated on the normative CUF;

c) Maintenance spares @ 15% of O&M expenses."

As explained above in para. 1.4 and 1.5, the IoWC is considered as 11.00% for computation of Tariff for FY 2017-18.

7.10. OPERATION AND MAINTENANCE EXPENSES

Regulation 76.1 specifies the normative O&M Expenses for Solar Thermal Power Projects for FY 2015-16 (Base Year) as Rs. 15 lakh per MW. The Base Year O&M Expense is to be escalated at 2.96% for the second year FY 2016-17 and further escalated at 2.97% (as per the last MYT Orders) for FY 2017-18. Accordingly, the Commission has considered the O&M expenses for Solar Thermal Power Projects for FY 2017-18 as Rs. 15.90 lakh per MW.

7.11. CAPACITY UTILISATION FACTOR

In accordance with Regulation 75, CUF of 23% has been considered for determination of Tariff for such Projects.

7.12. LEVELISED TARIFF FOR SOLAR THERMAL POWER PROJECTS COMMISSIONED IN FY 2017-18

Considering the parameters discussed in the preceding paras. and the discount factor of 9.84 % derived by the methodology set out at para. 1.6 of this Order, the Generic Tariff for Solar Thermal Power Projects commissioned in FY 2017-18 has been determined as under:

Tariff for New Solar Thermal Power Projects				
Particulars	**Tariff Period (Years)**	**Levelised Tariff**	**Benefit of Accelerated Depreciation (if availed)**	**Net Levelised Tariff (adjusting for Accelerated Depreciation benefit, if availed)**
		(Rs/kWh)	**(Rs/kWh)**	**(Rs/kWh)**
Solar Thermal Power Projects	25	11.04	1.02	10.02

The Tariff computations for FY 2017-18 are provided in Annexure 5B of this Order.

8. The detailed computations of the Generic Tariff for various RE technologies are set out in the following Annexures to this Order:

S.No.	Renewable Energy Projects	Annexure
1	**Wind Power Projects**	
	Wind Zone-I	Annexure 1A
	Wind Zone-II	Annexure 1B
	Wind Zone III	Annexure 1C
	Wind Zone IV	Annexure 1D
2	**Small Hydro Power Projects**	
	SHP above 1MW and upto and including 5 MW	Annexure 2A
	SHP above 5 MW and upto and including 25 MW	Annexure 2B
3	**Biomass Power Projects**	Annexure 3
4	**Non-Fossil Fuel-based Co-Generation Projects**	Annexure 4
5	**Solar Projects**	
	Solar PV Projects	Annexure 5A
	Solar Thermal Power Projects	Annexure 5B

9. Suggestions, objections and comments are invited on this draft Order from stake-holders and the public. The Commission shall finalize the Order after considering the responses received.

Sd/-
(Deepak Lad)
Member

Sd/-
(Azeez M. Khan)
Member

(Ashwani Kumar Sinha)
Secretary

Annexure – 1A
(Wind Zone-1)

Form 1.1 Assumptions Parameters — **Wind Zone**

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	1
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	22.0%
			Useful Life	Years	25
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	594.41
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	416.09
			Total Equity Amout	Rs Lacs	178.32
		Debt Component			
			Loan Amount	Rs Lacs	416.09
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	178.32
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		22.82%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%
			Years for 5.83% rate		12
5	**Working Capital**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15.00%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	11.00%
6	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	8.83
		power plant (FY17-18)		Rs Lakh	9.36
		Total O & M Expenses Escalation		%	2.97%

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		1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93

Fixed Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		9.36	9.64	9.93	10.22	10.53	10.84	11.16	11.49	11.83	12.18	12.55	12.92	13.30	13.70	14.10	14.52	14.95	15.40	15.86	16.33	16.81	17.31	17.82	18.35	18.90
Depreciation	Rs Lakh		34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16
Interest on term loan	Rs Lakh		43.86	40.05	36.23	32.42	28.61	24.79	20.98	17.16	13.35	9.54	5.72	1.91	0.00	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		2.21	2.22	2.23	2.25	2.26	2.27	2.28	2.29	2.31	2.32	2.33	2.35	2.36	2.38	2.39	2.41	2.42	2.44	2.46	2.48	2.50	2.51	2.53	2.55	2.57
Return on Equity	Rs Lakh		36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63
Total Fixed Cost	**Rs Lakh**		**126.36**	**122.84**	**119.32**	**115.81**	**112.32**	**108.83**	**105.35**	**101.88**	**98.42**	**94.97**	**98.89**	**95.46**	**68.46**	**68.87**	**69.29**	**69.73**	**70.17**	**70.63**	**71.11**	**71.60**	**72.10**	**72.62**	**73.15**	**73.70**	**74.27**
Per unit Fixed Cost	**Rs/kWh**		**6.56**	**6.37**	**6.19**	**6.01**	**5.83**	**5.65**	**5.47**	**5.29**	**5.11**	**4.93**	**5.13**	**4.95**	**3.55**	**3.57**	**3.60**	**3.62**	**3.64**	**3.67**	**3.69**	**3.72**	**3.74**	**3.77**	**3.80**	**3.82**	**3.85**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levellised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh	**0.62**	0.49	0.50	0.52	0.53	0.55	0.56	0.58	0.60	0.61	0.63	0.65	0.67	0.69	0.71	0.73	0.75	0.78	0.80	0.82	0.85	0.87	0.90	0.92	0.95	0.98
Depreciation	Rs/kWh	**1.46**	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Int. on term loan	Rs/kWh	**1.05**	2.28	2.08	1.88	1.68	1.48	1.29	1.09	0.89	0.69	0.49	0.30	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	**0.12**	0.11	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	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
RoE	Rs/kWh	**2.01**	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26	2.26
Total COG	**Rs/kWh**	**5.26**	**6.56**	**6.37**	**6.19**	**6.01**	**5.83**	**5.65**	**5.47**	**5.29**	**5.11**	**4.93**	**5.13**	**4.95**	**3.55**	**3.57**	**3.60**	**3.62**	**3.64**	**3.67**	**3.69**	**3.72**	**3.74**	**3.77**	**3.80**	**3.82**	**3.85**

Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Fixed Cost	5.26		101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29
Levellised Tariff	**5.26**	Rs/Unit																									

Determination of Additional Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	594.41

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	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100.0%	40.0%	24.0%	14.4%	8.6%	5.2%	3.1%	1.9%	1.1%	0.7%	0.4%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	356.65	95.11	57.06	34.24	20.54	12.33	7.40	4.44	2.66	1.60	0.96	0.58	0.35	0.21	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	325.26	63.72	25.68	2.85	-10.84	-19.06	-23.99	-26.95	-28.72	-29.79	-30.43	-30.81	-31.04	-31.18	-31.26	-31.31	-31.34	-1.40	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	112.57	22.05	8.89	0.99	-3.75	-6.60	-8.30	-9.33	-9.94	-10.31	-10.53	-10.66	-10.74	-10.79	-10.82	-10.84	-10.85	-0.48	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Per unit benefit	Rs/Unit	5.84	1.14	0.46	0.05	-0.19	-0.34	-0.43	-0.48	-0.52	-0.53	-0.55	-0.55	-0.56	-0.56	-0.56	-0.56	-0.56	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11

Levellised benefit	**0.48**	**Rs/Unit**

Annexure – 1B
(Wind Zone-2)

Form 1.1 Assumptions Parameters — **Wind Zone**

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	2
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	25.0%
			Useful Life	Years	25
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	594.41
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	416.09
			Total Equity Amout	Rs Lacs	178.32
		Debt Component			
			Loan Amount	Rs Lacs	416.09
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	178.32
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		22.82%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%
			Years for 5.83% rate		12
5	**Working Capital**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15.00%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	11.00%
6	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	8.83
		power plant (FY17-18)		Rs Lakh	9.36
		Total O & M Expenses Escalation		%	2.97%

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		2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19

Fixed Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs Lakh		9.36	9.64	9.93	10.22	10.53	10.84	11.16	11.49	11.83	12.18	12.55	12.92	13.30	13.70	14.10	14.52	14.95	15.40	15.86	16.33	16.81	17.31	17.82	18.35	18.90
Depreciation	Rs Lakh		34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16
Interest on term loan	Rs Lakh		43.86	40.05	36.23	32.42	28.61	24.79	20.98	17.16	13.35	9.54	5.72	1.91	0.00	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		2.21	2.22	2.23	2.25	2.26	2.27	2.28	2.29	2.31	2.32	2.33	2.35	2.36	2.38	2.39	2.41	2.42	2.44	2.46	2.48	2.50	2.51	2.53	2.55	2.57
Return on Equity	Rs Lakh		36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63
Total Fixed Cost	**Rs Lakh**		**126.36**	**122.84**	**119.32**	**115.81**	**112.32**	**108.83**	**105.35**	**101.88**	**98.42**	**94.97**	**98.89**	**95.46**	**68.46**	**68.87**	**69.29**	**69.73**	**70.17**	**70.63**	**71.11**	**71.60**	**72.10**	**72.62**	**73.15**	**73.70**	**74.27**
Per unit Fixed Cost	**Rs/kWh**		**5.77**	**5.61**	**5.45**	**5.29**	**5.13**	**4.97**	**4.81**	**4.65**	**4.49**	**4.34**	**4.52**	**4.36**	**3.13**	**3.14**	**3.16**	**3.18**	**3.20**	**3.23**	**3.25**	**3.27**	**3.29**	**3.32**	**3.34**	**3.37**	**3.39**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levellised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh	**0.54**	0.43	0.44	0.45	0.47	0.48	0.49	0.51	0.52	0.54	0.56	0.57	0.59	0.61	0.63	0.64	0.66	0.68	0.70	0.72	0.75	0.77	0.79	0.81	0.84	0.86
Depreciation	Rs/kWh	**1.29**	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Int. on term loan	Rs/kWh	**0.92**	2.00	1.83	1.65	1.48	1.31	1.13	0.96	0.78	0.61	0.44	0.26	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	**0.11**	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12
RoE	Rs/kWh	**1.77**	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99
Total COG	**Rs/kWh**	**4.63**	**5.77**	**5.61**	**5.45**	**5.29**	**5.13**	**4.97**	**4.81**	**4.65**	**4.49**	**4.34**	**4.52**	**4.36**	**3.13**	**3.14**	**3.16**	**3.18**	**3.20**	**3.23**	**3.25**	**3.27**	**3.29**	**3.32**	**3.34**	**3.37**	**3.39**

Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Fixed Cost	4.63		101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29
Levellised Tariff	**4.63**	Rs/Unit																									

Determination of Additional Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	594.41

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	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100.0%	40.0%	24.0%	14.4%	8.6%	5.2%	3.1%	1.9%	1.1%	0.7%	0.4%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	356.65	95.11	57.06	34.24	20.54	12.33	7.40	4.44	2.66	1.60	0.96	0.58	0.35	0.21	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	325.26	63.72	25.68	2.85	-10.84	-19.06	-23.99	-26.95	-28.72	-29.79	-30.43	-30.81	-31.04	-31.18	-31.26	-31.31	-31.34	-1.40	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	112.57	22.05	8.89	0.99	-3.75	-6.60	-8.30	-9.33	-9.94	-10.31	-10.53	-10.66	-10.74	-10.79	-10.82	-10.84	-10.85	-0.48	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19
Per unit benefit	Rs/Unit	5.14	1.01	0.41	0.05	-0.17	-0.30	-0.38	-0.43	-0.45	-0.47	-0.48	-0.49	-0.49	-0.49	-0.49	-0.49	-0.50	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11

Levellised benefit	**0.42**	**Rs/Unit**

Annexure – 1C
(Wind Zone-3)

Form 1.1 Assumptions Parameters — **Wind Zone**

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	3
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	30.0%
			Useful Life	Years	25
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	594.41
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	416.09
			Total Equity Amout	Rs Lacs	178.32
		Debt Component			
			Loan Amount	Rs Lacs	416.09
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	178.32
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		22.82%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%
			Years for 5.83% rate		12
5	**Working Capital**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15.00%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	11.00%
6	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	8.83
		power plant (FY17-18)		Rs Lakh	9.36
		Total O & M Expenses Escalation		%	2.97%

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		9.36	9.64	9.93	10.22	10.53	10.84	11.16	11.49	11.83	12.18	12.55	12.92	13.30	13.70	14.10	14.52	14.95	15.40	15.86	16.33	16.81	17.31	17.82	18.35	18.90
Depreciation	Rs Lakh		34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16
Interest on term loan	Rs Lakh		43.86	40.05	36.23	32.42	28.61	24.79	20.98	17.16	13.35	9.54	5.72	1.91	0.00	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		2.21	2.22	2.23	2.25	2.26	2.27	2.28	2.29	2.31	2.32	2.33	2.35	2.36	2.38	2.39	2.41	2.42	2.44	2.46	2.48	2.50	2.51	2.53	2.55	2.57
Return on Equity	Rs Lakh		36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63
Total Fixed Cost	**Rs Lakh**		**126.36**	**122.84**	**119.32**	**115.81**	**112.32**	**108.83**	**105.35**	**101.88**	**98.42**	**94.97**	**98.89**	**95.46**	**68.46**	**68.87**	**69.29**	**69.73**	**70.17**	**70.63**	**71.11**	**71.60**	**72.10**	**72.62**	**73.15**	**73.70**	**74.27**
Per unit Fixed Cost	**Rs/kWh**		**4.81**	**4.67**	**4.54**	**4.41**	**4.27**	**4.14**	**4.01**	**3.88**	**3.74**	**3.61**	**3.76**	**3.63**	**2.60**	**2.62**	**2.64**	**2.65**	**2.67**	**2.69**	**2.71**	**2.72**	**2.74**	**2.76**	**2.78**	**2.80**	**2.83**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levellised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh	**0.45**	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.44	0.45	0.46	0.48	0.49	0.51	0.52	0.54	0.55	0.57	0.59	0.60	0.62	0.64	0.66	0.68	0.70	0.72
Depreciation	Rs/kWh	**1.07**	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Int. on term loan	Rs/kWh	**0.77**	1.67	1.52	1.38	1.23	1.09	0.94	0.80	0.65	0.51	0.36	0.22	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
Int. on working capital	Rs/kWh	**0.09**	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10
RoE	Rs/kWh	**1.47**	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	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
Total COG	**Rs/kWh**	**3.85**	**4.81**	**4.67**	**4.54**	**4.41**	**4.27**	**4.14**	**4.01**	**3.88**	**3.74**	**3.61**	**3.76**	**3.63**	**2.60**	**2.62**	**2.64**	**2.65**	**2.67**	**2.69**	**2.71**	**2.72**	**2.74**	**2.76**	**2.78**	**2.80**	**2.83**

Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Fixed Cost	3.85		101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29
Levellised Tariff	**3.85**	Rs/Unit																									

Determination of Additional Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	594.41

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	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100.0%	40.0%	24.0%	14.4%	8.6%	5.2%	3.1%	1.9%	1.1%	0.7%	0.4%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	356.65	95.11	57.06	34.24	20.54	12.33	7.40	4.44	2.66	1.60	0.96	0.58	0.35	0.21	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	325.26	63.72	25.68	2.85	-10.84	-19.06	-23.99	-26.95	-28.72	-29.79	-30.43	-30.81	-31.04	-31.18	-31.26	-31.31	-31.34	-1.40	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	112.57	22.05	8.89	0.99	-3.75	-6.60	-8.30	-9.33	-9.94	-10.31	-10.53	-10.66	-10.74	-10.79	-10.82	-10.84	-10.85	-0.48	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy 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
Per unit benefit	Rs/Unit	4.28	0.84	0.34	0.04	-0.14	-0.25	-0.32	-0.35	-0.38	-0.39	-0.40	-0.41	-0.41	-0.41	-0.41	-0.41	-0.41	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11

Levellised benefit	**0.35**	**Rs/Unit**

Annexure – 1D
(Wind Zone-4)

Form 1.1 Assumptions Parameters — **Wind Zone**

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	4
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	32.0%
			Useful Life	Years	25
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	594.41
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	416.09
			Total Equity Amout	Rs Lacs	178.32
		Debt Component			
			Loan Amount	Rs Lacs	416.09
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	178.32
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		22.82%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%
			Years for 5.83% rate		12
5	**Working Capital**				
		For Fixed Charges			
		O&M Charges		Months	1
		Maintenance Spare	(% of O&M exepenses)		15.00%
		Receivables for Debtors		Months	2
		For Variable Charges			
		Interest On Working Capital		%	11.00%
6	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	8.83
		power plant (FY17-18)		Rs Lakh	9.36
		Total O & M Expenses Escalation		%	2.97%

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		2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80

Fixed Cost	Unit	Year--->	1	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		9.36	9.64	9.93	10.22	10.53	10.84	11.16	11.49	11.83	12.18	12.55	12.92	13.30	13.70	14.10	14.52	14.95	15.40	15.86	16.33	16.81	17.31	17.82	18.35	18.90
Depreciation	Rs Lakh		34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	34.65	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16
Interest on term loan	Rs Lakh		43.86	40.05	36.23	32.42	28.61	24.79	20.98	17.16	13.35	9.54	5.72	1.91	0.00	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		2.21	2.22	2.23	2.25	2.26	2.27	2.28	2.29	2.31	2.32	2.33	2.35	2.36	2.38	2.39	2.41	2.42	2.44	2.46	2.48	2.50	2.51	2.53	2.55	2.57
Return on Equity	Rs Lakh		36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	36.27	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63	43.63
Total Fixed Cost	**Rs Lakh**		**126.36**	**122.84**	**119.32**	**115.81**	**112.32**	**108.83**	**105.35**	**101.88**	**98.42**	**94.97**	**98.89**	**95.46**	**68.46**	**68.87**	**69.29**	**69.73**	**70.17**	**70.63**	**71.11**	**71.60**	**72.10**	**72.62**	**73.15**	**73.70**	**74.27**
Per unit Fixed Cost	**Rs/kWh**		**4.51**	**4.38**	**4.26**	**4.13**	**4.01**	**3.88**	**3.76**	**3.63**	**3.51**	**3.39**	**3.53**	**3.41**	**2.44**	**2.46**	**2.47**	**2.49**	**2.50**	**2.52**	**2.54**	**2.55**	**2.57**	**2.59**	**2.61**	**2.63**	**2.65**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levellised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh	**0.42**	0.33	0.34	0.35	0.36	0.38	0.39	0.40	0.41	0.42	0.43	0.45	0.46	0.47	0.49	0.50	0.52	0.53	0.55	0.57	0.58	0.60	0.62	0.64	0.65	0.67
Depreciation	Rs/kWh	**1.01**	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Int. on term loan	Rs/kWh	**0.72**	1.56	1.43	1.29	1.16	1.02	0.88	0.75	0.61	0.48	0.34	0.20	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
Int. on working capital	Rs/kWh	**0.08**	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
RoE	Rs/kWh	**1.38**	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
Total COG	**Rs/kWh**	**3.61**	**4.51**	**4.38**	**4.26**	**4.13**	**4.01**	**3.88**	**3.76**	**3.63**	**3.51**	**3.39**	**3.53**	**3.41**	**2.44**	**2.46**	**2.47**	**2.49**	**2.50**	**2.52**	**2.54**	**2.55**	**2.57**	**2.59**	**2.61**	**2.63**	**2.65**

Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Fixed Cost	3.61		101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29	101.29
Levellised Tariff	**3.61**	Rs/Unit																									

Determination of Additional Depreciation for Wind Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	594.41

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	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	31.38	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100.0%	40.0%	24.0%	14.4%	8.6%	5.2%	3.1%	1.9%	1.1%	0.7%	0.4%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	356.65	95.11	57.06	34.24	20.54	12.33	7.40	4.44	2.66	1.60	0.96	0.58	0.35	0.21	0.12	0.07	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	325.26	63.72	25.68	2.85	-10.84	-19.06	-23.99	-26.95	-28.72	-29.79	-30.43	-30.81	-31.04	-31.18	-31.26	-31.31	-31.34	-1.40	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	112.57	22.05	8.89	0.99	-3.75	-6.60	-8.30	-9.33	-9.94	-10.31	-10.53	-10.66	-10.74	-10.79	-10.82	-10.84	-10.85	-0.48	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Energy generation	MU	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Per unit benefit	Rs/Unit	4.02	0.79	0.32	0.04	-0.13	-0.24	-0.30	-0.33	-0.35	-0.37	-0.38	-0.38	-0.38	-0.38	-0.39	-0.39	-0.39	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discounting Factor		1.00	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11

Levellised benefit	**0.33**	**Rs/Unit**

Annexure – 2A
(SHP above 1 MW and up to and including 5 MW)

Form 1.1 Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Capacity <=5 MW
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	30%
			Auxilliary Consumption		1%
			Useful Life	Years	35
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	598.90
3	**Sources of Fund**				
			Tariff Period	Years	35
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	419.23
			Total Equity Amout	Rs Lacs	179.67
		Debt Component			
			Loan Amount	Rs Lacs	419.23
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	179.67
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		23.29%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	0.87%
			Years for 5.83% rate		12
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			0
		Interest On Working Capital		%	11.00%
6	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	21.79
		power plant (FY17-18)		Rs Lakh	23.10
		Total O & M Expenses Escalation		%	2.97%

Form 1.2 Form Template for (Small Hydro 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	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		23.10	23.79	24.49	25.22	25.97	26.74	27.54	28.35	29.20	30.06	30.96	31.88	32.82	33.80	34.80	35.83	36.90	37.99	39.12	40.28	41.48	42.71	43.98	45.29	46.63	48.02	49.44	50.91	52.42	53.98	55.59	57.24	58.94	60.69	62.49
Depreciation	Rs Lakh		34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22
Interest on term loan	Rs Lakh		44.19	40.35	36.51	32.67	28.82	24.98	21.14	17.29	13.45	9.61	5.76	1.92	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		2.76	2.78	2.80	2.81	2.83	2.85	2.87	2.90	2.92	2.94	2.96	2.99	3.01	3.03	3.06	3.09	3.11	3.14	3.17	3.20	3.23	3.26	3.30	3.33	3.36	3.40	3.44	3.47	3.51	3.55	3.59	3.64	3.68	3.73	3.77
Return on Equity	Rs Lakh		36.55	36.55	36.55	36.55	36.55	36.55	36.55	36.55	36.55	36.55	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96	43.96
Total Fixed Cost	**Rs Lakh**		**141.52**	**138.38**	**135.26**	**132.16**	**129.09**	**126.04**	**123.01**	**120.01**	**117.03**	**114.07**	**118.56**	**115.66**	**85.01**	**86.01**	**87.04**	**88.10**	**89.19**	**90.32**	**91.47**	**92.67**	**93.89**	**95.16**	**96.46**	**97.80**	**99.18**	**100.60**	**102.06**	**103.57**	**105.12**	**106.71**	**108.36**	**110.05**	**111.80**	**113.59**	**115.44**
Per unit Fixed Cost	**Rs/kWh**		**5.44**	**5.32**	**5.20**	**5.08**	**4.96**	**4.84**	**4.73**	**4.61**	**4.50**	**4.38**	**4.56**	**4.45**	**3.27**	**3.31**	**3.35**	**3.39**	**3.43**	**3.47**	**3.52**	**3.56**	**3.61**	**3.66**	**3.71**	**3.76**	**3.81**	**3.87**	**3.92**	**3.98**	**4.04**	**4.10**	**4.16**	**4.23**	**4.30**	**4.37**	**4.44**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levelised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh	**1.18**	0.89	0.91	0.94	0.97	1.00	1.03	1.06	1.09	1.12	1.16	1.19	1.23	1.26	1.30	1.34	1.38	1.42	1.46	1.50	1.55	1.59	1.64	1.69	1.74	1.79	1.85	1.90	1.96	2.02	2.07	2.14	2.20	2.27	2.33	2.40
Depreciation	Rs/kWh	**1.00**	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Int. on term loan	Rs/kWh	**0.74**	1.70	1.55	1.40	1.26	1.11	0.96	0.81	0.66	0.52	0.37	0.22	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	**0.11**	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.14
RoE	Rs/kWh	**1.51**	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69
Total COG	**Rs/kWh**	**4.54**	**5.44**	**5.32**	**5.20**	**5.08**	**4.96**	**4.84**	**4.73**	**4.61**	**4.50**	**4.38**	**4.56**	**4.45**	**3.27**	**3.31**	**3.35**	**3.39**	**3.43**	**3.47**	**3.52**	**3.56**	**3.61**	**3.66**	**3.71**	**3.76**	**3.81**	**3.87**	**3.92**	**3.98**	**4.04**	**4.10**	**4.16**	**4.23**	**4.30**	**4.37**	**4.44**

Levellised Tariff	Unit	Year--->	1	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
Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.05	0.05	0.05	0.04
Fixed Cost			118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23	118.23
Levellised Tariff	**4.54**	Rs/Unit																																			

Determination of Additional Depreciation for Small Hydro Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	598.90

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	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	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	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	31.62	1.44	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

Accelerated Depreciation																																				
Opening	%	100%	40%	24%	14%	9%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	359.34	95.82	57.49	34.50	20.70	12.42	7.45	4.47	2.68	1.61	0.97	0.58	0.35	0.21	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Net Depreciation Benefit	Rs Lakh	327.72	64.20	25.87	2.87	-10.92	-19.20	-24.17	-27.15	-28.94	-30.01	-30.66	-31.04	-31.27	-31.41	-31.50	-31.55	-31.58	-1.41	0.02	0.01	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
Tax Benefit	Rs Lakh	113.42	22.22	8.95	0.99	-3.78	-6.65	-8.37	-9.40	-10.02	-10.39	-10.61	-10.74	-10.82	-10.87	-10.90	-10.92	-10.93	-0.49	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
Energy 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
Per unit benefit	Rs/Unit	4.36	0.85	0.34	0.04	-0.15	-0.26	-0.32	-0.36	-0.38	-0.40	-0.41	-0.41	-0.42	-0.42	-0.42	-0.42	-0.42	-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
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.04

Levellised benefit	**0.33**	**Rs/Unit**

Annexure – 2B
(SHP above 5 MW and upto and including 25 MW)

Form 1.1 Assumptions Parameters

Capacity

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	>5 up to 25 MW
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	30%
			Auxilliary Consumption		1%
			Useful Life	Years	35
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	544.90
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	381.43
			Total Equity Amout	Rs Lacs	163.47
		Debt Component			
			Loan Amount	Rs Lacs	381.43
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	163.47
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		23.29%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	0.87%
			Years for 5.83% rate		12
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			0
		Interest On Working Capital		%	11.00%
6	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	15.42
		power plant (FY17-18)		Rs Lakh	16.35
		Total O & M Expenses Escalation		%	2.97%

Form 1.2 Form Template for (Small Hydro 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	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		16.35	16.83	17.33	17.85	18.38	18.92	19.49	20.06	20.66	21.27	21.91	22.56	23.23	23.92	24.63	25.36	26.11	26.89	27.69	28.51	29.35	30.23	31.12	32.05	33.00	33.98	34.99	36.03	37.10	38.20	39.33	40.50	41.71	42.94	44.22
Depreciation	Rs Lakh		31.77	31.77	31.77	31.77	31.77	31.77	31.77	31.77	31.77	31.77	31.77	31.77	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75
Interest on term loan	Rs Lakh		40.21	36.71	33.22	29.72	26.22	22.73	19.23	15.73	12.24	8.74	5.24	1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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		2.27	2.28	2.30	2.31	2.32	2.34	2.35	2.37	2.38	2.40	2.42	2.43	2.45	2.47	2.48	2.50	2.52	2.54	2.56	2.58	2.61	2.63	2.65	2.68	2.70	2.72	2.75	2.78	2.80	2.83	2.86	2.89	2.92	2.95	2.99
Return on Equity	Rs Lakh		33.25	33.25	33.25	33.25	33.25	33.25	33.25	33.25	33.25	33.25	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Total Fixed Cost	**Rs Lakh**		**123.85**	**120.85**	**117.87**	**114.90**	**111.94**	**109.01**	**106.09**	**103.19**	**100.30**	**97.43**	**101.33**	**98.50**	**70.42**	**71.13**	**71.86**	**72.61**	**73.38**	**74.17**	**74.99**	**75.84**	**76.71**	**77.60**	**78.52**	**79.47**	**80.44**	**81.45**	**82.48**	**83.55**	**84.65**	**85.78**	**86.94**	**88.14**	**89.37**	**90.64**	**91.95**
Per unit Fixed Cost	**Rs/kWh**		**4.76**	**4.64**	**4.53**	**4.42**	**4.30**	**4.19**	**4.08**	**3.97**	**3.86**	**3.74**	**3.89**	**3.79**	**2.71**	**2.73**	**2.76**	**2.79**	**2.82**	**2.85**	**2.88**	**2.91**	**2.95**	**2.98**	**3.02**	**3.05**	**3.09**	**3.13**	**3.17**	**3.21**	**3.25**	**3.30**	**3.34**	**3.39**	**3.44**	**3.48**	**3.53**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levelised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh	**0.84**	0.63	0.65	0.67	0.69	0.71	0.73	0.75	0.77	0.79	0.82	0.84	0.87	0.89	0.92	0.95	0.97	1.00	1.03	1.06	1.10	1.13	1.16	1.20	1.23	1.27	1.31	1.34	1.38	1.43	1.47	1.51	1.56	1.60	1.65	1.70
Depreciation	Rs/kWh	**0.91**	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
Int. on term loan	Rs/kWh	**0.67**	1.55	1.41	1.28	1.14	1.01	0.87	0.74	0.60	0.47	0.34	0.20	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	**0.09**	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
RoE	Rs/kWh	**1.37**	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
Total COG	**Rs/kWh**	**3.88**	**4.76**	**4.64**	**4.53**	**4.42**	**4.30**	**4.19**	**4.08**	**3.97**	**3.86**	**3.74**	**3.89**	**3.79**	**2.71**	**2.73**	**2.76**	**2.79**	**2.82**	**2.85**	**2.88**	**2.91**	**2.95**	**2.98**	**3.02**	**3.05**	**3.09**	**3.13**	**3.17**	**3.21**	**3.25**	**3.30**	**3.34**	**3.39**	**3.44**	**3.48**	**3.53**

Levellised Tariff	Unit	Year--->	1	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
Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.07	0.06	0.05	0.05	0.05	0.04
Fixed Cost			101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06	101.06
Levellised Tariff	**3.88**	Rs/Unit																																			

Determination of Additional Depreciation for Small Hydro Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	544.90

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	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	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	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	28.77	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																																				
Opening	%	100%	40%	24%	14%	9%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	326.94	87.18	52.31	31.39	18.83	11.30	6.78	4.07	2.44	1.46	0.88	0.53	0.32	0.19	0.11	0.07	0.04	0.02	0.01	0.01	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
Net Depreciation Benefit	Rs Lakh	298.17	58.41	23.54	2.62	-9.94	-17.47	-21.99	-24.70	-26.33	-27.31	-27.89	-28.24	-28.45	-28.58	-28.66	-28.70	-28.73	-1.28	0.01	0.01	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
Tax Benefit	Rs Lakh	103.19	20.22	8.15	0.91	-3.44	-6.05	-7.61	-8.55	-9.11	-9.45	-9.65	-9.77	-9.85	-9.89	-9.92	-9.93	-9.94	-0.44	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
Energy 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
Per unit benefit	Rs/Unit	3.97	0.78	0.31	0.03	-0.13	-0.23	-0.29	-0.33	-0.35	-0.36	-0.37	-0.38	-0.38	-0.38	-0.38	-0.38	-0.38	-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
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.04

Levellised benefit	**0.30**	**Rs/Unit**

Annexure – 3
(Biomass Power Projects)

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 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	20.00
			Tariff Period	Years	13
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	488.08
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	341.66
			Total Equity Amout	Rs Lacs	146.42
		Debt Component			
			Loan Amount	Rs Lacs	341.66
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	146.42
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10.00
			Return on Equity after 10 years		24.47%
			Weighted average of ROE		22.40%
			Discount Rate (equiv. to WACC)		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.61%
			MAT Rate (for first 10 years)	%	21.34%
		Depreciation			
			Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	2.51%
			Years for 5.83% depreciation rate		12.00
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		%	11.00%
6	**Fuel Related Assumptions**				
		Heat Rate	During/After Stabilisation period	Kcal/kwh	4200
		Biomass			
			CERC Biomass Price (FY16-17)	Rs/T	3269
			GCV - Biomass	Kcal/kg	3611
			Derived Biomass Price (FY2016-17) for Maharashtra		3807.42
			Price (FY 17-18)	Rs/T	3997.79
7	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	26.30
		power plant (FY 2017-18)		Rs Lakh	27.88
		Total O & M Expenses Escalation		%	2.97%

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

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		253.13	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86	325.86
Per unit Var Cost	**Rs/kWh**		**4.94**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**	**5.17**

Fixed Cost	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		27.88	28.71	29.56	30.44	31.35	32.28	33.24	34.22	35.24	36.29	37.36	38.47	39.62	40.79	42.00	43.25	44.54	45.86	47.22	48.62
Depreciation	Rs Lakh		28.46	28.46	28.46	28.46	28.46	28.46	28.46	28.46	28.46	28.46	28.46	28.46	19.34	19.34	19.34	19.34	19.34	19.34	19.34	19.34
Interest on term loan	Rs Lakh		36.02	32.88	29.75	26.62	23.49	20.36	17.23	14.09	10.96	7.83	4.70	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		15.04	18.90	18.92	18.94	18.96	18.99	19.01	19.04	19.06	19.09	19.12	19.15	19.18	19.21	19.24	19.27	19.30	19.34	19.37	19.41
Return on Equity	Rs Lakh		29.78	29.78	29.78	29.78	29.78	29.78	29.78	29.78	29.78	29.78	35.83	35.83	35.83	35.83	35.83	35.83	35.83	35.83	35.83	35.83
Total Fixed Cost	**Rs Lakh**		**137.18**	**138.73**	**136.48**	**134.24**	**132.04**	**129.86**	**127.71**	**125.59**	**123.51**	**121.45**	**125.46**	**123.47**	**113.96**	**115.17**	**116.41**	**117.69**	**119.01**	**120.36**	**121.76**	**123.20**
Per unit Fixed Cost	**Rs/kWh**		**2.68**	**2.20**	**2.16**	**2.13**	**2.09**	**2.06**	**2.02**	**1.99**	**1.96**	**1.93**	**1.99**	**1.96**	**1.81**	**1.83**	**1.85**	**1.87**	**1.89**	**1.91**	**1.93**	**1.95**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levellised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	**5.14**	4.94	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17
O&M expn	Rs/kWh	**0.55**	0.54	0.46	0.47	0.48	0.50	0.51	0.53	0.54	0.56	0.58	0.59	0.61	0.63	0.65	0.67	0.69	0.71	0.73	0.75	0.77
Depreciation	Rs/kWh	**0.43**	0.56	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Int. on term loan	Rs/kWh	**0.29**	0.70	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	**0.30**	0.29	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.31	0.31	0.31	0.31	0.31	0.31
RoE	Rs/kWh	**0.51**	0.58	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Total COG	**Rs/kWh**	**7.24**	**7.62**	**7.37**	**7.33**	**7.29**	**7.26**	**7.23**	**7.19**	**7.16**	**7.12**	**7.09**	**7.16**	**7.12**	**6.97**	**6.99**	**7.01**	**7.03**	**7.05**	**7.07**	**7.10**	**7.12**

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	0.910	0.829	0.755	0.687	0.626	0.570	0.519	0.472	0.430	0.391	0.356	0.324	0.295	0.269	0.245	0.223	0.203	0.185	0.168
Variable Cost			263.4	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2	324.2
Fixed Cost			107.1	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.8

Levellised Tariff (Variable)	5.14
Levellised Tariff (Fixed)	2.09
Levellised Tariff (Rs/Unit)	**7.23**

Determination of Accelerated Depreciation for Biomass Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	488.1

Years ---------->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%
Book Depreciation	Rs Lakh	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	25.77	1.17	0.00	0.00
Accelerated Depreciation																					
Opening	%	100%	40%	24%	14%	9%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	60%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%
Closing	%	40%	24%	14.40%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	292.85	78.09	46.86	28.11	16.87	10.12	6.07	3.64	2.19	1.31	0.79	0.47	0.28	0.17	0.10	0.06	0.04	0.02	0.01	0.01
Net Depreciation Benefit	Rs Lakh	267.08	52.32	21.09	2.34	-8.90	-15.65	-19.70	-22.13	-23.58	-24.46	-24.98	-25.30	-25.49	-25.60	-25.67	-25.71	-25.73	-1.15	0.01	0.01
Tax Benefit	Rs Lakh	92.43	18.11	7.30	0.81	-3.08	-5.42	-6.82	-7.66	-8.16	-8.46	-8.65	-8.76	-8.82	-8.86	-8.88	-8.90	-8.91	-0.40	0.00	0.00
Net Energy 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
Per unit benefit	Rs/Unit	1.80	0.29	0.12	0.01	-0.05	-0.09	-0.11	-0.12	-0.13	-0.13	-0.14	-0.14	-0.14	-0.14	-0.14	-0.14	-0.14	-0.01	0.00	0.00
Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18

Levellised Benefit	**0.16**	**Rs/ Unit**

Annexure – 4
(Co-gen. Power Projects)

2.1 Form Template for Cogen Power Projects

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Assumptions
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Auxillary Consumption during stablisation	%	8.5%
			Auxillary Consumption after stabilisation	%	8.5%
			PLF(Stablization for 6 months)	%	60%
			PLF(during first year after Stablization)	%	60%
			PLF(second year onwards)	%	60%
			Useful Life	Years	20.00
			Tariff Period	Years	13
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	482.85
3	**Financial Assumptions**				
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	337.99
			Total Equity Amout	Rs Lacs	144.85
		Debt Component			
			Loan Amount	Rs Lacs	337.99
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.0%
		Equity Component			
			Equity amount	Rs Lacs	144.85
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10.00
			Return on Equity after 10 years		24.47%
			Weighted average of ROE		21.29%
			Discount Rate (equiv. to WACC)		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.61%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate(power plant)	%	5.83%
			Depreciation Rate 13th year onwards	%	20.04%
			Years for 5.83%% depreciation rate		12.00
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		%	11.00%
6	**Fuel Related Assumptions**				
		Heat Rate	After Stabilisation period	Kcal/kwh	3600
		Biomass			
			CERC Bagasse price (FY16-17)	Rs/T	2221.93
			GCV - Bagasse	Kcal/kg	2250
			Bagasse Price Escalation Factor		5%
			Bagasse (FY 17-18)	Rs/T	2333.03
7	**Operation & Maintenance**				
		power plant (FY15-16)		Rs Lakh	17.31
		power plant (FY 2017-18)			18.35
		Total O & M Expenses Escalation		%	2.97%

2.2 Form Template for (Cogen and Bagasse based 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		196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20	196.20
Per unit Var Cost	**Rs/kWh**		**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**	**4.08**

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		18.35	18.90	19.46	20.04	20.63	21.25	21.88	22.53	23.20	23.89	24.60	25.33	26.08	26.85	27.65	28.47	29.32	30.19	31.08	32.01
Depreciation	Rs Lakh		28.15	28.15	28.15	28.15	28.15	28.15	28.15	28.15	28.15	28.15	28.15	28.15	153.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on term loan	Rs Lakh		35.63	32.53	29.43	26.34	23.24	20.14	17.04	13.94	10.84	7.75	4.65	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		13.33	13.34	13.35	13.37	13.38	13.40	13.42	13.43	13.45	13.47	13.49	13.50	13.52	13.54	13.56	13.59	13.61	13.63	13.65	13.68
Return on Equity	Rs Lakh		29.47	29.47	29.47	29.47	29.47	29.47	29.47	29.47	29.47	29.47	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44	35.44
Total Fixed Cost	**Rs Lakh**		**124.93**	**122.39**	**119.86**	**117.36**	**114.87**	**112.40**	**109.95**	**107.52**	**105.11**	**102.71**	**106.32**	**103.97**	**228.11**	**75.84**	**76.66**	**77.50**	**78.37**	**79.26**	**80.18**	**81.13**
Per unit Fixed Cost	**Rs/kWh**		**2.60**	**2.54**	**2.49**	**2.44**	**2.39**	**2.34**	**2.29**	**2.24**	**2.19**	**2.14**	**2.21**	**2.16**	**4.74**	**1.58**	**1.59**	**1.61**	**1.63**	**1.65**	**1.67**	**1.69**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levelised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Variable COG	Rs/kWh	**4.08**	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
O&M expn	Rs/kWh	**0.47**	0.38	0.39	0.40	0.42	0.43	0.44	0.45	0.47	0.48	0.50	0.51	0.53	0.54	0.56	0.57	0.59	0.61	0.63	0.65	0.67
Depreciation	Rs/kWh	**0.58**	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on term loan	Rs/kWh	**0.36**	0.74	0.68	0.61	0.55	0.48	0.42	0.35	0.29	0.23	0.16	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	**0.28**	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
RoE	Rs/kWh	**0.65**	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Total COG	**Rs/kWh**	**6.42**	**6.68**	**6.62**	**6.57**	**6.52**	**6.47**	**6.42**	**6.37**	**6.32**	**6.27**	**6.22**	**6.29**	**6.24**	**8.82**	**5.66**	**5.67**	**5.69**	**5.71**	**5.73**	**5.75**	**5.77**

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	0.910	0.829	0.755	0.687	0.626	0.570	0.519	0.472	0.430	0.391	0.356	0.324	0.295	0.269	0.245	0.223	0.203	0.185	0.168
Variable Cost			196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2
Fixed Cost			112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5

Levellised Tariff (Variable)	4.08
Levellised Tariff (Fixed)	2.34
Levellised Tariff (Rs/Unit)	**6.42**

Determination of Accelerated Depreciation for Cogen and Bagasse based Power Project

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.61%
Capital Cost	482.8

Years ---------->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Book Depreciation	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%
Book Depreciation	Rs Lakh	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	25.49	1.16	0.00	0.00
Accelerated Depreciation																					
Opening	%	100%	40%	24%	14%	9%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	60%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%
Closing	%	40%	24%	14.40%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	289.71	77.26	46.35	27.81	16.69	10.01	6.01	3.60	2.16	1.30	0.78	0.47	0.28	0.17	0.10	0.06	0.04	0.02	0.01	0.01
Net Depreciation Benefit	Rs Lakh	264.21	51.76	20.86	2.32	-8.81	-15.48	-19.49	-21.89	-23.33	-24.20	-24.72	-25.03	-25.21	-25.33	-25.39	-25.43	-25.46	-1.14	0.01	0.01
Tax Benefit	Rs Lakh	91.44	17.91	7.22	0.80	-3.05	-5.36	-6.74	-7.58	-8.07	-8.37	-8.55	-8.66	-8.73	-8.76	-8.79	-8.80	-8.81	-0.39	0.00	0.00
Net Energy 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
Per unit benefit	Rs/Unit	1.90	0.37	0.15	0.02	-0.06	-0.11	-0.14	-0.16	-0.17	-0.17	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.01	0.00	0.00
Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18

Levellised benefit	**0.16**	**(Rs/kWh)**

Annexure – 5A
(Solar PV)

Form 1.1 Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Capacity <=5 MW
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	19%
			Auxilliary Consumption		0%
			Useful Life	Years	25
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	424.74
3	**Sources of Fund**				
			Tariff Period	Years	13
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	297.32
			Total Equity Amout	Rs Lacs	127.42
		Debt Component			
			Loan Amount	Rs Lacs	297.32
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	127.42
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		22.82%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%
			Years for 5.83% rate		12
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		%	11.00%
6	**Operation & Maintenance**				
		Operation & Maintenance (2015-16)			
		Operation & Maintenance (2016-17)			
		Operation & Maintenance (2017-18)		Rs Lakh	13.78
		Total O & M Expenses Escalation		%	2.97%

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

Units Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	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		1.66	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		13.78	14.19	14.61	15.05	15.50	15.96	16.43	16.92	17.42	17.94	18.47	19.02	19.58	20.17	20.76	21.38	22.02	22.67	23.34	24.04	24.75	25.49	26.24	27.02	27.82
Depreciation	Rs Lakh		24.76	24.76	24.76	24.76	24.76	24.76	24.76	24.76	24.76	24.76	24.76	24.76	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55
Interest on term loan	Rs Lakh		31.34	28.62	25.89	23.17	20.44	17.72	14.99	12.26	9.54	6.81	4.09	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs Lakh		1.85	1.86	1.87	1.88	1.90	1.91	1.92	1.93	1.94	1.96	1.97	1.99	2.00	2.02	2.03	2.05	2.06	2.08	2.10	2.11	2.13	2.15	2.17	2.19	2.21
Return on Equity	Rs Lakh		25.92	25.92	25.92	25.92	25.92	25.92	25.92	25.92	25.92	25.92	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18	31.18
Total Fixed Cost	**Rs Lakh**		**97.66**	**95.35**	**93.06**	**90.78**	**88.51**	**86.26**	**84.02**	**81.80**	**79.59**	**77.39**	**80.47**	**78.31**	**59.31**	**59.91**	**60.52**	**61.15**	**61.80**	**62.47**	**63.16**	**63.88**	**64.61**	**65.36**	**66.14**	**66.94**	**67.76**
Per unit Fixed Cost	**Rs/kWh**		**5.87**	**5.73**	**5.59**	**5.45**	**5.32**	**5.18**	**5.05**	**4.91**	**4.78**	**4.65**	**4.83**	**4.70**	**3.56**	**3.60**	**3.64**	**3.67**	**3.71**	**3.75**	**3.80**	**3.84**	**3.88**	**3.93**	**3.97**	**4.02**	**4.07**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levelised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh	**1.05**	0.83	0.85	0.88	0.90	0.93	0.96	0.99	1.02	1.05	1.08	1.11	1.14	1.18	1.21	1.25	1.28	1.32	1.36	1.40	1.44	1.49	1.53	1.58	1.62	1.67
Depreciation	Rs/kWh	**1.21**	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Int. on term loan	Rs/kWh	**0.87**	1.88	1.72	1.56	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
Int. on working capital	Rs/kWh	**0.12**	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13
RoE	Rs/kWh	**1.66**	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87
Total COG	**Rs/kWh**	**4.91**	**5.87**	**5.73**	**5.59**	**5.45**	**5.32**	**5.18**	**5.05**	**4.91**	**4.78**	**4.65**	**4.83**	**4.70**	**3.56**	**3.60**	**3.64**	**3.67**	**3.71**	**3.75**	**3.80**	**3.84**	**3.88**	**3.93**	**3.97**	**4.02**	**4.07**

Levellised Tariff	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Fixed Cost			81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68	81.68
Levellised Tariff	**4.91**	**Rs/Unit**																									

Determination of Additional Depreciation for Solar PV Power Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.608%
Capital Cost	424.74

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	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	22.43	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	40%	24%	14%	9%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	254.84	67.96	40.78	24.47	14.68	8.81	5.28	3.17	1.90	1.14	0.68	0.41	0.25	0.15	0.09	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	232.42	45.53	18.35	2.04	-7.75	-13.62	-17.14	-19.26	-20.52	-21.28	-21.74	-22.02	-22.18	-22.28	-22.34	-22.37	-22.39	-1.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Tax Benefit	Rs Lakh	80.44	15.76	6.35	0.71	-2.68	-4.71	-5.93	-6.66	-7.10	-7.37	-7.52	-7.62	-7.68	-7.71	-7.73	-7.74	-7.75	-0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy 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
Per unit benefit	Rs/Unit	4.83	0.95	0.38	0.04	-0.16	-0.28	-0.36	-0.40	-0.43	-0.44	-0.45	-0.46	-0.46	-0.46	-0.46	-0.47	-0.47	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11

Levellised benefit	**0.39**	**Rs/Unit**

Annexure – 5B
(Solar Thermal Projects)

Form 1.1 Assumptions Parameters

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Capacity <=5 MW
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	1
			Capacity Utilization Factor	%	23%
			Auxilliary Consumption		10%
			Useful Life	Years	25
2	**Project Cost**				
		Capital Cost/MW	Power Plant Cost	Rs Lacs/MW	1,200.00
3	**Sources of Fund**				
			Tariff Period	Years	25
		Debt: Equity			
			Debt	%	70%
			Equity	%	30%
			Total Debt Amount	Rs Lacs	840.00
			Total Equity Amout	Rs Lacs	360.00
		Debt Component			
			Loan Amount	Rs Lacs	840.00
			Moratorium Period	years	0
			Repayment Period(incld Moratorium)	years	12
			Interest Rate	%	11.00%
		Equity Component			
			Equity amount	Rs Lacs	360.00
			Return on Equity for first 10 years	% p.a	20.34%
			RoE Period	Year	10
			Return on Equity 11th year onwards	% p.a	24.47%
			Weighted average of ROE		22.82%
			Discount Rate		9.84%
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	34.608%
			MAT Rate (for first 10 years)	%	21.342%
		Depreciation			
			Depreciation Rate for first 12 years	%	5.83%
			Depreciation Rate 13th year onwards	%	1.54%
			Years for 5.83% rate		12
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		%	11.00%
6	**Operation & Maintenance**				
		Operation & Maintenance (2015-16)			
		Operation & Maintenance (2016-17)			
		Operation & Maintenance (2017-18)		Rs Lakh	15.90
		Total O & M Expenses Escalation		%	2.97%

Form 1.2 Form Template for (Solar Thermal Projects of Capacity -) : Determination of Tariff Component

Units Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	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		15.90	16.38	16.86	17.36	17.88	18.41	18.96	19.52	20.10	20.70	21.31	21.94	22.60	23.27	23.96	24.67	25.40	26.16	26.93	27.73	28.56	29.41	30.28	31.18	32.10
Depreciation	Rs Lakh		69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	69.96	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
Interest on term loan	Rs Lakh		88.55	80.85	73.15	65.45	57.75	50.05	42.35	34.65	26.95	19.25	11.55	3.85	0.00	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		4.08	4.09	4.10	4.12	4.13	4.14	4.16	4.17	4.19	4.20	4.22	4.23	4.25	4.27	4.29	4.30	4.32	4.34	4.36	4.38	4.40	4.43	4.45	4.47	4.49
Return on Equity	Rs Lakh		73.23	73.23	73.23	73.23	73.23	73.23	73.23	73.23	73.23	73.23	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08	88.08
Total Fixed Cost	**Rs Lakh**		**251.72**	**244.51**	**237.30**	**230.12**	**222.95**	**215.79**	**208.65**	**201.53**	**194.42**	**187.34**	**195.12**	**188.07**	**133.43**	**134.12**	**134.83**	**135.56**	**136.31**	**137.08**	**137.88**	**138.70**	**139.54**	**140.41**	**141.31**	**142.23**	**143.18**
Per unit Fixed Cost	**Rs/kWh**		**13.88**	**13.48**	**13.09**	**12.69**	**12.29**	**11.90**	**11.51**	**11.11**	**10.72**	**10.33**	**10.76**	**10.37**	**7.36**	**7.40**	**7.44**	**7.48**	**7.52**	**7.56**	**7.60**	**7.65**	**7.70**	**7.74**	**7.79**	**7.84**	**7.90**

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Levelised	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M expn	Rs/kWh	**1.11**	0.88	0.90	0.93	0.96	0.99	1.02	1.05	1.08	1.11	1.14	1.18	1.21	1.25	1.28	1.32	1.36	1.40	1.44	1.49	1.53	1.57	1.62	1.67	1.72	1.77
Depreciation	Rs/kWh	**3.14**	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	3.86	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Int. on term loan	Rs/kWh	**2.25**	4.88	4.46	4.03	3.61	3.18	2.76	2.34	1.91	1.49	1.06	0.64	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Int. on working capital	Rs/kWh	**0.23**	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.25	0.25	0.25
RoE	Rs/kWh	**4.31**	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86	4.86
Total COG	**Rs/kWh**	**11.04**	**13.88**	**13.48**	**13.09**	**12.69**	**12.29**	**11.90**	**11.51**	**11.11**	**10.72**	**10.33**	**10.76**	**10.37**	**7.36**	**7.40**	**7.44**	**7.48**	**7.52**	**7.56**	**7.60**	**7.65**	**7.70**	**7.74**	**7.79**	**7.84**	**7.90**

Discount Factor			1	0.91	0.83	0.75	0.69	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.32	0.30	0.27	0.24	0.22	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.11
Fixed Cost			200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22	200.22
Levellised Tariff	**11.04**	Rs/Unit																									

Determination of Additional Depreciation for Solar Thermal Projects

Depreciation amount	90%
Book Depreciation rate	5.28%
Tax Depreciation rate	40%
Additional Depreciation	20%
Income Tax (MAT)	21.342%
Income Tax (Normal Rates)	34.608%
Capital Cost	1200.00

Years ---------->	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Book Depreciation	%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Book Depreciation	Rs Lakh	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	63.36	2.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accelerated Depreciation																										
Opening	%	100%	40%	24%	14%	9%	5%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Allowed during the year	%	60.00%	16.00%	9.60%	5.76%	3.46%	2.07%	1.24%	0.75%	0.45%	0.27%	0.16%	0.10%	0.06%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Closing	%	40.0%	24.0%	14.4%	8.64%	5.18%	3.11%	1.87%	1.12%	0.67%	0.40%	0.24%	0.15%	0.09%	0.05%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accelrated Deprn.	Rs Lakh	720.00	192.00	115.20	69.12	41.47	24.88	14.93	8.96	5.37	3.22	1.93	1.16	0.70	0.42	0.25	0.15	0.09	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Net Depreciation Benefit	Rs Lakh	656.64	128.64	51.84	5.76	-21.89	-38.48	-48.43	-54.40	-57.99	-60.14	-61.43	-62.20	-62.66	-62.94	-63.11	-63.21	-63.27	-2.83	0.03	0.02	0.01	0.01	0.00	0.00	0.00
Tax Benefit	Rs Lakh	227.25	44.52	17.94	1.99	-7.57	-13.32	-16.76	-18.83	-20.07	-20.81	-21.26	-21.53	-21.69	-21.78	-21.84	-21.88	-21.90	-0.98	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Energy 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
Per unit benefit	Rs/Unit	12.53	2.46	0.99	0.11	-0.42	-0.73	-0.92	-1.04	-1.11	-1.15	-1.17	-1.19	-1.20	-1.20	-1.20	-1.21	-1.21	-0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Applicable Discounting Factor		1.00	0.95	0.87	0.79	0.72	0.66	0.60	0.54	0.49	0.45	0.41	0.37	0.34	0.31	0.28	0.26	0.23	0.21	0.19	0.18	0.16	0.15	0.13	0.12	0.11

Levellised benefit	**1.02**	**Rs/Unit**