

**HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION, SHIMLA**

Suo-Motu Petition No. 08/2021

**CORAM**

**Sh. Devendra Kumar Sharma**  
**Chairman**

**Sh. Bhanu Pratap Singh**  
**Member**

Date of Order: 10.02.2021

IN THE MATTER OF:-

**Determination of generic levellised tariff for Small Hydro Projects upto 100 kW (01.04.2021 to 30.09.2023) as per the first proviso of sub-regulation(2) of Regulation 14 of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017.**

**ORDER**

1. The Commission notified the Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017, on 23<sup>rd</sup> November, 2017 in the Rajpatra, Himachal Pradesh and specified the financial principles for RE technologies for 3<sup>rd</sup> control period (i.e. 01.04.2020 to 30.09.2023) vide 4<sup>th</sup> amendment of said Regulations on 8<sup>th</sup> September, 2020 and notified in the Rajpatra, Himachal Pradesh on 15<sup>th</sup> September, 2020. Further, keeping in view the policy changes made by the State Government vide notification dated 23<sup>rd</sup> August, 2017, the Commission vide 5<sup>th</sup> amendment of said Regulations notified on 20<sup>th</sup> November, 2020 also specified the enabling provision to determine the generic levellised tariff for small hydro projects upto 100 kW. The said Regulations of 23<sup>rd</sup> November, 2017, read with subsequent amendments as aforesaid, have hereinafter jointly referred to as “RE Tariff Regulations, 2017”;
2. The Commission, after taking into consideration the Policy changes made by the State Government and enabling provision under first proviso of sub-regulation (2) of Regulation 14 of RE Tariff Regulations, 2017 finds it appropriate to determine the Generic Levellised Tariff of small hydro projects upto 100 kW and associated terms and conditions. Accordingly, Commission proposed to determine the said tariff in accordance with this proposal annexed as Annexure-“I”.
3. Comments and suggestions of the stakeholders on the above proposals are invited by **15<sup>th</sup> March, 2021**. A public hearing on the above proposal will be held through video conferencing on **19<sup>th</sup> March, 2021** at **11.30 AM** onwards or soon thereafter.

Sd/-  
(Bhanu Pratap Singh)  
**Member**

Sd/-  
(Devendra Kumar Sharma)  
**Chairman**

**Determination of generic levelled tariff for Small Hydro Projects upto 100 kW (01.04.2021 to 30.09.2023) as per the first proviso of sub-regulation(2) of Regulation 14 of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017.**

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2. The first proviso of sub-regulation (2) of Regulation 14 of RE Tariff Regulations, 2017 provides that:

“Provided that for Small Hydro Projects up to 100 kW, the Commission may determine the Generic Levelled Tariff for the balance period of the 3<sup>rd</sup> Control period ending on 30.09.2023 by taking into account the financial parameters specified for the RE technologies as per Chapter-IV and the technology specific parameters as may be fixed by it in the tariff determination Order in a manner as it may find appropriate:”

In view of above provision, the Commission proposes to fix the technology specific norms and determine the generic levelled tariff of small hydro projects upto 100 kW for the period i.e. 01.04.2021 to 30.09.2023 including other associated terms and conditions for procurement of power by the distribution licensee from such small hydro projects, detailed in the succeeding paragraphs.

**3. Technology Specific Parameters.-**

The Commission proposes to evolve its own technology specific parameters after taking into consideration the relevant inputs relating to capital cost, O&M expenses and CUF of various small hydro projects upto 100 kW. The technology specific parameters, other than the useful life which has already been specified in the RE Tariff Regulations, 2017 for all SHPs, i.e. Control Period, Normative Capital Cost, Normative Operation and Maintenance, Normative CUF, Auxiliary Consumption of the project are proposed to be considered as discussed in the succeeding paragraphs:-

### **3.1 Control period or review period.-**

The first proviso of sub-regulation (2) of Regulation 14 of RE Tariff Regulations, 2017 provides that:

“Provided that for Small Hydro Projects up to 100kW, the Commission may determine the Generic Levellised Tariff for the balance period of the 3rd Control period ending on 30.09.2023 by taking into account the financial parameters specified for the RE technologies as per Chapter-IV and the technology specific parameters as may be fixed by it in the tariff determination Order in a manner as it may find appropriate:”

The 3<sup>rd</sup> proviso of sub-regulation (1) of regulation 9 of the RE Tariff Regulations, 2017 provides that the 3<sup>rd</sup> control period for determination of tariff for SHPs shall start from 1<sup>st</sup> April, 2020 and shall end on the 30<sup>th</sup> September, 2023.

In view of above, the Generic Levellised Tariff is proposed to be fixed for the period i.e. 01.04.2021 to 30.09.2023 which shall, unless amended or revised under regulations 20, continue to be applicable from the date of issuance of this order till the expiry of the tariff period as specified in regulation 10.

### **3.2 Normative Capital Cost.-**

Based on the relevant inputs, taking into account the Economy of Scale and other State specific factors, the Commission proposes to consider normative capital cost of small hydro projects upto 100 kW capacity as Rs. 180 Lacs, which shall be inclusive of all the components of the capital cost as specified in the regulations 21-B of HPERC RE Tariff Regulations, 2017 in relation to other small hydro projects.

### **3.3 Normative Operation and Maintenance Expenses.-**

The normative per annum O&M expenses for small hydro projects upto 100 kW capacity are proposed to be fixed as Rs. 5.40 Lacs. These normative O&M charges shall also be escalated @ 3.84% per annum over the tariff period in line with the provisions of regulation 28-B of the RE Tariff Regulations, 2017 specified for other SHP categories.

### **3.4 Normative Net Saleable Energy.-**

Based on the relevant inputs and also taking other relevant factors into consideration, the Commission proposes to fix the normative CUF for small hydro projects upto 100 kW capacity as 70% net of 12% free power on normative basis during the tariff period shall be considered for tariff determination. Taking into account the effect of leap year, the number of hours in a year for calculation of CUF is proposed to be considered as 8766.

The normative auxiliary consumption and transformation loss is proposed to be considered as 1% of gross generation and the energy loss in the project line is proposed to be considered as 0.7% of the gross generation.

4. After having proposed the technology specific parameters as above, the Commission also proposes to determine the Generic Levellised Tariff for small

hydro projects upto 100 kW, based on the same and the financial parameters specified by the Commission for RE technologies for 3<sup>rd</sup> control period of RE Tariff Regulations, 2017. Other parameters such as useful life, tariff period, tariff structure shall be considered on same lines as specified in RE Tariff Regulations, 2017 for the SHPs. The main details of the proposed tariffs are as follows:-

#### 4.1 **Tariff Structure.-**

Regulation 12 of the RE Tariff Regulations, 2017 stipulates that single part levellised tariff structure, comprising of the following fixed cost components shall be followed and that in case, where, no fuel cost component is involved in power generation, the following parameters shall be considered:-

- (a) Return on Equity;
- (b) Interest on loan capital;
- (c) Depreciation;
- (d) Interest on working capital.

Accordingly, single part generic levellised tariff is proposed to be determined for small hydro projects upto 100 kW by adopting the methodology, discussed in succeeding paragraphs.

#### 4.2 **Useful Life.-**

Clause (ac) of sub-regulations (1) of regulation 2 of the RE Tariff Regulations, 2017 specifies the useful life of small hydro projects as 40 years. Accordingly, the useful life shall be considered as 40 years in this case also.

#### 4.3 **Tariff Period.-**

The tariff period in terms of regulation 10 of RE Tariff Regulations, 2017 is proposed to be considered as 40 years for such projects also.

#### 4.4 **Levellised Tariff.-**

The generic tariff has been determined on levellised basis for the tariff period as per sub-regulations (3) of regulation 12 of the RE Tariff Regulations, 2017.

#### 4.5 **Debt Equity Ratio.-**

The normative debt equity ratio has been considered as 70:30 in accordance with regulation 23-B of the RE Tariff Regulations, 2017.

#### 4.6 **Return on Equity.-**

Regulation 26-B of the RE Tariff Regulations, 2017 provides that the value base for the equity (on which return on equity shall be calculated) shall be equal to the equity component computed in accordance with the provisions of regulation 23-B.

The normative Return on Equity shall be 14%. The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternate Tax (MAT) rate for the first 20 years of the Tariff Period and by the latest available notified Corporate Tax rate for the remaining Tariff Period.

Accordingly, the normative return on equity has been taken as 14% in accordance with the provisions of RE Tariff Regulations, 2017. The grossed-up RoE for the first 20 years of the useful life of the project has been worked out as 16.96% by considering MAT @ 17.472% (15% MAT rate +12% Surcharge+ 4% Health and Education cess) and for the remaining 20 years the same has been grossed-up as 19.75% by considering corporate tax @ 29.12% (25% tax rate +12% Surcharge+ 4% Health and Education cess).

#### 4.7 Interest on Loan.-

The sub-regulation (1) of regulation 24-B of the RE Tariff Regulation, 2017 provides that the loan tenure of 15 years shall be considered for the purpose of determination of tariff for RE projects. Sub-regulation (2) of the said regulation provides for computation of rate of interest of loan as under:-

##### “(2) Interest Rate.-

(a) *The loan amount (i.e. the debt component) arrived at in the manner indicated in the regulation 23-B shall be considered as gross normative loan for calculation of interest on loan. The normative loan outstanding as on 1<sup>st</sup> April of every year shall be worked out by deducting the cumulative repayment up to 31<sup>st</sup> March of previous year from the gross normative loan.*

(b) *For the purpose of computation of tariff(s) under these Regulations, normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one year tenor) prevalent during the last available six months, prior to the respective date(s) from which such tariff(s) the respective generic levellised tariffs are to be made applicable, shall be considered:*

*Provided that in case where the project specific tariff .....*

(c) *Notwithstanding any moratorium period availed by the renewable energy generator, the repayment of loan shall be considered from the first year of the tariff period and shall be equal to the annual depreciation allowed.*

(d) *The loan repayment for a financial year or the relevant part period thereof shall be considered to have been done in the middle of that financial year or the relevant part period thereof, as the case may be.”*

In view of above, the interest rate has been worked out as 9.00% per annum by adding 200 basis points above the average of Marginal Cost of Funds based Lending Rate (MCLR) (one year tenor) of State Bank of India (SBI) prevalent during the last available six months preceding the date of commencement of the RE Tariff Regulations, 2017 as shown in the table below:-

Month	Tenor-wise MCLR of SBI
August, 2020	7.00
September, 2020	7.00
October, 2020	7.00
November, 2020	7.00
December, 2020	7.00
January, 2021	7.00
<b>Avg. for last available 6 months.</b>	<b>7.00</b>

#### 4.8 Depreciation.-

(i) Regulation 25-B of the RE Tariff Regulations, 2017 provides as under:

*“For the purpose of tariff determination, depreciation shall be computed in the following manner, namely:-*

- (a) the value base for the purpose of depreciation shall be equal to sum total of the debt and equity components as per the provisions of regulation 23-B;
- (b) the salvage value shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the value base as per clause (a) of this regulation:  
*Provided that no depreciation shall be allowed to the extent of incentive, grant and capital subsidy available for the project.*
- (c) depreciation per annum shall be based on 'Differential Depreciation Approach'. For tariff purposes, the depreciation shall be allowed @ 4.67% per annum of the value base as per clause (a) of this regulation till such time the requirement for repayment of loan component of the capital cost as per regulations 21-B, 23-B and 24-B is fully provided and the remaining depreciation shall be spread over the residual useful life of the project on straight line method;
- (d) depreciation shall be chargeable from the first year of commencement of operation of the project:  
*Provided that ..... purposes of project specific determination of tariff."*

Accordingly, the rate of depreciation for the first 15 years has been considered as 4.67% and the rate of depreciation from the 16<sup>th</sup> year onwards has been spread over the balance useful life as under:-

Details	Small Hydro projects upto 100 kW.
Useful life (in years)	40
Rate of depreciation for 15 years (%)	4.67
Rate of depreciation after first 15 years (%)	0.798

#### 4.9 Interest on working capital.-

- (i) In accordance with the regulation 27-B of the RE Tariff Regulations, 2017, the working capital requirement of the Solar PV project has been considered by including the following:-

- “(a) operation and maintenance expenses for one month;  
 (b) receivables equivalent to 45 days of energy charges for sale of electricity calculated on the net saleable energy corresponding to the CUF considered for tariff determination on normative basis;  
 (c) maintenance spare @ 15% of operation and maintenance expenses.”*

- (ii) Interest rate on working capital has been worked out as 10.50 % per annum by the adding 350 basis points above the average of Marginal Cost of Funds based Lending Rate (MCLR) (one year tenor) of State Bank of India (SBI) prevalent during the last available six months prior to the respective date(s) from which the generic tariff(s) are to be made applicable.

#### 4.10 Incentive and/or subsidy and/or grant/budgetary support by the Central/ State Government.-

The sub-regulation (1) of regulation 22-B of the RE Tariff Regulations, 2017 provides as under:-

- “(1) While determining the generic levellised or project specific levellised tariff, as the case may be, for the renewable energy project(s) under these Regulations, the Commission shall take into consideration any incentive and/or subsidy and/or grant available under the schemes of the Central or State Government or their agencies, but excluding accelerated depreciation benefit under the Income Tax Act:*

*Provided that the capital subsidy under the schemes of the Central or State Government or their agencies shall be adjusted in the normative capital cost and the cost so arrived, after such adjustment, shall be considered for computing Debt-Equity Components for the purposes of determination of generic levelled tariffs:*

*Provided further that where the Central Government or the State Government notifies, or has notified, any generation based incentive (GBI) scheme for a particular kind of renewable technology, such technology based generating station shall be assumed to have availed the benefit of such a scheme and their tariffs shall be reduced by the amount of generation based incentive (GBI) per unit for the period during which such incentive remains applicable.*

*(2) Where any additional project specific grant or budgetary support is available to any project, apart from the incentive and/or subsidy and/or grant available under sub-regulation (1) of this regulation, the Commission shall account for such budgetary support also, while determining project specific levelled tariff.*

*(3) The amount of subsidy shall be considered for each renewable source as per the applicable policy of the MNRE/State Government/Central Government and if the amount and/or mechanism of subsidy is changed by the MNRE/State Government/Central Government, consequent corrections in tariffs may be carried out by the Commission in accordance with regulation 20.”*

4.11 No adjustment of incentive and/or subsidy and/or grant is being made in the tariff calculations being carried out in this proposal. However, adjustment to be made in the rate on per million of subsidy have been worked out and mentioned in the attached calculation sheet of the project and adjustment, if any, on account of the same shall be made at appropriate stage while applying the tariff after taking into account the eligibility conditions in each case. Similarly, adjustment on account of subsidy available under the Ministry of Commerce and Industry, Government of India and/or any other subsidy scheme(s) of Government (Central/State) shall also be made at appropriate stage(s) after taking into account the extent of subsidy(ies) available under such scheme(s). The adjustments on account of subsidies, where available, are to be made at the rates indicated in the calculation sheet on normative basis by considering the provisions of regulations 20-B, 23-B, 24-B, 25-B and 26-B. For this purpose the total amount (in million rupees) of incentive and/or subsidy and/or grant etc., shall be divided by the installed capacity of the projects and the per 100 kW amount (in million rupees) so arrived at, shall be multiplied by the rate indicated in the calculation sheet.

#### 4.12 **Discount Factor.-**

In accordance with sub-regulation (4) of regulation 12 of the RE Tariff Regulations, 2017, the discount factor equivalent to the post tax weighted average cost of capital has been considered for the purpose of levelled tariff computation. The discount factor has been calculated on this basis of the normative debt equity ratio (70:30) and weighed average of the post tax rates for debt and equity component. For this purpose, the interest rate on the loan component (i.e. 70%) of capital cost is 9.00%. For equity component (i.e. 30%), rate of Return of Equity (RoE) is considered as post tax rate of 14%. The discount factor has been calculated as 8.67%. The Corporate tax has been taken as 29.12% (25% IT rate+ 12% Surcharge+ 4% Health and Education cess).

**4.13 Free power (Energy) structure and adjustment in tariff for variations.-**

- (i) In case of SHPs above 100 kW capacity, it has been specified that the free energy to be taken into account for any part of the tariff period shall not exceed 13.00%, which includes 12.00% free power to the Home State and 1.00% additional free power for local area development fund as stipulated in National Hydro Policy/Tariff Policy. A similar limit is proposed to be adopted in case of SHPs upto 100 kW also. However, since no free power for contribution towards LADF is applicable in case of SHPs upto 100 kW capacity, the free energy to be taken into account for any part of the tariff period for SHP upto 100 kW shall not exceed 12.00%.
- (ii) Based on above and the free power structure presently being followed by the State Government for small hydro projects upto 100 kW and also the fact that the free power for Local Area Development is presently not applicable to such projects, the Generic Levellised Tariff for such projects is proposed to be determined by accounting for free energy, as per following royalty structure:-

Capacity of the Projects	Free power structure
Upto 100 kW	2% for first 12 years and 12% for the remaining 28 years.

In case where the free power structure applicable for a small hydro project for which Power Purchase Agreement (PPA) is to be approved by the Commission is different from that considered in the tariff, the generic levellised tariff for such a project shall be computed by adjusting the generic levellised tariff determined by the Commission in inverse proportion to be levellised values of net saleable energy under two structures i.e. by multiplying the generic levellised tariff of that category by the corresponding levellised net saleable energy (per annum per MW or kW) as per the tariff calculation and dividing the same with the levellised net saleable energy (per annum per MW or kW) worked out at discount rate of 8.67% per annum, corresponding to the permissible free power structure for which the levellised tariff is to be computed for inclusion in the PPA to be approved by the Commission. It shall be ensured that the free power (energy) to be accounted for in the tariff does not exceed the permissible limits, as specified/fixed in para-3.4 & 4.13(i) of this order during any part of the tariff period.

However, for any variations in the structure of free energy after execution of PPA, the adjustment shall be computed in accordance with the following provision:-

In case of any change in the structure of free power of the project from that considered for the determination of generic levellised and in cases where the adjustment in tariff on account of variation in free power has to be carried out, the distribution licensee shall adjust the tariff as per the following formula:-

Rate payable for the month for the net saleable Energy (Rs/kWh)	= a x (100-b)/(100-c)
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Where,-

“a” is the levellised tariff (in Rs/kWh) which is required to be adjusted under this regulation



“b” is the free power (in percentage) taken into account or deemed as taken into account for the month, in “a” in the corresponding month of the tariff period by reckoning the date of commencement of operation of the project as the starting date of the tariff period.

“c” is the free power (in percentage) to be allowed in the tariff for the month subject to maximum limit of 12% free power(energy).

Where free power is applicable at different rates for different parts of a month, the permissible free power (i.e. “c”) shall be determined under this provision separately for each such part and weighted average rate for the month as a whole shall be worked out by considering the total quantum of energy for each day of the month.

#### 4.14 Rounding.-

The tariff worked out for small hydro projects upto 100 kW is proposed to be rounded to nearest paise/kWh. The fraction of 0.5 paise/kWh or above has been rounded to next higher and fraction of less than 0.5 has been ignored.

### 5. GENERIC LEVELLISED TARIFF AND ASSOCIATED TERMS AND CONDITIONS FOR CONTROL PERIOD (i.e. 01.04.2021 to 30.09.2023).-

In light of the discussion made in the preceding paragraphs, the generic levelled tariffs and the associated terms and conditions for small hydro projects upto 100 kW have been determined as under:-

A. The Generic levelled tariffs for small hydro projects shall be as under:-

Capacity of Small Hydro Projects	Generic levelled Tariff in Rs./kWh of net saleable energy without considering subsidy.
Upto 100 kW	4.62

B. The tariff applicable as per item A above shall be subject to adjustment as applicable for small hydro projects upto 100 kW in accordance with the following sub-paragraph (a) to (c):-

**(a) Adjustments on account of incentive and/or subsidy and/or grant available:**

This tariff does not take into account any adjustment(s) on account of incentive and/or subsidy and/or grant available. The adjustment on this account shall be made available before the adjustment(s) on account of subsidy(ies) available, or as may become available, under various applicable scheme(s) of Government (Central/State) shall be carried out at appropriate stage(s) in accordance with para-4.9 of this order and provision of applicable Regulations.

**(b) Variation in free power structure:** The above tariff account for free energy at the following rate.

Capacity	Free power structure
Upto 100 kW	2% for first 12 years and 12% for the remaining 28 years.

In case the structure of free power applicable for a small hydro project for which the PPA is to be approved by the Commission is different from that considered in the tariff, the adjustment shall be carried out in accordance with para-4.13 of this proposal. However, it shall be ensured that free power (energy) to be accounted for the tariff does not exceed the permissible limits of 12.00% during any part of the tariff period. The adjustment, if any, on account of royalty structure shall be computed on the rate arrived at after carrying out adjustments as per the sub-paragraph above. This means that the adjustment of royalty structure as per sub-paragraphs shall have to be computed again if the adjustment as per sub-paragraph (a) is done at a subsequent stage i.e. after approval of the PPA.

(c) **Rounding:**

(i) The tariff worked out for small hydro projects upto 100 kW have been rounded to nearest paise/kWh. The fraction of 0.5 paise/kWh or above has been rounded to next higher and fraction of less than 0.5 has been ignored.

(ii) Rounding on the similar lines shall be carried out in the final rate arrived at in each case after carrying out the adjustments as per sub-paragraphs (a)&(b) above.

6. The detailed computation for generic levellised tariff for small hydro projects upto 100 kW capacity is attached as per **Appendix –“A”**.

**Tariff for SHP of Capacity upto 100kW (Without subsidy)**
**Appendix-A Sheet-I**

Assumptions for Small Hydro Power		
<b>Generating Capacity (MW)</b>	<b>MW</b>	<b>1</b>
<b>Project Cost</b>		
Cost/MW	Rs Lacs/MW	<b>1800.00</b>
Project Cost	Rs Lacs	1800.00
MNES Subsidy	Rs Lacs (at 1MW Capacity)	0
Term	Years	40
<b>Project Financing</b>		
Project Debt	% of project cost	<b>70%</b>
Project Debt	Rs Lacs	1260.00
Equity	Rs Lacs	540.00
Term of Debt	Years	<b>15</b>
Moratorium	Years	<b>0</b>
Interest Rate	%	<b>9.00%</b>
<b>Depreciation</b>		
Recovery of Depreciation	%	90%
Rate of Depreciation (First 15 Years)	%	4.67%
Rate of Depreciation (Last 25years)	%	0.798%
<b>Operating Norms</b>		
CUF (Net of free power)	%	<b>70.00%</b>
Auxiliary Consumption	%	<b>0.50%</b>
Transformation Losses	%	<b>0.50%</b>
Transmission losses		<b>0.70%</b>
<b>O&amp;M Expenses</b>	Rs. In Lacs/ MW	<b>54.00</b>
<b>O&amp;M Expenses w.r.t Capital Cost</b>	%	
Annual Escalation Factor	%	<b>3.84%</b>
<b>Tax</b>		
Tax Rate	%	29.12%
MAT Rate	%	17.47%
Surcharge		12.00%
Cess Rate		4.00%
Effective ROE( for first 20 years)		16.96%
Effective ROE (for period beyond first 20 years)		19.75%
<b>Working Capital Norms</b>		
Receivables	Months	<b>1.5</b>
Spares	% of O&M Cost	<b>15%</b>
O&M Expenses	Months	<b>1.5</b>
Interest on Working Capital	%	<b>10.50%</b>
<b>Discount Factor</b>	%	<b>8.67%</b>
<b>Depreciation amount</b>		<b>90.00%</b>
<b>Income Tax (MAT)</b>		<b>17.47%</b>
<b>Income Tax (Normal Rates)</b>		<b>29.12%</b>

**GENERIC LEVELLISED TARIFF OF SHP upto 100 KW capacity (without subsidy)**

DETERMINATION OF TARIFF COMPONENT	UNIT	YEAR→	Y 01	Y 02	Y 03	Y 04	Y 05	Y 06	Y 07	Y 08	Y 09	Y 10	Y 11	Y 12	Y 13	Y 14	Y 15	Y 16	Y 17	Y 18	Y 19
<b>INSTALLED CAPACITY</b>	(MW)																				
Net Saleable Energy at the Interconnection point after the adjustment of Free Power, Project Line Losses and Auxillary Consumption (Levellised/ Annual)	(MU)		6.481	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.03	6.03	6.03	6.03	6.03	6.03	6.03
<b>Fixed Cost</b>																					
RoE	Rs Lacs.		91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58	91.58
Depreciation	Rs Lacs.		84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	84.06	14.36	14.36	14.36	14.36
O&M	Rs Lacs.		54.00	56.07	58.23	60.46	62.78	65.20	67.70	70.30	73.00	75.80	78.71	81.73	84.87	88.13	91.52	95.03	98.68	102.47	106.40
WC Interest	Rs Lacs.		5.79	5.77	5.76	5.74	5.73	5.72	5.72	5.72	5.72	5.73	5.74	5.75	5.77	5.80	5.83	5.00	5.14	5.28	5.43
Interest on long Term loans	Rs Lacs.		109.62	102.06	94.50	86.94	79.38	71.82	64.26	56.70	49.14	41.58	34.02	26.46	18.90	11.34	3.78	0.00	0.00	0.00	0.00
Advance Against Dep.	Rs Lacs.		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	Rs Lacs.		345.06	339.55	334.13	328.79	323.54	318.38	313.32	308.36	303.50	298.75	294.11	289.59	285.19	280.91	276.77	205.98	209.76	213.70	217.78
<b>Fixed Cost Rs Crores)</b>																					
RoE	Rs./ kWh		1.457	1.36	1.25	1.15	1.06	0.98	0.90	0.83	0.76	0.70	0.65	0.59	0.55	0.56	0.52	0.47	0.44	0.40	0.37
Depreciation	Rs./ kWh		0.999	1.25	1.15	1.06	0.98	0.90	0.83	0.76	0.70	0.64	0.59	0.54	0.50	0.51	0.47	0.44	0.07	0.06	0.06
O&M	Rs./ kWh		1.325	0.80	0.77	0.73	0.70	0.67	0.64	0.61	0.58	0.56	0.53	0.51	0.49	0.52	0.50	0.47	0.45	0.43	0.41
WC Interest	Rs./ kWh		0.092	0.09	0.08	0.07	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.04	0.03	0.03	0.02	0.02	0.02
Interest on long Term loans	Rs./ kWh		0.752	1.63	1.40	1.19	1.01	0.85	0.71	0.58	0.47	0.38	0.29	0.22	0.16	0.12	0.06	0.02	0.00	0.00	0.00
<b>Total Cost of Generation</b>	Rs./ kWh		4.624	5.14	4.65	4.21	3.81	3.45	3.13	2.83	2.56	2.32	2.10	1.91	1.73	1.74	1.58	1.43	0.98	0.92	0.86
			4.62																		
Disc factor			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Disc factor		8.67%	1.00	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.44	0.40	0.37	0.34	0.31	0.29	0.26	0.24	0.22
Discounted Rate	Rs./ kWh		5.14	4.65	4.21	3.81	3.45	3.13	2.83	2.56	2.32	2.10	1.91	1.73	1.74	1.58	1.43	0.98	0.92	0.86	0.81

Generic Levellised Tariff Without Subsidy      Rs./ kWh      **4.62**

**Generic Levellised Tariff (without Subsidy) at Capital Cost of Rs 175 Lac/100 kW = Rs. 4.62 /kWh**

**Indicative Generic Levellised Tariff by considering Subsidy/Incentive/Grant of Rs 1 million/100 kW = Rs. 4.44 /kWh**

**Reduction in rate for one million rupees of Subsidy/Incentive/Grant etc per 100 kW of capacity= Rs. 0.28/kWh [Please refer para 4.11 of the proposal]**

## GENERIC LEVELLISED TARIFF OF SHP upto 100 KW capacity (without subsidy)

DETERMINATION OF TARIFF COMPONENT	UNIT	Y 20	Y 21	Y 22	Y 23	Y 24	Y 25	Y 26	Y 27	Y 28	Y 29	Y 30	Y 31	Y 32	Y 33	Y 34	Y 35	Y 36	Y 37	Y 38	Y 39	Y 40	
<b>INSTALLED CAPACITY</b>	(MW)																						
Net Saleable Energy at the Interconnection point after the adjustment of Free Power, Project Line Losses and Auxillary Consumption (Levellised/ Annual)	(MU)	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	6.03	
<b>Fixed Cost</b>																							
RoE	Rs Lacs.	91.58	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	106.65	
Depreciation	Rs Lacs.	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	
O&M	Rs Lacs.	110.49	114.73	119.14	123.71	128.46	133.40	138.52	143.84	149.36	155.10	161.05	167.24	173.66	180.33	187.25	194.44	201.91	209.66	217.71	226.07	234.76	
WC Interest	Rs Lacs.	5.58	5.94	6.11	6.28	6.46	6.65	6.84	7.05	7.26	7.47	7.70	7.93	8.18	8.43	8.69	8.97	9.25	9.54	9.85	10.17	10.50	
Interest on long Term loans	Rs Lacs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Advance Against Dep.	Rs Lacs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Total</b>	Rs Lacs.	222.02	241.69	246.26	251.01	255.94	261.06	266.38	271.90	277.63	283.59	289.77	296.19	302.85	309.77	316.96	324.42	332.17	340.22	348.58	357.26	366.27	
<b>Fixed Cost Rs Crores)</b>																							
RoE	Rs./ kWh	0.31	0.34	0.31	0.28	0.26	0.24	0.22	0.20	0.19	0.17	0.16	0.15	0.13	0.12	0.11	0.10	0.10	0.09	0.08	0.08	0.07	
Depreciation	Rs./ kWh	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	
O&M	Rs./ kWh	0.38	0.36	0.34	0.33	0.31	0.30	0.29	0.27	0.26	0.25	0.24	0.23	0.22	0.21	0.20	0.19	0.18	0.17	0.17	0.16	0.15	
WC Interest	Rs./ kWh	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Interest on long Term loans	Rs./ kWh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Total Cost of Generation</b>	Rs./ kWh	0.76	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.41	0.38	0.36	0.34	0.32	0.30	0.28	0.27	0.25	0.24	
Disc factor		<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	
Disc factor		0.21	0.19	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.04	
Discounted Rate	Rs./ kWh	0.76	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.41	0.38	0.36	0.34	0.32	0.30	0.28	0.27	0.25	0.24	

Generic Levellised Tariff Without Subsidy      Rs./ kWh      **4.62**