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THE
JHARKHAND GAZETTE
EXTRAORDINARY
PUBLISHED BY AUTHORITY

No. 25 17 Agrhayn, 1938 (S)

Ranchi Thursday 8th December, 2016

JHARKHAND STATE ELECTRICITY REGULATORY COMMISSION, RANCHI

NOTIFICATION
28th September 2016

No. 58--In exercise of the powers conferred by Section 86 (1) (a), (b) and (c) read with (e), Section 61(a to h), and Section 62 (1) of the Electricity Act 2003 and all other powers enabling it in this behalf, the Jharkhand State Electricity Regulatory Commission hereby makes the following Regulations.

A1: SHORT TITLE, COMMENCEMENT AND INTERPRETATION

1.1 This Regulation may be called the 'Jharkhand State Electricity Regulatory Commission (Determination of Tariff for procurement of power from Small Hydro Power Projects) Regulation, 2016'.

1.2 These Regulations shall extend to the whole state of Jharkhand.

1.3 These Regulations shall come into force on the date of its publication in the Jharkhand Gazette and unless reviewed earlier or extended by the Commission, shall remain in force up to 31st March, 2020.

A2: DEFINITION

2.1 In this Regulation unless the context otherwise requires:

(a) **"Act"** means the Electricity Act, 2003 and subsequent amendment thereof;

(b) **"Auxiliary Energy Consumption"** in relation to a period means the quantum of energy consumed by auxiliary equipment of the generating station and shall be expressed as a percentage of the sum of gross energy generated at generator terminals of all the units of the generating station;

(c) **"Beneficiary"** in relation to a generating station means the person buying power generated at such a generating station;

(d) **"Capacity Utilization Factor"** means the energy likely to be generated as a percentage of maximum energy that could have been generated with full capacity utilization of the installed capacity of the project.

(e) **"Capital cost"** means the cost inclusive of all capital work including plant and machinery, civil work, land including leasehold land, erection and commissioning, financing and interest during construction and evacuation infrastructure as provided for in Regulation 5.15 ;

(f) **"CERC"** means The Central Electricity Regulatory Commission referred to in subsection (1) of section 76;

(g) **"Control Period"** means the period during which the norms for determination of tariff specified in these regulations shall remain valid;

(h) **"Commission"** means Jharkhand State Electricity Regulatory Commission;

(i) **"Date of Commercial Operation or COD"** in relation to a unit means date declared by the generator after demonstrating the Maximum Continuous Rating (MCR) or installed Capacity (IC) through a successful trial run, after notice to the beneficiaries, and in relation to the generating station the date of commercial operation means the date of commercial operation of the last unit of the generating station.

(j) **"Day"** means a continuous period starting at 00.00 hours and ending at 24.00 hours;

(k) **"Distribution Licensee or Discom"** means a Licensee authorised to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;

(l) **"Force Majeure Event"** for the purpose of these regulations means the event or circumstance or combination of events or circumstances including those

stated below which partly or fully prevents any party to complete the project within the time specified in the Investment Approval, and only if such events or circumstances are not within the control the party and could not have been avoided, had the party taken reasonable care or complied with prudent utility practices:

(i) Act of God including lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, geological surprises, or exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred years; or

(ii) Any act of war, invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action; or

(iii) Industry wide strikes and labor disturbances having a nationwide impact in India

(m) **"Grid"** means interconnected network of transmission lines, distribution lines and sub-stations at EHV and HV level;

(n) **"Grid Code"** shall mean the JSERC (State Grid Code), Regulations, 2008 & its amendment from time to time;

(o) **"Infrastructure cost"** means the cost of auxiliaries, cost of land, site development charges and other civil works, transportation charges, cost of evacuation upto interconnection point;

(p) **"Installed Capacity"** means the summation of the nameplate capacities of the units in the generating station or the capacity of the generating station (reckoned at the generator terminals) as approved by the Commission from time to time;

(q) **"Inter-Connection Point"** means the interface point of renewable energy generating facility with the transmission system or distribution system which shall be in line isolator on outgoing feeder on HV side of generator transformer;

(r) **"Maximum available capacity"** means the maximum capacity in MW, the generating station can generate with all units running, under the prevailing conditions of water levels and flows;

(s) **"Month"** means a continuous period of one month commencing from 00.00 hours on the first day of the month and ending at 24.00 hours on last day of the month;

(t) **"Operation and Maintenance Expenses" or "O&M Expenses"** means the expenditure incurred in operation and maintenance of the power station facilities, including the expenditure on manpower, repairs, spares, consumables, insurance, overheads and any associated transmission system (if any) built by the developer.

(u) **"Project"** means a generating station and includes the complete small hydro power generating facility covering all components such as weir, intake, water conductor systems, power station facilities and any associated transmission system (if any) built by the developer.

(v) **"SERCs"** means the State Electricity Regulatory Commissions;

(w) **"State Load Despatch Centre(SLDC)"** means the Centre established under subsection (1) of Section 31 of the Act;

(x) **"Small Hydropower Plant"** means a generating station based on hydro resource with installed capacity between 1 to 25 MW which can either be a canal based power station or a run-of-river power station;

(y) **"State"** means the State of Jharkhand;

(z) **"State Transmission Utility (STU)"** means the Board or the Government Company specified as such by the State Government under sub-section (1) of section 39 of the Act;

(aa) **"Tariff period"** means the period for which tariff is to be determined by the Commission on the basis of norms specified under these Regulations;

(bb) **"Useful Life"** in relation to a unit of a generating station for a small hydro project including evacuation system shall mean 35 years from the date of commercial operation (COD);

(cc) **"Year"** means a financial year

2.2 All other expressions used herein although not specifically defined herein, but defined in the Act, shall have the meaning assigned to them in the Act. The other expressions used herein but not specifically defined in this regulation or in the Act but defined under any law passed by the Parliament applicable to electricity industry in the State shall have the meaning assigned to them in such law.

A3: SCOPE AND EXTENT OF APPLICATION

3.1 These Regulations shall apply in those cases where tariff for Small Hydro Power generating stations (SHPs) with installed capacity between 1 to 25 MW located in Jharkhand is to be determined by the Commission.

3.2 Notwithstanding anything contained in these Regulations, the Commission shall adopt the generation tariff, if such tariff has been determined through a transparent process of bidding in accordance with the guidelines issued by the Central Government under Section 63 of the Act.

3.3 The generators may opt for a generic tariff as determined based on norms specified in these regulations or may file a petition before the Commission for a project specific tariff. A petition for determination of project specific tariff shall be accompanied by such fee as may be determined by Regulations and shall be accompanied by:

(a) Information in Forms 1.1 and 1.2, as the case may be, and as appended in these regulations;

(b) Detailed project report outlining technical and operational details, site specific aspects, premise for capital cost and financing plan etc;

(c) A statement of all applicable terms and conditions and expected expenditure for the period for which tariff is to be determined;

(d) A statement containing full details of calculation of any subsidy and incentive received, due or assumed to be due from the Central Government and/or State Government. This statement shall also include the proposed tariff calculated without consideration of the subsidy and incentive;

(e) Any other information that the Commission requires the petitioner to submit.

3.4 Determination of Project specific Tariff for generation of electricity from small hydro power shall be in accordance with such terms and conditions as stipulated under relevant Orders of the Commission.
Provided that the financial norms as specified under 'Components of Tariff' of these Regulations, except for capital cost, shall be ceiling norms while determining the project specific tariff.

3.5 The Control Period will start from the date of publication of these regulations in the Official Gazette of Government of Jharkhand and will extend upto 31st March, 2020. The tariff decided in a particular control period shall apply to all projects which come up within that control period.

3.6 The revision in Regulations for next Control Period shall be undertaken at least six months prior to the end of this Control Period and in case Regulations for the next Control Period are not notified until commencement of next Control Period, the tariff norms as per these Regulations shall continue to remain applicable until notification of the revised Regulations subject to adjustments as per revised Regulations.

A4: DETERMINANTS OF TARIFF

4.1 The Commission shall determine the generic tariff on the basis of suo-motu petition at least six months in advance at the beginning of each year of the Control period for small hydro power projects for which norms have been specified under these Regulations.

Tariff Design

4.2 The generic tariff shall be determined on levellised basis for the tariff period.

4.3 For the purpose of levellised tariff computation, the discount factor equivalent to Post tax weighted average cost of capital shall be considered.

4.4 Levellisation shall be carried out for the 'useful life' of the small hydro power project while tariff shall be specified for the period equivalent to 'Tariff Period'

4.5 Save as provided in sub-regulation (i) and (ii), the generic levellised tariff or project specific tariff, as the case may be, determined in accordance with the provisions of these Regulations shall be firm and shall not be subject to any review.

(i) If, after the determination of the generic levellised tariff for the tariff period or the project specific tariff for a project:

a) a water cess or tax on generation is levied which impacts all or any of the projects; and/or

b) the limit of 13% for the pass through of free power in the tariff, as per the National Hydro Policy/ Tariff Policy is revised; and/or

c) the mechanism or quantum of the capital subsidy or budgetary grant is changed as a matter of policy; and/or

d) the State Government revises its instructions with regard to the minimum flow of water downstream of diversion structure of the SHPs and implements the same;

The Commission may, suo motu or on an application made to it, by generic or specific order, review the tariff for the residual tariff period or such other part as it may deem fit, for the projects or group of projects actually impacted, to account for the impact of such changes

(ii) Any additional expenditure of capital nature which becomes necessary on account of Force Majeure events, after prudence check by the Commission, shall be allowed as additional capitalization after adjusting the proceeds from any insurance scheme of all the generating stations covered under these regulations.

Provided that additional capitalization on this account would only be allowed if appropriate and adequate insurance cover was available for the generating station at the time of occurrence of natural calamities referred to in first proviso above.

Provided that while revising the tariff, the Commission may incorporate such terms and conditions, including the period for which such revised tariff shall be applicable, as it may deem fit.

Components of tariff

4.6 Tariff determination using a cost-plus approach requires assumptions on the following operational and financial parameters:

(a) Capital cost;

(b) Capacity utilization factor;

(c) Auxiliary consumption;

(d) Debt-equity ratio ;

(e) Term of loan and Interest on long term debt;

(f) Depreciation;

(g) Operation and Maintenance expenditure;

(h) Working capital and interest on working capital;

(i) Return on equity.

4.7 The subsequent sections detail the terms and conditions of various components set by the Commission for determination of tariff from small hydro power projects.

Capital cost

4.8 The normative capital cost for small hydro power projects for the first year of control period i.e. FY 2016-17 shall be as follows:

Project Size	Capital Cost (INR Lakh/MW)
Below 5 MW	750
5 MW to 25 MW	700

Provided that for project specific tariff determination, the generating company shall submit the break-up of capital cost items along with its petition in the manner specified under Regulation 3.3.

4.9 The capital cost for subsequent years shall be determined on the basis of indexation formula as outlined under Regulation 4.10.

Capital Cost Indexation Mechanism

4.10 The following indexation mechanism shall be applicable in case of small hydro power projects for adjustments in capital cost over the Control Period with the changes in Wholesale Price Index for Steel and Electrical Machinery.

$CC_{(n)} = P\&M_{(n)} * (1+F1+F2+F3)$ $P\&M_{(n)} = P\&M_{(0)} * (1+d_{(n)})$

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

Where,

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

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

$P\&M_{(0)}$ = Plant and Machinery Cost for the base year (FY 2015-16)

Note: $P\&M_{(0)}$ is to be computed by dividing the base capital cost (for the first year of the control period) by (1+F1+F2+F3)

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

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

$SI_{(0)}$ = Average WPI Steel Index prevalent for calendar year (0) at the beginning of the Control Period i.e. April 2015 to March 2016

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

$EI_{(0)}$ = Average WPI Electrical and Machinery Index prevalent for calendar year (0) at the beginning of the Control Period i.e. April 2015 to March 2016

a = Constant to be determined by Commission from time to time, (In default it is 0.6), for weightage to Steel Index

b = Constant to be determined by Commission from time to time, (In default it is 0.4), for weightage to Electrical Machinery Index

F1 = Factor for Land and Civil Work (0.16)

F2 = Factor for Erection and Commissioning (0.10)

F3 = Factor for IDC and Financing Cost (0.14)

Capacity utilization factor

4.11 The Commission has considered CUF at 30% for small hydro power projects.

For the purpose of this Regulation, normative CUF is net of free power to the home state if any, and any quantum of free power if committed by the developer over and above the normative CUF shall not be factored into the tariff.

Life of plant

4.12 The life of plant for small hydro project whose commercial operation date falls within the control period of these Regulations shall be 35 years from date of commercial operation.

Debt equity ratio

4.13 For generic tariff, the Commission has considered a debt-equity ratio of 70:30 for tariff determination.

4.14 For Project specific tariff, the following provisions shall apply:-

(a) If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

(b) Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.

(c) Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

Term of loan and Interest on long term debt

4.15 For the purpose of determination of tariff, loan tenure of 12 years shall be considered.

4.16 The loans arrived at in the manner indicated in the Regulation 4.13 and 4.14 above shall be considered as gross normative loan for calculation for interest on loan. The normative loan outstanding as on April 1st of every year shall be worked out by deducting the cumulative repayment up to March 31st of previous year from the gross normative loan.

4.17 For the purpose of computation of tariff the normative interest rate on long term loan shall be considered as average State Bank of India (SBI) Base rate prevalent during the first six months of the previous year plus 300 basis points.

4.18 Notwithstanding any moratorium period availed for the small hydro power project, 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.

Depreciation

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

4.20 Depreciation per annum shall be based on 'Differential Depreciation Approach' over loan period beyond loan tenure over useful life computed on Straight Line Method'. 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 13th year onwards.

4.21 Depreciation shall be chargeable from the first year of commercial operation.

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

Operation and Maintenance expenses

4.22 Operation and Maintenance (O&M) expenses consist of employee expenses, administrative and general expenses, repairs and maintenance expenses, cost of spares and insurance expenses.

4.23 Normative O&M expenses for the first year of the Control period (i.e. FY 2016-17) shall be as follows:

Project Size	O&M Expenses (INR Lacs/MW)
Below 5 MW	24.98
5 MW to 25 MW	17.48

4.24 Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 5.72% per annum for the Tariff Period for the purpose of determination of levellised tariff.

Working capital requirement and interest on working capital

4.25 The normative Working Capital requirement in respect of small hydro power projects shall be computed in accordance with the following:

(a) Operation & Maintenance expenses for one month;

(b) Receivables equivalent to 2 (Two) months of energy charges for sale of electricity calculated on the normative CUF;

(c) Maintenance spares @ 15% of operation and maintenance expenses;

4.26 Interest on Working Capital shall be at interest rate equivalent to the average State Bank of India Base Rate prevalent during the first six months of the previous year plus 350 basis points.

Return on equity

4.27 The value base for the equity shall be 30% of the capital cost or actual equity (in case of project specific tariff determination as determined under Regulation 4.14).

4.28 The return on equity considered by the Commission in these regulations shall be:

(a) 20% per annum for the first 10 years;

(b) 24% per annum 11th years onwards.

Auxiliary consumption

4.29 The Commission has considered auxiliary consumption as 1% for the determination of the tariff.

4.30 The cost parameters considered by the Commission to determine tariff for power generated from small hydro power projects are summarized in the table below:

Cost parameters considered by Commission for Tariff determination for SHP projects	Value
Capital Cost (Rs Lacs/ MW)	Below 5 MW: INR 750 lacs/MW
	5 MW to 25 MW: INR 700 lacs/MW
Capacity Utilization Factor	30%
Auxiliary consumption	1%
Life of Plant	35 Years

Debt: equity ratio	70:30
Loan repayment period	12 yrs
Interest on loan	Average SBI Rate during first 6 months of previous years + 300 basis points
Interest on Working Capital	Average SBI Rate during first 6 months of previous years + 350 basis points
O&M expenses	Below 5 MW: INR 24.98 Lacs/MW
	5 MW to 25 MW: INR 17.48 Lacs/MW
Depreciation	Yr 1 to 12 – 5.83% 13th Yr onwards: Remaining depreciation spread over useful life
Residual value	10% of capital cost
Return on equity (pre-tax)	Yr 1 to 10 - 20% 11th Yr onwards - 24%

A5: OTHER TERMS AND CONDITIONS

Transmission and Wheeling

5.1 In case of third party sale or for captive use both within the State or outside, the transmission/ wheeling charges and transmission/ wheeling losses shall be recovered as under:

(a) For use of transmission network, transmission charges and losses as determined by the Commission in respect of open access transactions would be applicable.

(b) For use of distribution licensee's network, the wheeling charges and losses as determined by the Commission in respect of open access transactions at respective voltage levels at which electricity is supplied, would be applicable.

(c) For use of both EHV and distribution network, both transmission and wheeling charges as well as losses, as applicable shall be payable.

Scheduling

5.2 The small hydro power projects with installed capacity of 10 MW and above shall be treated as 'MUST RUN' power plants and shall not be subjected to 'merit order despatch' principles.

Metering and billing

5.3 The metering and communication arrangements shall be provided in accordance with the JSERC (Terms and Conditions for Intra-state Open Access) Regulations, 2016 and subsequent amendments thereof, Grid Code and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 in consultation with Distribution Licensee/State Transmission Utility and subsequent amendments thereof. The periodicity of testing, checking, calibration etc., will be governed by the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and regulations issued by the Commission from time to time in this regard.

5.4 Main and Check Meters shall have facility to communicate its reading to State Load Dispatch Centre on real time basis or otherwise as may be specified by the Commission.

5.5 Meter reading shall be taken as per the procedure devised by the Distribution Licensee/State Load Despatch Centre. The term 'Meter' shall include Current transformers, voltage/potential transformers, wiring between them and meter box/panel etc.

5.6 Billing of the metered energy shall be carried out on a monthly basis.

Payment mechanism

5.7 The Commission prescribes a settlement period of 60 days from the date of presentation of the bill for the net energy sold after deducting the charges for start-up power and reactive power to the concerned Distribution Licensee where the power is injected, in order to ensure that the generating company has an assurance of cash inflow for the energy delivered to the grid.

5.8 In case of delay beyond the 60 days payment period, the Distribution Licensee shall pay a late payment surcharge at the rate of 1.25% per month to the generating company.

5.9 In case the Distribution Licensee makes the payment other than through letter of credit within 30 days from the date of presentation of bills by the generating company, a rebate of 1% billed amount shall be allowed by the generating company.

5.10 In case where payments of bills of the generating company are made through letter of credit within 1 month of presentation of bill, a rebate of 2% shall be allowed to the Distribution Licensee.

Third party sale

5.11 In case of default in payment for more than three months continuously by the Distribution Licensee, the generating company can sell power to the third party.

5.12 In those cases where the developer has an existing arrangement for third party supply or for captive consumption and in case the generating company desires to terminate the agreement with third party and to supply to the Distribution Licensee, the Distribution Licensee with the prior permission of the Commission, shall purchase the power at the rate as determined by the Commission in these regulations.

Start-up power

5.13 The small hydro power generator shall be entitled to draw start up power from the Distribution Licensee's network. The drawal of energy by the generator during the start up from the Distribution Licensee shall be adjusted against the generated energy.

Drawing of power during shut down

5.14 The small hydro power generator shall be entitled to draw power from the Distribution Licensee's network during shutdown period of its plant or other emergencies. The energy consumed shall be billed at the temporary rate applicable to HT Industrial category.

Evacuation Infrastructure

5.15 The Transmission Licensees and Distribution Licensees shall provide connectivity to the developer at nearest possible sub-station preferably within a range of 10 Kms from the location of such generating station subject to technical feasibility and technical standards for construction of electrical lines and connectivity with the grid as may be specified by CEA.

Incentive by Central / State government

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

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

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

(b) Capitalization of RE projects during second half of the fiscal year. Per unit benefit shall be derived on levellised basis at discount factor equivalent to Post Tax weighted average cost of capital.

Taxes and Duties

5.17 Tariff determined under these regulations shall be exclusive of taxes and duties as may be levied by the appropriate Government:

Provided that the taxes and duties levied by the government shall be allowed to pass through on actual incurred basis.

Financial benefits

5.18 The Department of Industries, Government of Jharkhand notified the Industrial Policy in the year 2012. The policy states that thrust will be given to develop renewable and environment friendly sources of energy. A renewable based power plant with commercial operation after the effective date of implementation of the policy, shall be deemed to be a new industrial unit and will be entitled to all the incentives under the prevailing Industrial Policy.

Single Window Clearance

5.19 The developers shall be granted approvals and clearances in line with the Jharkhand State Industrial Policy 2012.

Tariff period

5.20 The Commission has considered the useful life of small hydro power plant as 35 years. The tariff determined under these Regulations shall be applicable for 35 years for the projects having Commercial Operation Date (COD) up to 31st March 2020.

A6: POWER TO REMOVE DIFFICULTIES

6.1 In case of any difficulty in giving effect to any of the provisions of this Regulation, the Commission may by general or special order, issue appropriate directions to Generators, Transmission Licensee(s), Distribution Licensee(s) etc., to take suitable action, not being inconsistent with the provisions of the Act, which appear to the Commission to be necessary or expedient for the purpose of removing the difficulty.

6.2 The generators, Licensees may make an application to the Commission and seek suitable orders to remove any difficulties that may arise in implementation of these regulations.

A7: POWER TO AMEND

7.1 The Commission may from time to time add, vary, alter, suspend, modify, amend or repeal any provisions of this Regulation.

A8: SAVINGS

8.1 Nothing in these Regulations shall be deemed to limit or otherwise affect the inherent power of the Commission to make such orders as may be necessary to meet the ends of justice or to prevent abuses of the process of the Commission.

8.2 Nothing in this Regulations shall bar the Commission from adopting in conformity with the provisions of the Act a procedure, which is at variance with any of the provisions of these Regulations, if the Commission, in view of the special circumstances of a matter or class of matters and for reasons to be recorded in writing, deems it necessary or expedient for dealing with such a matter or class of matters.

8.3 Nothing in these Regulations shall, expressly or impliedly, bar the Commission dealing with any matter or exercising any power under the Act for which no Regulations or Regulations have been framed, and the Commission may deal with such matters, powers and functions in a manner it thinks fit.

(By order of the Commission)
(A.K. Mehta)

Secretary

Jharkhand State Electricity Regulatory Commission

Appendix

Form 1.1 Form Template for Small Hydro

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Amount
1	**Power Generation**				
		Capacity			
			Installed Power Generation Capacity	MW	
			Capacity Utilization Factor	%	
			Auxiliary consumption	%	
			Useful Life	Years	
2	**Project Cost**		Normative Capital Cost	Rs Lacs	
		Capital Cost/MW	Capital Cost	Rs Lacs	
		-	Capital subsidy (if any)	Rs Lacs	
		-	Net capital cost	Rs Lacs	
3	**Sources of Fund**				
			Tariff Period	Years	
		Debt: Equity			
			Debt	%	
			Equity	%	
			Total Debt Amount	Rs Lacs	
			Total Equity Amout	Rs Lacs	
		Debt Component			
			Loan Amount	Rs Lacs	
			Moratorium Period	years	
			Repayment Period(incld Moratorium)	years	
			Interest Rate	%	
		Equity Component			
			Equity amount	Rs Lacs	
			Return on Equity for first 10 years	% p.a	
			RoE Period	Year	
			Return on Equity 11th year onwards	% p.a	
			Weighted average of ROE	%	
			Discount Rate (WACC)	%	
4	**Financial Assumptions**				
		Fiscal Assumptions			
			Income Tax	%	
			MAT Rate (for first 10 years)	%	
			80 IA benefits	Yes/No	
		Depreciation			
			Depreciation Rate for first 12	%	

S. No.	Assumption Head	Sub-Head	Sub-Head (2)	Unit	Amount
			years		
			Depreciation Rate 13th year onwards	%	
			Years for 5.83% rate	Years	
			Salvage value	%	
5	**Working Capital**				
		O&M Charges		Months	
		Maintenance Spare	(% of O&M exepenses)	%	
		Receivables for Debtors		Months	
		on energy charges			
		Interest On Working Capital		%	
6	**Operation & Maintenance**				
		Normative O&M Expenses		Rs Lakh	
		O&M Expenses Per Annum			
		Escalation Factor		%	
7	**Incentives (if any)**				
		GBI		Rs Lakh p.a.	
		Period for GBI		Years	

Form 1.2 Form Template for Small Hydro – Determination of Tariff

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																																				
Gross/Net Generation	MU																																				

Tariff Components (Fixed Charge)	Unit	Year --->	1	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																																				
Gross/Net Generation	MU																																				
O&M Expenses	Rs Lakh																																				
Depreciation	Rs Lakh																																				
Interest on term loan	Rs Lakh																																				
Interest on working Capital	Rs Lakh																																				
Return on Equity	Rs Lakh																																				
Total Fixed Cost	**Rs Lakh**																																				

Levallised tariff corresponding to Useful life

Per Unit Cost of Generation	Unit	Year --->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
O&M expn	Rs/kWh																																				
Depreciation	Rs/kWh																																				
Int. on term loan	Rs/kWh																																				
Int. on working capital	Rs/kWh																																				
RoE	Rs/kWh																																				
Total COG per unit	**Rs/kWh**																																				

Per Unit Cost of Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Discount Factor																																					
Discounted Tariff Components	Rs/kWh																																				
Levellised Tariff		Rs Lakhs																																			
Discount Factor																																					
Levellised Tariff		Rs/Unit																																			