

# Arunachal Pradesh Terms and Conditions for Tariff Determination from Renewable Energy Sources Regulation 2018 (Consolidated)

## HIGHLIGHTS

<b>Tariff Period</b>	<b>Technology</b>	<b>No. of Years</b>
	Municipal solid waste (MSW) and refuse derived fuel (RDF) based power	20
	Wind, solar PV	25
	Small hydro	35
<b>Control Period</b>	3 years, of which the first year shall be FY 2018-19.	
<b>Useful Life of a Plant</b>	<b>Technology</b>	<b>No. of Years</b>
	Municipal solid waste (MSW) and refused derived fuel (RDF) based power	20
	Wind, solar PV	25
	Small hydro	35

**Tariff**

Generic tariff for small hydro projects (SHP) FY 2018-19:

Capacity	Levelised Cost (Rs./kWh)
Below 500 kW	6.48
500 kW-1 MW	5.84

Project-specific tariff shall be determined in the following cases:

- Small hydro projects (1 MW to 25 MW).
- For renewable energy projects which have been commissioned before 31 March 2017 without a power purchase agreement, the project's tariff shall be determined on an annual basis.
- Solar PV.
- Wind energy.
- MSW and RDF based projects with Rankine cycle technology.
- Hybrid projects approved by MNRE.
- Any other new renewable energy technologies approved by MNRE.

Financial and operational norms specified in the regulations will be ceiling norms.

**Capital Cost**

All capital costs are for FY 2018-19, and the same for subsequent years are determined using indexation formula given in Regulations.

Technology	Capital Cost (Rs.Lakh/kW)
Wind	Project-specific
SHP - below 500 kW	1.4
SHP - from 500 kW to below 1000 kW	1.2
Solar PV	Project-specific
MSW/RDF	Project-specific

<b>Capacity Utilization Factor</b>	<b>Technology</b>	<b>CUF</b>		
	Wind	Annual Mean Wind Power Density (w/m <sup>2</sup> ) at 100 meters hub-height	CUF	
		Up to 220	22%	
		221-275	24%	
		276-330	28%	
		331-440	33%	
		>440	35%	
	Small hydro*	45%		
	Solar PV	19%**		
	MSW/RDF	Stage	MSW	RDF
During stabilization***		65%	65%	
During the remaining period of the first year(after stabilization)		65%	65%	
From 2nd year onwards		75%	80%	
*Normative CUF is net of free power, if any, to the home state. **The APERC may deviate from the norm in case of project specific tariff. ***The stabilization period shall not be more than 6 months from the date of commissioning of the project.				
<b>Auxiliary Consumption</b>	<b>Technology</b>	<b>Auxiliary Consumption</b>		
	Small hydro	1%		
	Solar PV	0.25%*		
	MSW/RDF	15%		
	*The APERC may deviate from the norms in case of project-specific tariff determination.			

<b>Operation and Maintenance (O&amp;M) Expenses</b>	<b>Technology</b>	<b>O&amp;M Cost (Rs.Lakh/MW) for FY 2018-19</b>
	Wind	Project-specific
	Hydro power below 5 MW	40.24
	Hydro power 5 MW - 25 MW	30.17
	Solar PV	Project-specific
	MSW/RDF	Project-specific
	O&M cost is escalated at 5.72% per annum over the tariff period.	
<b>Interest Rate on Loans</b>	<ul style="list-style-type: none"> <li>• Average State Bank of India marginal cost of funds based lending rate (one-year tenor) prevalent during the last available six months plus 200 basis points.</li> <li>• For SHP, the interest on loan is calculated at 10.51%.</li> </ul>	
<b>Depreciation</b>	<ul style="list-style-type: none"> <li>• 5.28% for the first 13 years and the remaining depreciation is spread over the residual useful life of the project taking 10% of the project cost as the salvage value of the project.</li> <li>• SHP rate of depreciation is 5.28% for 13 years and 1.425% for the remaining life of the project.</li> </ul>	
<b>Return on Equity</b>	14% to be grossed up by the prevailing minimum alternate tax as on 1 April of the previous year for the entire useful life of the project.	
<b>Interest on Working Capital</b>	Average State Bank of India marginal cost of funds based lending rate (one-year tenor) prevalent during the last available six months plus 300 basis points.	
<b>Station Heat Rate (only for MSW/RDF Projects)</b>	4200 kCal/kWh.	
<b>Calorific Value (only for RDF)</b>	2500 kCal/kg.	
<b>Fuel Cost</b>	RDF - Rs.1800/MT for FY 2018-19 to be escalated at 5% per annum. MSW - No fuel cost.	

## OTHER PROVISIONS

Tariff Structure and Design	Generic or project specific: <ul style="list-style-type: none"> <li>• Levelised</li> <li>• Single part tariff for technologies not using fuel.</li> <li>• Single part with fixed cost and fuel cost component for technologies that are using fuel.</li> </ul>
Despatch Principles	<ul style="list-style-type: none"> <li>• All renewable energy power plants shall be treated as 'MUST RUN' power plants.</li> <li>• Scheduling of wind and solar energy shall be governed by: <ul style="list-style-type: none"> <li>- Arunachal Pradesh State Electricity Grid Code as amended from time to time.</li> <li>- Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Third Amendment) Regulations, 2015 as amended from time to time.</li> <li>- Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Second Amendment) Regulations, 2015 as amended from time to time.</li> </ul> </li> </ul>
Subsidy or/and Incentives by Government	Any incentive or subsidy provided by the central or state government including accelerated depreciation benefit would be taken into consideration for determination of tariff.
Taxes and Duties	As pass-through on actual incurred basis.
Rebate	<ul style="list-style-type: none"> <li>• 2% - for payment through Letter of Credit.</li> <li>• 1% - for payment not through Letter of Credit but within 1 month from the date of presentation of bills.</li> </ul>
Late Payment Surcharge	1.25% per month for payment of bills beyond a period of 60 days from the date of billing.
Links	<a href="http://www.apserc.nic.in/index.html">http://www.apserc.nic.in/index.html</a>
References	<a href="http://www.apserc.nic.in/pdf/199.%20EOG.%20No.%20199.%20APSERC%20(2018).pdf">http://www.apserc.nic.in/pdf/199.%20EOG.%20No.%20199.%20APSERC%20(2018).pdf</a> Generic Tariff order 2019-20 <a href="http://www.apserc.nic.in/pdf/Generic%20Tariff%20Order%202019-20-%20signed%20copy.pdf">http://www.apserc.nic.in/pdf/Generic%20Tariff%20Order%202019-20-%20signed%20copy.pdf</a>