# Kerala Renewable Energy and Net Metering Regulation 2020

## HIGHLIGHTS

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| **Tariff Period & Useful life of plant** | Technology | No. of Years |
| | Municipal solid waste (MSW) and refuse derived fuel (RDF) based power | 20 |
| | Wind, solar PV , solar thermal | 25 |
| | Small hydro | 35 |
| | Biomass (Rankine cycle), non-fossil fuel cogeneration plant | 20 |
| **Control Period** | 5 years, of which the first year shall be FY 2019-20. | |
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| **Tariff (Rs./kWh)** | • Project specific tariff shall be determined for the following cases:<br>• Small hydro projects (1 MW to 25 MW).<br>• Renewable energy projects which have been commissioned before 31 March 2017 but for which no power purchase agreement has been signed till the 31 March 2017, the Project Tariff shall be determined on an annual basis.<br>• Solar PV.<br>• Wind energy.<br>• MSW and RDF based projects with Rankine cycle technology.<br>• Renewable-renewable and renewable-conventional sources for which renewable energy technology has been approved by MNRE.<br>• Any other new renewable energy technologies approved by MNRE.<br>• Financial and operational norms specified in the regulation will be ceiling norms. | |

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| **Capital Cost** | All capital costs are for FY 2018-19, and the same will remain valid for the entire duration of the control period unless reviewed earlier. | |
| | Technology | Capital Cost<br>(in Rs. lakh/MW) |
| | Wind | Project specific |
| | Small hydro below 500 kW | 1400 |
| | Small hydro between 500 kW and 1 MW | 1200 |
| | Solar PV | Project specific |
| | MSW/RDF | Project specific |
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<table>
<tr><td rowspan="11">Capacity Utilization Factor</td><td>Technology</td><td colspan="3">CUF</td></tr>
<tr><td rowspan="6">Wind</td><td>Annual Mean Wind Power Density (w/m$^2$) at 100 meter hub-height</td><td colspan="2">CUF</td></tr>
<tr><td>up to 220</td><td colspan="2">22%</td></tr>
<tr><td>221-275</td><td colspan="2">24%</td></tr>
<tr><td>276-330</td><td colspan="2">28%</td></tr>
<tr><td>331-440</td><td colspan="2">33%</td></tr>
<tr><td>>440</td><td colspan="2">35%</td></tr>
<tr><td>Small hydro*</td><td colspan="3">45%</td></tr>
<tr><td>Solar PV</td><td colspan="3">19%**</td></tr>
<tr><td rowspan="4">MSW/RDF</td><td>Stage</td><td>MSW</td><td>RDF</td></tr>
<tr><td>During Stabilization***</td><td>65%</td><td>65%</td></tr>
<tr><td>During the remaining period of the first year (after stabilization).</td><td>65%</td><td>65%</td></tr>
<tr><td>From 2nd year onwards.</td><td>75%</td><td>80%</td></tr>
<tr><td colspan="4">*Normative CUF is net of free power, if any, to the home state.<br>**The Commission may deviate from the norm in case of project specific tariff<br>***The stabilization period shall not be more than 6 months from the date of commissioning of the project.</td></tr>
<tr><td rowspan="6">Auxiliary Consumption</td><td>Technology</td><td colspan="3">Auxiliary Consumption</td></tr>
<tr><td>Wind</td><td colspan="3">-</td></tr>
<tr><td>Small hydro</td><td colspan="3">1%</td></tr>
<tr><td>Solar PV</td><td colspan="3">0.25%*</td></tr>
<tr><td>MSW/RDF</td><td colspan="3">15%</td></tr>
<tr><td colspan="4">* The Commission may deviate from the norms in case of project specific tariff determination.</td></tr>
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| **Operation and Maintenance (O&M)Expenses** | Technology | O&M Cost<br>(in Rs. Lakh/MW) for FY 2017-18 |
| | Wind | Project specific |
| | Small hydro below 5 MW | 38.06 |
| | Small hydro between 5 MW and 25 MW | 28.54 |
| | Solar PV | Project specific |
| | MSW/RDF | Project specific |
| | O&M cost is escalated at 5.72% per annum over the tariff period. | |
| **Interest Rate on Loans** | 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. | |
| **Depreciation** | 5.28% for the first 13 years and remaining depreciation spread over residual useful life of the project considering 10% of project cost as the salvage value of the project. | |
| **Return on Equity** | 14% to be grossed up by prevailing minimum alternate tax as on 1 April of the previous year, for the entire useful life of the project. | |
| **Interest on Working Capital** | 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. | |
| **Station Heat Rate (Only for MSW/RDF Projects)** | 4200 kCal/kWh. | |
| **Calorific Value (Only for RDF)** | 2500 kCal/kg. | |
| **Fuel Cost** | RDF – Rs.1800/MT for FY 2018-19 to be escalated at 5% per annum.<br>MSW – No fuel cost. | |

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| **Tariff structure and design** | • Generic or project specific.<br>• Levelised.<br>• Single part tariff for technologies not using fuel.<br>• Single part with fixed cost and fuel cost component for technologies using fuel. |

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| **Despatch Principles** | • All renewable energy power plants shall be treated as 'MUST RUN' power plants.<br>• Scheduling of wind and solar energy shall be governed by:<br>• Arunachal Pradesh State Electricity Grid Code, as amended from time to time<br>• Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Third Amendment) Regulations, 2015, as amended from time to time<br>• Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Second Amendment) Regulations, 2015, as amended from time to time. |
| **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** | • 2% - for payment through Letter of Credit.<br>• 1% - for payments not through Letter of Credit but within 1 month from the date of presentation of bills. |
| **Late payment surcharge** | 1.25% per month for payment of bills beyond a period of 60 days from the date of billing. |

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| **Control Period** | From date of notification until 31 March 2021. | | | |
| **Renewable Purchase Obligation (RPO)** | Year | Minimum quantum of purchase (%) from renewable energy sources (in kWh) | | |
| | | Solar | Non-solar | Total |
| | 2019-20 | 4.00 | 8.00 | 12.00 |
| | 2020-21 | 5.25 | 9.00 | 14.25 |
| | 2021-22 | 6.75 | 10.25 | 17.00 |
| | For FY 22 & FY 23 Commission will notify target later. | | | |
| **Obligated Entities** | Distribution licensee, captive consumer with fossil fuel plant except DG set. | | | |
| **Ways to Meet RPO** | • Net metered consumers generated energy can be disposed towards licensee RPO, condition to services set i.e. purchased or banked.<br>• Captive consumer can claim excess solar generation to meet non-solar RPO target. | | | |

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| **Certificates** | • Obligation to fulfill RPO from non-solar and solar sources shall be fulfilled through purchase of non-solar and solar certificates, respectively.<br>• Certificates purchased by obligated entities shall be submitted to the state agency in accordance with detailed procedure framed by the state agency. |
| **Effect of Default** | • In case of failure to fulfil RPO, obligated entities may be directed by the Commission to deposit into a separate fund an amount as determined by the Commission based on the shortfall in units and forbearance price.<br>• Fund so created shall be used only after approval by the Commission to purchase certificates or for any other purpose it may deem fit.<br>• In case of genuine difficulty in fulfilling the RPO target, the obligated entity may appeal before the Commission to carry forward the residual RPO target to the next year. |