HARYANA ELECTRCITY REGULATORY COMMISISON

(Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2021, Dated: 30.04.2021

<table>
<tr><th>Sl. No.</th><th>Description</th><th>Summary</th></tr>
<tr><td>1.</td><td>Control Period/ Review Period</td><td>The Control Period for the purpose of tariff determination under these Regulations shall be from the FY 2021-22 to the FY 2024-25.</td></tr>
<tr><td>2.</td><td>Tariff Period</td><td>• The Tariff Period for Renewable Energy power projects shall generally correspond to their respective project life or as may be agreed upon in the PPA.
• Tariff period under these Regulations is for Renewable Energy Power Plants with entirely new plant and machinery. The first year tariff shall be applicable from the CoD of the project and shall continue for 12 months from the CoD and thereafter the tariff for the second year shall be applicable on year to year basis i.e. for first 12 months from CoD, first year tariff shall be applicable, then for next twelve months second year tariff shall be applicable and so on and each period of such 12 months shall be termed as the tariff year.</td></tr>
<tr><td>3.</td><td>Project Specific tariff</td><td>Subject to the “Scope and Extent of application” of these Regulations, the project specific tariff, on case to case basis, may also be determined by the Commission.</td></tr>
<tr><td>4.</td><td>Applicability</td><td>These Regulations shall apply to the RE Power Projects set-up/to be set – up in Haryana and where the tariff is determined by the Commission u/s 62 of the Act for Grid Connected RE Projects up to an installed capacity of 2 MW except the general provisions for banking, RPO, Late Payment Surcharge/rebate etc. applicable for all concerned.</td></tr>
<tr><td>5.</td><td>Tariff Structure</td><td>1 The tariff for renewable energy technologies shall be single part tariff consisting of the following fixed cost components:-
(a) Return on equity capital;
(b) Interest on loan capital;
(c) Depreciation;
(d) Interest on working capital including margin money;
(e) Operation and maintenance expenses;
2 For RE technologies having fuel cost component, like biomass power projects and non-fossil fuel based cogeneration, single part tariff with two components, fixed cost component and fuel cost component, shall be determined.</td></tr>
<tr><td>6.</td><td>Tariff Design</td><td>1 The generic tariff, for the control period as per these Regulations, shall be determined, for the entire tariff period/useful life of the project.
2 For the purpose computation of levellised tariff, the discount factor equivalent to weighted average cost of capital {Term Loan (R) and Return on Equity (RoE)} shall be considered i.e. {(R x 0.7) + (RoE x 0.3)}.</td></tr>
<tr><td>7.</td><td>Despatch Principles</td><td>1 All renewable energy power plants except for Biomass power plants of installed capacity 10 MW and above shall be treated as ‘MUST RUN’ power plants.
2 Biomass power with installed capacity of 10 MW and above shall be subjected to scheduling and dispatch as specified under Haryana Grid Code and other relevant regulations including amendments thereto.</td></tr>
<tr><td>8.</td><td>Capital Cost</td><td><table><tr><th>Sr. No.</th><th>RE Source</th><th>Capital Cost
(in Rs. Crore/MW)</th></tr><tr><td>1.</td><td>Wind Energy</td><td>Determined by the Comm.</td></tr></table></td></tr>
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<table>
<tr><td rowspan="15"></td><td rowspan="15"></td><td rowspan="3">2.</td><td>Small Hydro</td><td colspan="2"></td></tr>
<tr><td>Below 5 MW</td><td colspan="2">7.80</td></tr>
<tr><td>5 MW to 25 MW</td><td colspan="2">9.00</td></tr>
<tr><td rowspan="3">3.</td><td>Biomass based Power Projects</td><td>Water Cooled Condenser</td><td>Air Cooled Condenser</td></tr>
<tr><td>Projects using fuel other than Rice Straw/Stubble</td><td>5.59</td><td>6.0</td></tr>
<tr><td>Project using Rice Straw/Stubble</td><td>6.10</td><td>6.52</td></tr>
<tr><td>4.</td><td>Non-Fossil Co-generation Project</td><td colspan="2">4.925</td></tr>
<tr><td>5.</td><td>Solar PV/Solar Thermal</td><td colspan="2">Determined by the Comm.</td></tr>
<tr><td>6.</td><td>Biomass Gasifier Plants</td><td colspan="2">5.93</td></tr>
<tr><td>7.</td><td>Biogas Plants</td><td colspan="2">11.86</td></tr>
<tr><td>8.</td><td>Municipal Solid Waste (WtE) based Power Projects based on Rankine Cycle</td><td colspan="2">15</td></tr>
<tr><td>9.</td><td>Renewable Hybrid Energy Projects</td><td colspan="2">Prevailing on market trends</td></tr>
<tr><td>10.</td><td>Renewable Energy with storage project</td><td colspan="2">Prevailing on market trends</td></tr>
<tr><td>9.</td><td>Debt Equity Ratio</td><td colspan="4">1 For generic tariff-70:30
2 For Project specific tariff, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.
3 where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.</td></tr>
<tr><td>10.</td><td>Loan and Finance Charges</td><td colspan="4">Loan Tenure-13 Yrs.
• For the purpose of computation of tariff, the normative interest rate shall be considered as the average Marginal Cost of funds based lending rate (MCLR) (one-year tenor) of SBI prevailing during the last available six months plus a margin of up to 200 basis points i.e. 2%.</td></tr>
<tr><td>11.</td><td>Depreciation</td><td colspan="4">1 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%.
2 No depreciation shall be allowed to the extent of grant or capital subsidy received for the project. Provided further that land is not a depreciable asset, and hence, its cost shall be excluded while computing 90% of the original cost of asset eligible for depreciation.
3 The depreciation rate for the first 13 years of the Tariff Period shall be 5.38% per annum and the remaining depreciation shall be spread over the remaining useful life of the project from 14th year onwards.</td></tr>
<tr><td>12.</td><td>Return on Equity</td><td colspan="4">1 The value base for the equity shall lower of the two either 30% of the capital cost or actual equity (in case of project specific tariff determination) as determined under Regulation.
2 The normative Return on Equity shall be as under:-
(a) 14% per annum calculated on normative Equity Capital.
(b) MAT/Corporate Tax applicable shall be considered as pass through.</td></tr>
<tr><td>13.</td><td>Interest on Working Capital</td><td colspan="4">Interest on Working Capital, for the purpose of tariff determination, shall be computed at the average Marginal Cost of funds based lending rate (MCLR) (one year tenor) of SBI prevailing during the last available six months plus an appropriate</td></tr>
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<tr><td></td><td></td><td>margin not exceeding 200 basis points i.e. 2%.</td></tr>
<tr><td>14.</td><td>Operation and Maintenance Expenses</td><td>Normative O&M expenses allowed during the first year of the Control Period under these Regulations shall be escalated at the rate of 2.93% per annum over the Tariff Period.
<table>
<tr><th>Sr. No.</th><th>RE Source</th><th>O & M Cost
(in Rs. Crore/MW)</th></tr>
<tr><td>1.</td><td>Wind Energy</td><td>Nil</td></tr>
<tr><td rowspan="3">2.</td><td>Small Hydro</td><td></td></tr>
<tr><td>Below 5 MW</td><td>0.33</td></tr>
<tr><td>5 MW to 25 MW</td><td>0.24</td></tr>
<tr><td>3.</td><td>Biomass Based Power Projects</td><td>0.4642</td></tr>
<tr><td>4.</td><td>Non-Fossil Co-generation Projects</td><td>0.24</td></tr>
<tr><td>5.</td><td>Solar PV/Solar Thermal</td><td>based on prevalent market conditions</td></tr>
<tr><td>6.</td><td>Biomass Gasifier Plants</td><td>0.613</td></tr>
<tr><td>7.</td><td>Biogas Plants</td><td>0.626</td></tr>
<tr><td>8.</td><td>Municipal Solid Waste (WtE) based Power Projects based on Rankine Cycle</td><td>6.5% of normative capital cost</td></tr>
<tr><td>9.</td><td>Renewable Hybrid Energy Projects</td><td>Prevailing on market trends</td></tr>
<tr><td>10.</td><td>Renewable Energy with storage project</td><td>Prevailing on market trends</td></tr>
</table></td></tr>
<tr><td>15.</td><td>Rebate</td><td>1 For payment of bills of the generating company through letter of credit, a rebate of 2% shall be allowed.
2 Where payments are made other than through letter of credit within a period of 30 days of presentation of bills by the generating company, a rebate of 1% shall be allowed.</td></tr>
<tr><td>16.</td><td>Late payment surcharge</td><td>1. Late Payment Surcharge shall be payable on the payment outstanding after the due date at the base rate of Late Payment Surcharge applicable for the period for the first month of default.
2. The rate of Late Payment Surcharge for the successive months of default shall increase by 0.5 percent for every month of delay provided that the Late Payment Surcharge shall not be more than 3 percent higher than the base rate at any time.
3. If a distribution licensee has any payment including Late Payment Surcharge outstanding against a bill after the expiry of seven months from the due date of the bill, it shall be debarred from procuring power from a power exchange or grant of short-term open access till such bill is paid.</td></tr>
<tr><td>17.</td><td>Sharing of CDM Benefits</td><td>1 100% of the gross proceeds on account of CDM benefit to be retained by the project developer in the first year after the date of commercial operation of the generating station i.e. 12 months from CoD.
2 In the second year, the share of the beneficiaries shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the generating company and the beneficiaries.</td></tr>
<tr><td>18.</td><td>Sharing of Other</td><td>Other Income i.e. proceeds from sale of bio-fertilizer/bye products etc. shall be</td></tr>
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<tr><td></td><td>Income</td><td colspan="3">shared in equal proportion, by the generating company and the beneficiaries.</td></tr>
<tr><td>19.</td><td>Subsidy or incentive by the Central/State Government</td><td colspan="3">1. The Commission shall take into consideration any incentive or subsidy offered by the Central or State Government, available to the generating company, for the renewable energy power plants while determining tariff under these Regulations.
2. Any grant, subsidy or incentives availed by renewable energy project, which is not considered at time of determination of tariff, shall be deducted by the beneficiary in subsequent bills after receipt of such grant, subsidy or incentive in suitable instalments or within such period as may be stipulated by the Commission.</td></tr>
<tr><td>20.</td><td>Taxes and Duties</td><td colspan="3">Any tax/duty levied by the appropriate Government shall be allowed as pass through on actual incurred basis and should have been actually paid to the authority (ies) concerned.</td></tr>
<tr><td rowspan="22">21.</td><td rowspan="22">Capacity Utilization Factor/Power Plant Factor</td><td>Sr. No.</td><td>RE Source Wind Energy</td><td>CUF/PLF</td></tr>
<tr><td rowspan="6">1.</td><td>Wind Energy (Annual Mean Wind Power Density (W/m2))</td><td></td></tr>
<tr><td>Up to 220</td><td>22%</td></tr>
<tr><td>221- 275</td><td>24%</td></tr>
<tr><td>276- 330</td><td>28%</td></tr>
<tr><td>331- 440</td><td>33%</td></tr>
<tr><td>441^{+}</td><td>35%</td></tr>
<tr><td>2.</td><td>Small Hydro</td><td>56%</td></tr>
<tr><td>3.</td><td>Biomass based Power Projects</td><td>80%</td></tr>
<tr><td rowspan="2">4.</td><td>Non-Fossil Co-generation Projects</td><td>53% (210 operating days)</td></tr>
<tr><td>Fuel other than bagasse</td><td>80%</td></tr>
<tr><td rowspan="2">5.</td><td>Solar PV</td><td>21%</td></tr>
<tr><td>Solar Thermal</td><td>23%</td></tr>
<tr><td>6.</td><td>Biomass Gasifier Plants</td><td>85%</td></tr>
<tr><td>7.</td><td>Biogas Plants</td><td>90%</td></tr>
<tr><td rowspan="4">8.</td><td>Municipal Solid Waste (WtE) based Power Projects based on Rankine Cycle</td><td></td></tr>
<tr><td>During Stabilisation</td><td>65%</td></tr>
<tr><td>During the remaining period of the first year (after stabilization)</td><td>65%</td></tr>
<tr><td>From 2nd Year onwards</td><td>75%</td></tr>
<tr><td>9.</td><td>Renewable Hybrid Energy Projects</td><td>30%</td></tr>
<tr><td rowspan="3">10.</td><td>Renewable Energy with storage project</td><td>Prevailing on market trends</td></tr>
<tr><td>Solid state batteries</td><td>80%</td></tr>
<tr><td>Pumped storage</td><td>75%</td></tr>
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<tr><td colspan="6"></td></tr>
<tr><td rowspan="9">22.</td><td rowspan="9">Auxiliary Consumption</td><td>Sr. No.</td><td>RE Source</td><td colspan="2">Auxiliary Consumption</td></tr>
<tr><td>1.</td><td>Small Hydro</td><td colspan="2">1.0%</td></tr>
<tr><td rowspan="2">2.</td><td rowspan="2">Biomass based Power Projects</td><td>water cooled condenser</td><td>Air cooled condenser</td></tr>
<tr><td>10%</td><td>12%</td></tr>
<tr><td>3.</td><td>Non-Fossil Co-generation Projects</td><td colspan="2">8.5%</td></tr>
<tr><td>4.</td><td>Solar PV</td><td colspan="2">0.25%</td></tr>
<tr><td>5.</td><td>Biomass Gasifier Plants</td><td colspan="2">10%</td></tr>
<tr><td>6.</td><td>Biogas Plants</td><td colspan="2">12%</td></tr>
<tr><td>7.</td><td>Municipal Solid Waste (WtE) based Power Projects based on Rankine Cycle</td><td colspan="2">15%</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td rowspan="5">23.</td><td rowspan="5">Station Heat Rate</td><td>Sr. No.</td><td>RE Source</td><td colspan="2">Station Heat Rate
(in kCal / kWh)</td></tr>
<tr><td rowspan="3">1.</td><td>Biomass based Power Projects</td><td>water cooled condenser</td><td>Air cooled condenser</td></tr>
<tr><td>Travelling Grate</td><td>4200</td><td>4200</td></tr>
<tr><td>AFBC Boiler</td><td>4125</td><td>4125</td></tr>
<tr><td>2.</td><td>Non-Fossil Co-generation Projects</td><td colspan="2">3600</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td rowspan="4">24.</td><td rowspan="4">Calorific Value</td><td>Sr. No.</td><td>RE Source</td><td colspan="2">Calorific Value
(in kCal/kg)</td></tr>
<tr><td>1.</td><td>Biomass based Power Projects</td><td colspan="2">3100</td></tr>
<tr><td rowspan="2">2.</td><td>Non-Fossil Co-generation Projects</td><td colspan="2">2250</td></tr>
<tr><td>Other than Bagasse</td><td colspan="2">3100</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td rowspan="7">25.</td><td rowspan="7">Fuel Cost</td><td>Sr. No.</td><td>RE Source</td><td colspan="2">Fuel Cost
(in Rs. /MT)</td></tr>
<tr><td>1.</td><td>Biomass based Power Projects</td><td colspan="2">3000</td></tr>
<tr><td rowspan="3">2.</td><td>Non-Fossil Co-generation Projects</td><td colspan="2"></td></tr>
<tr><td>Price of Bagasse</td><td colspan="2">1027</td></tr>
<tr><td>Price of other Non-Fossil Fuel</td><td colspan="2">3000</td></tr>
<tr><td>3.</td><td>Biomass Gasifier Projects</td><td colspan="2">3000</td></tr>
<tr><td>4.</td><td>Biogas Plants</td><td colspan="2">685</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td rowspan="2">26.</td><td rowspan="2">Specific Fuel Consumption</td><td>Sr. No.</td><td>RE Source</td><td colspan="2">SFC (in Kg/kWh)</td></tr>
<tr><td>1.</td><td>Biomass Gasifier Projects</td><td colspan="2">1.25</td></tr>
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<tr><td></td><td></td><td><table><tr><td>2.</td><td>Biogas Plants</td><td>3.0</td></tr></table></td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>27.</td><td>Renewable Purchase Obligation</td><td>
<table>
<tr><th rowspan="2">FY</th><th rowspan="2">Solar RPO*</th><th colspan="4">Non Solar RPO</th></tr>
<tr><th>HPO**</th><th>Other than Non-Solar RPO*</th><th>Total Non-Solar RPO*</th><th>Total RPO</th></tr>
<tr><td>2021-22</td><td>8.00%</td><td>0.00%</td><td>3.00%</td><td>3.00%</td><td>11.00%</td></tr>
<tr><td>2022-23</td><td>9.00%</td><td>0.35%</td><td>5.00%</td><td>5.35%</td><td>14.35%</td></tr>
<tr><td>2023-24</td><td>10.00%</td><td>0.66%</td><td>6.00%</td><td>6.66%</td><td>16.66%</td></tr>
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**HPO within Non Solar Renewable Purchase Obligation (RPO) means “Hydropower Purchase Obligation, to be met from purchase of power/Hydro Energy Certificates from Large Hydropower Projects having capacity of more than 25 MW (LHPs) which come into commercial operation after 08.03.2019.
RPO shall be calculated in energy terms as a percentage of total consumption of electricity excluding consumption met from RE sources and hydro sources (LHPs).
HPO benefits may be met from the power procured from eligible LHPs commissioned on and after 8.3.2019 and upto 31.03.2030 in respect of 70% of the total generated capacity for a period of 12 years from the date of commissioning. Free power is to be provided as per agreement with the State Government and that provided for Local Area Development Fund (LADF), shall not be included within this limit of 70% of the total generated capacity.
In case the free power, as above, is insufficient to meet the HPO obligations, then the State would have to buy the additional hydro power to meet its HPO obligations or may have to buy the corresponding amount of Hydro Energy Certificate to meet the non-solar hydro renewable purchase obligations.
On achievement of Solar RPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess non-solar energy consumed beyond specified Non-Solar RPO for that particular year. Similarly, on achievement of Other Non-Solar RPO compliance to the extent of 80% and above, remaining shortfall if any, can be met by excess solar or eligible hydro energy consumed beyond specified Solar RPO or HPO for that particular year.

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<tr><td>28.</td><td>Certificates</td><td>Certificates issued under the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 shall be the valid instruments for the discharge of the mandatory obligations set out in these regulations for the obligated entities to purchase electricity from renewable energy sources.</td></tr>
<tr><td>29.</td><td>Effect of default</td><td>1 If the obligated entities do not fulfill the renewable purchase obligation as provided in these regulations during any year and also does not purchase the certificates, the Commission may direct the obligated entity to deposit into a separate fund, to be created and maintained by such obligated entity, such amount as the Commission may determine on the basis of the shortfall in the RPO determined under these regulations from time to time at the forbearance price decided by the Central Commission
2 The fund so created shall be utilized, as may be directed by the Commission, for purchase of the renewable energy certificates.</td></tr>
<tr><td>30.</td><td>Banking</td><td>1 The solar power shall be allowed to be banked with the distribution licensee(s) subject to the condition that 5% of power banked in (kind) shall be deducted toward banking charges.
2 The banking shall be allowed throughout the year, however, the drawl of banked power shall not be allowed during the peak season period (July to mid October).
3 The RE power shall be adjusted as first charge in order of consumption of</td></tr>
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		energy by a consumer. The banking will be counted on daily basis for the purpose of monthly account.
31.	**Cost of Evacuation System**	The State transmission utility or the Transmission/Distribution Licensee shall bear the cost of Extra High Voltage (EHV)/ High Voltage (HV) transmission line up to a distance of 10 km. from the inter-connection point.
32.	**Discount Factor**	The discount factor for working out levelised generic tariff shall be the weighted average cost of capital (WACC).