## Part -XIV
## Technology Specific Parameters for Renewable Energy with Storage project

### 83 Capital Cost

83.1 The Commission shall determine only project specific capital cost for renewable energy with storage project considering the prevailing market trends.

### 84 Rated Capacity of Energy Storage System (ESS)

84.1 The minimum rated energy capacity of an Energy Storage System (ESS) shall be equal to 'X/2' MWh, where 'X' is the installed capacity of the Project in MW.

For example: In case, the installed capacity of a Project is 20 MW, then minimum energy rating of ESS installed shall be 10 MWh.

### 85 Storage Efficiency

85.1 The Commission shall approve the storage efficiency only for project specific tariff:

Provided that the minimum efficiency for storage based on technology of solid-state batteries shall be 80%:

Provided further that the minimum efficiency for storage based on technology of pumped storage shall be 75%:

85.2 Efficiency of storage component of renewable energy with storage project shall be measured as ratio of output energy received from storage and input energy supplied to the storage component of such project, on annual basis.

### 86 Operation and Maintenance expenses

86.1 The Commission shall determine only project specific O&M expenses considering the prevailing market trends.

### 87 Tariff determination for Energy Storage

87.1 The tariff for renewable energy with storage project shall be a composite tariff or differential tariff based on time of day, determined for energy supplied from the Project including the energy supplied from the storage facility:

Provided that such tariff may be determined for supply of power on round the clock basis or for time periods as agreed by Project Developer and Beneficiary.

## Part – XV
## Others

### 88 Tariff for existing Plants set up as per Government of Rajasthan and Government of India Policies

88.1 Tariff for electricity supply to the distribution licensee by wind energy plants, for which Power Purchase Agreements (PPA) have been executed under GoR policy of 1999 & 2000 and commissioned before 31.03.2007 for the Control Period shall be as hereunder:

| Sr. No. | Renewable Energy Generation during the year | Tariff in Rs. Per kWh for plants under GoR policy of | |
|---|---|---|---|
| | | 11.3.99 | 4.2.2000 |
| 1 | 2020-21 | 5.7171 | 5.7135 |
| 2 | 2021-22 | 5.7171 | 5.7135 |
| 3 | 2022-23 | 5.7171 | 5.7135 |

Provided that the above tariff shall be applicable if the energy is being supplied from these plants under the PPA period. For period beyond PPA period, the Tariff for Renewable Projects during extended period as per Regulation 10 shall be applicable.

88.2 Tariff for electricity supply to the distribution licensee by Biomass power plants, for which Power Purchase Agreements (PPA) have been executed under GoR Policy of 1999 and commissioned before 30.09.2008 for the Control Period shall be as under:

| Sr. No. | Renewable Energy Generation during the year | Tariff in Rs. Per kWh for plants under GoR policy of 11.3.99 |
|---|---|---|
| 1 | 2020-21 | 8.0445 |
| 2 | 2021-22 | 8.4467 |
| 3 | 2022-23 | 8.8690 |

Provided that the above tariff shall be applicable if the energy is being supplied from these plants under the PPA period. For period beyond PPA period, the Tariff for Renewable Projects during extended period as per Regulation 10 shall be applicable.

88.3 The tariff for electricity supply to the Distribution Licensee by renewable energy power plants other than those covered by sub regulation 88.1 and which are commissioned up to 31.3.07(for wind power plant) under GoR policies of 2003 & 2004 (original as well as revised) shall be as hereunder, being the same as was applicable for twenty years as per the said Policy:

| Sr. No. | Renewable energy generation during the year | Tariff in (Rs. per kWh) as per policy dated | | |
|---|---|---|---|---|
| | | 30.4.03 | 25.10.04 | 25.10.04 |
| | | For wind power plant | For wind power plant | For wind power plant (amended on 24.2.06) |
| 1 | 2020-21 | 3.92 | 3.36 | 3.79 |
| 2 | 2021-22 | 3.92 | 3.36 | 3.79 |
| 3 | 2022-23 | 3.92 | 3.36 | 3.79 |
| 4 | 2023-24 | 3.92 | 3.36 | 3.79 |

Provided that the above tariff shall be applicable if the energy is being supplied from these plants under the PPA period. For period beyond PPA period, the Tariff for Renewable Projects during extended period as per Regulation 10 shall be applicable.

88.4 **Solar Power Projects (For projects commissioned under Generation based incentive scheme of Govt of India)**

The total tariff payable by Discoms to the solar power producer for projects commissioned under Generation Based Incentive of Govt of India shall be as under:

**A. Tariff for first 10 years from COD**

| Sr. No. | Particulars | SPV Technology | CSP Technology |
|---|---|---|---|
| 1. | Solar power plants eligible for full GBI as per GoI scheme | Rs.15.78 /kWh | Rs.13.78 /kWh |
| 2. | Solar power plants eligible for reduced GBI as per GoI scheme | Rs.15.18 /kWh | Rs.13.18 /kWh |

**B. Tariff after 10 years from COD**

The tariff after 10 years from COD shall be equivalent to the tariff paid by Distribution Licensee for procurement of power during 10$^{th}$ year of operation from COD of the project excluding GBI Incentive i.e., Rs. 4.81/kWh (Rs. 4.03/kWh + Additional Rs. 0.78/kWh) for the remaining tenure of PPA. In case the Solar Project Developer does not want to supply power to Distribution Licensees at this tariff, Solar Project Developer is free to sell power to any other entity.

**89 Grid Connectivity**

89.1 Grid connectivity charges of Rs. 2 Lakh per MW shall be payable by the Renewable Energy Projects to Transmission Licensee or Distribution Licensee, as the case may be.

89.2 The power injection into the State grid shall be limited to the capacity indicated below.

| Sr. No. | Total Power fed through a feeder (in MW) | | | | |
|---|---|---|---|---|---|
| | | **11 kV** | **33 kV** | **132 kV** | **220 kV** |
| 1 | ACSR Panther conductor | 3 MW | 12 MW | 50 MW | - |
| 2 | ACSR Dog conductor | 2 MW | 6 MW | - | - |
| 3 | ACSR Racoon conductor | 1 MW | 2 MW | - | - |
| 4 | ACSR Zebra | - | - | - | Above 50 MW & up to 150 MW |
| 5 | As per SIL for short line | - | - | 90 MW | 180 MW |

Provided that for short line length, the envisaged capacity of the line may be considered about 1.2 to 2.0 times the Surge Impedance Loading (SIL) of the line.

**90 Metering**

90.1 In respect of sale of energy to the Distribution Licensee, the metering for the purpose of energy accounting shall be as under:

(a) For Solar PV and solar thermal plants, the metering shall be at the line isolator on the outgoing feeder on HV side of the generator transformer.

(b) For wind power plants supplying power through pooling arrangement, the metering shall be at the grid substation of the licensee.

Provided that for the said metering at the grid substation of licensee, the following losses shall be considered:

(a) Losses of 1% for metering up to 33 kV.

(b) Losses of 2.5 % for metering at 132 kV and above.

90.2 In respect of sale of energy to the Distribution Licensee, from Biomass, Biogas, Biomass Gasifier based power plants, Non-fossil fuel based cogeneration plants, Municipal solid waste based plants and any other technologies approved by MNRE which does not use pooling arrangement for the supply of power, the metering for the purpose of accounting shall be at the line isolator on the outgoing feeder on HV side of the generator transformer.

90.3 Biomass power plants, covered under GoR Policy, 1999, shall also be allowed to shift their meters to the line isolator of the outgoing feeder on HV side of the generator, if it opts so, subject to the technical feasibility and acceptance by the Distribution Licensee. However, the cost of shifting shall be borne by the concerned generator.

90.4 In case of open access for renewable energy and in case of sale of electricity under REC mechanism, the metering would be at EHV substation of transmission licensee or HV station of distribution licensee as the case may be, and the provision of losses, as specified above, shall not be applicable.

**91 Other Charges**

91.1 The following charges shall be applicable for existing as well as upcoming Renewable energy projects:

91.2 **kVArh charges**

91.2.1 Net kVArh drawal by generating plants from the Grid shall be billed at 15.00 paise / kVArh w.e.f. 01.04.2020 escalated annually at 0.50 paise / kVArh, till the same are

specified in any Regulation or in any Order issued by the Commission.

91.3 **Import of power by Generating Stations**

91.3.1 Energy drawn by the generating station from the grid during shutdown and outages, and for restarting after shut down, shall be set off against the energy sold to the Distribution Licensee within the State on a quarterly basis:

Provided that in case of drawal by the generating station is more than its injection in a month, the excess drawal during the month shall be carried forward to the subsequent month and so on. Such cumulative excess drawal, if any, shall be settled on quarterly basis at tariff applicable to a Large Industrial consumer. The first quarter would begin from April 1 of the relevant year:

Provided further that where sale to Distribution Licensee is not being effected or where sale to distribution licensee is under REC mechanism, such drawal from the grid shall be billed at tariff for temporary supply applicable to HT Industrial consumer (tariff category HT-5) on daily basis.

91.4 **Transmission & wheeling charges**

91.4.1 In case of third party sale or for captive use both within the State or outside the State, the transmission charges and wheeling charges shall be recovered in cash and transmission losses and wheeling losses shall be recovered in kind 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.

Provided that, notwithstanding, anything contrary mentioned in other Regulations, time being in force, Wheeling Charges for Renewable Energy Projects shall be applicable on per unit basis on the total energy wheeled and not on the basis of open access contracted capacity.

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

Provided that in case of Power Purchase Agreements executed and plants commissioned up to 31.03.2007 under the State Government Policies specified in Regulation 88, the charges as per Policy shall be applicable unless RE power plant opts otherwise.

91.5 **SLDC Fees and Charges**

91.5.1 SLDC fees and charges shall be as specified in RERC (Levy of fee and charges by the State Load Despatch Centre) Regulations, 2004, as amended from time to time.

91.6 **Cross-Subsidy Surcharge and Additional Surcharge**

91.6.1 The Cross-subsidy surcharge and Additional Surcharge as determined by the Commission from time to time shall be applicable in case of open access transactions based on renewable energy power stations.

**92 Renewable Energy Based Captive Power Plants**

92.1 The capacity for new renewable energy-based captive generating plant under these Regulations shall not be less than one MW or MWp as the case may be.

92.2 The maximum permissible capacity of eligible individual new renewable energy-based captive generating plant including renewable energy based plant installed behind the meter shall be limited to Average Annual Demand as specified in these Regulations:

Provided that eligible individual renewable energy captive generating plant shall utilise the same service line and installation for injection of power into the grid as well as drawal of power from the distribution licensee.

92.3 The maximum permissible energy to be consumed or banked from new renewable energy captive generating plant shall be limited to the energy corresponding to the minimum Capacity Utilisation Factor/Plant Load Factor as applicable for respective technology as specified in these Regulations:

Provided the energy consumed in excess of the above limit shall be treated as deemed drawl from the distribution licensee and will be billed accordingly.

**93 Banking**

93.1 Energy shall be allowed to be banked at consumption end for only captive consumption within the State:

Provided that no banking facility shall be allowed for Renewable Energy plants supplying power to third party under open access and for consumption from the Renewable Energy plant installed behind the meter without any bi-directional meter in the same premises:

The Banking facility shall only be allowed for the consumers consuming upto 20% energy from the Captive Power plant on annual basis. No banking facility shall be allowed for the consumers, whose captive consumption is more than 20% of total consumption on annual basis.

93.2 Period of banking:

93.2.1 The banking shall be allowed on annual basis for the financial year.

93.3 Energy Accounting:

93.3.1 RE Power Generator/Developer shall intimate to SLDC and to the concerned Distribution Licensee on first day of every month, out of available energy for that particular month, the quantum of energy it wishes to bank for captive consumption within the State:

Provided that where no such intimation is received on or before first day of the month, the intimation last received would become applicable for the month.

93.3.2 Notwithstanding anything contrary contained in any other Regulations time being in force the Energy Accounting shall be as under.

(a) If in any block injected energy is more than the energy drawn, the excess energy shall be computed:
Provided that the excess energy of each time block shall be cumulated till the end of the month and shall be set off against the cumulative drawl of energy from Discom in the same month.

(b) The remaining excess injected energy, if any at the end of the month shall be carried forward to the next month. The cumulative energy banked during each time block till the end of particular month shall be set off against the cumulative drawal during that particular block till the end of respective month. Unutilized banked energy at the end of financial year shall lapse and no compensation shall be applicable on unutilized banked energy at the end of the financial year.

93.4 Banking charges at the rate of 10% of banked energy in each month would be payable in kind.

**94 Parallel Operation Charges**

94.1 The connectivity of Renewable Energy Based Captive Power Plant to the Grid or State transmission system shall be governed by the connection conditions stipulated under State Grid Code and Connectivity Regulations of Central Electricity Authority notified in accordance with sub-section (b) of Section 73 of the Act.

94.2 The Commission may stipulate from time to time the 'parallel operation charges' based on Petition filed by Distribution Licensee to be applicable for parallel operation of the Renewable Energy based Captive Power Plant (with co-located loads) or Renewable Energy based Co-Generating plants with the grid separately.

Provided that where Renewable Energy based Captive Power Plant is located at different place and part load of consumer is connected at place of CPP and part of load receives power through open access from Captive Power Plant located at different place, parallel operation charges shall be applicable on part load which is co-located with Renewable Energy based Captive Power Plant.

## Part – XVI
## Miscellaneous

### 95 Deviation from provisions of these Regulations

95.1 The Commission may deviate from any of the provisions contained in these Regulations on a suo-motu basis having regard to the circumstances of the case:

Provided that the reasons for such deviation shall be recorded in writing.

### 96 Power to amend

96.1 The Commission may, at any time, vary, alter, modify or amend any provisions of these Regulations.

### 97 Power to Relax

97.1 The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these regulations suo-moto or on an application made before it by an interested person.

### 98 Power to remove difficulties

98.1 If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may either suo-motu or on a petition, by general or specific order, make such provisions not inconsistent with the provisions of the Act as may appear to be necessary for removing the difficulty.

By Order of the Commission,

Secretary

**Annexure-I**

## Abbreviations

| | | |
|---|---|---|
| COD | : | Commercial Operation Date |
| CPP | : | Captive Power Plant |
| CUF | : | Capacity Utilisation Factor |
| EHV | : | Extra High Voltage |
| FY | : | Financial Year |
| GOI | : | Government of India |
| GOR | : | Government of Rajasthan |
| IEGC | : | Indian Electricity Grid Code |
| kV | : | Kilo Volt |
| kVARh | : | Kilo Volt Ampere Reactive hour |
| kWh | : | Kilo Watt Hour |
| MNRE | : | Ministry of New and Renewable Energy |
| MW | : | Mega Watt |
| NLDC | : | National Load Despatch Centre |
| O&M | : | Operation and Maintenance |
| PLF | : | Plant Load Factor |
| PPA | : | Power Purchase Agreement |
| RDF | : | Refused Derived Fuel |
| RE | : | Renewable Energy |
| RERC | : | Rajasthan Electricity Regulatory Commission |
| RPO | : | Renewable Purchase Obligation |
| RRECL | : | Rajasthan Renewable Energy Corporation Limited |
| RVPN | : | Rajasthan Rajya Vidyut Prasaran Nigam Limited |
| R&M | : | Repair and Maintenance |
| SLDC | : | State Load Despatch Centre |

**Form-1.1: Template for (Wind/ Small hydro/Solar PV/ Solar Thermal/RE Hybrid/RE with Storage)**

| Sl. No. | Assumption Head | Sub-head | Sub-head (2) | Unit | Parameter |
|---|---|---|---|---|---|
| 1 | Power Generation | Capacity | Installed Power Generation Capacity | MW | |
| | | | Capacity Utilisation Factor (CUF) | % | |
| | | | Auxiliary Consumption | % | |
| | | | Commercial Operation Date (COD) | dd/mm/ yyyy | |
| | | | Useful Life | Years | |
| 2 | Project Cost | Capital Cost | Normative Capital Cost | Rs. Crore/ MW | |
| | | | Capital Cost | Rs. Crore | |
| | | | Capital Subsidy, if any | Rs. Crore | |
| | | | Net Capital Cost | Rs. Crore | |
| 3 | Financial Assumption | Debt Equity | Tariff Period | Years | |
| | | | Debt | % | |
| | | | Equity | % | |
| | | Debt Component | Total debt amount | Rs. Crore | |
| | | | Total equity amount | Rs. Crore | |
| | | | Loan Amount | Rs. Crore | |
| | | | Moratorium Period | Years | |
| | | | Repayment Period (incl moratorium) | Years | |
| | | | Interest Rate | % | |
| | | Equity Component | Equity Amount | Rs. Crore | |
| | | | Return on Equity for first 20 years | % p.a. | |
| | | | Return on Equity after 20 years | % p.a. | |
| | | | Discount Rate | % | |
| | | Depreciation | Dep Rate for 1st 15 years | % | |
| | | | Dep rate 16th year onwards | % | |
| | | Incentives | GBI, if any | Rs. Crore | |
| | | | Period for GBI | Years | |
| 4 | O& M Expenses | Normative O&M Expense | | Rs. Lakh/MW | |
| | | O&M Expenses p.a. | | Rs. Crore | |
| | | Escalation Factor | | % | |
| 5 | Working Capital | O&M Expenses | | Month | |
| | | Maintenance Spares | % of O&M Expenses | % | |
| | | Receivables | | Month | |
| | | Interest on Woking Capital | | % per annum | |

**Form-1.2: Template for (Biomass/MSW/RDF)**

| Sl. No. | Assumption Head | Sub-head | Sub-head (2) | Unit | Parameter |
|---|---|---|---|---|---|
| 1 | Power Generation | Capacity | Installed Power Generation Capacity | MW | |
| | | | Aux Consumption | % | |
| | | | PLF (1st year) | % | |
| | | | PLF (2nd year onwards) | % | |
| | | | Commercial Operation Date | dd/mm/yyyy | |
| | | | Useful Life | Years | |
| 2 | Project Cost | Capital Cost/ MW | Normative Capital Cost | Rs. Crore /MW | |
| | | | Capital Cost | Rs. Crore | |
| | | | Capital Subsidy, if any | Rs. Crore | |
| | | | Net Capital Cost | Rs. Crore | |
| 3 | Financial Assumption | Debt Equity | Tariff Period | years | |
| | | | Debt | % | |
| | | | Equity | % | |
| | | Debt Component | Total debt amount | Rs. Crore | |
| | | | Total equity amount | Rs. Crore | |
| | | | Loan Amount | Rs. Crore | |
| | | | Moratorium Period | Years | |
| | | | Repayment Period (including moratorium) | Years | |
| | | | Interest Rate | % | |
| | | Equity Component | Equity Amount | Rs. Crore | |
| | | | Return on Equity for first 20 years | % p.a. | |
| | | | Return on Equity after 20 years | % p.a. | |
| | | | Discount Rate | % | |
| | | Depreciation | Dep Rate for 1st 15 years | % | |
| | | | Dep rate 16th year onwards | % | |
| | | Incentives | GBI, if any | Rs. Crore | |
| | | | Period for GBI | Years | |
| 4 | O&M Expenses | Normative O&M Expenses | | Rs. Lakh/MW | |
| | | O&M Expenses p.a. | | Rs. Crore | |
| | | Escalation Factor | | % | |
| 5 | Working Capital | O&M Expenses | | Month | |
| | | Maintenance Spares | % of O&M Expenses | % | |
| | | Receivables | | Month | |
| | | Fuel Cost | | Month | |
| | | Interest on WC | | % | |

| Sl. No. | Assumption Head | Sub-head | Sub-head (2) | Unit | Parameter |
|---|---|---|---|---|---|
| 6 | Fuel Related assumptions | Station Heat Rate | During 1st year | kcal/kWh | |
| | | | 2nd year onwards | kcal/kWh | |
| | | Fuel Type and mix | Biomass Fuel Type-1 | % | |
| | | | Biomass Fuel Type-2 | % | |
| | | | Municipal Solid Waste | % | |
| | | | Refuse Derived Fuel | % | |
| | | | GCV of Biomass Fuel Type-1 | kcal/kWh | |
| | | | GCV of Biomass Fuel Type-2 | kcal/kWh | |
| | | | GCV of MSW | kcal/kWh | |
| | | | GCV of RDF | kcal/kWh | |
| | | | Biomass Price (Fuel Type-1)/ Yr 1 | Rs./MT | |
| | | | Biomass Price (Fuel Type-2)/ Yr 1 | Rs./MT | |
| | | | MSW Price/ Yr 1 | Rs./MT | |
| | | | RDF Price/ Yr 1 | Rs./MT | |
| | | | Fuel Price Escalation Factor | % p.a. | |

**Form-2.1: Form Template for (Wind Power, Solar PV/Solar thermal, RE Hybrid Energy Project, Renewable Energy With Storage Project): Determination of Tariff Components**

| **Units Generation** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installed Capacity | MW | | | | | | | | | | | | |
| Net Generation | MU | | | | | | | | | | | | |

| **Units Generation** | **Unit** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installed Capacity | MW | | | | | | | | | | | | | |
| Net Generation | MU | | | | | | | | | | | | | |

| **Tariff Components (Fixed charge)** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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** | | | | | | | | | | | | |

| **Tariff Components (Fixed charge)** | **Unit** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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** | | | | | | | | | | | | | |

| **Per Unit Tariff components** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PU O&M expenses | Rs/kWh | | | | | | | | | | | | |
| PU Depreciation | Rs/kWh | | | | | | | | | | | | |
| PU Interest on term loan | Rs/kWh | | | | | | | | | | | | |
| PU Interest on working capital | Rs/kWh | | | | | | | | | | | | |
| PU Return on Equity | Rs/kWh | | | | | | | | | | | | |
| PU Tariff Components | Rs/kWh | | | | | | | | | | | | |

| **Per Unit Tariff components** | **Unit** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PU O&M expenses | Rs/kWh | | | | | | | | | | | | | |
| PU Depreciation | Rs/kWh | | | | | | | | | | | | | |
| PU Interest on term loan | Rs/kWh | | | | | | | | | | | | | |
| PU Interest on working capital | Rs/kWh | | | | | | | | | | | | | |
| PU Return on Equity | Rs/kWh | | | | | | | | | | | | | |
| PU Tariff Components | Rs/kWh | | | | | | | | | | | | | |

| **Levellised Tariff** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Discount Factors | | | | | | | | | | | | | |
| Discounted Tariff components | Rs/kWh | | | | | | | | | | | | |
| Levellised Tariff | Rs/kWh | | | | | | | | | | | | |

| **Levellised Tariff** | **Unit** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Discount Factors | | | | | | | | | | | | | | |
| Discounted Tariff components | Rs/kWh | | | | | | | | | | | | | |
| **Levellised Tariff** | **Rs/kWh** | | | | | | | | | | | | | |

**Form-2.2: Form Template for (Biomass -Rankine Technology, Biogas, Biomass Gasifier, Municipal Solid Waste, Refuse Derived Fuel or Non-fossil fuel based Cogeneration): Determination of Tariff Components**

| Units Generation | Unit | Yr-1 | Yr-2 | Yr-3 | Yr-4 | Yr-5 | Yr-6 | Yr-7 | Yr-8 | Yr-9 | Yr-10 | Yr-11 | Yr-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installed Capacity | MW | | | | | | | | | | | | |
| Net Generation | MU | | | | | | | | | | | | |

| Units Generation | Unit | Yr-13 | Yr-14 | Yr-15 | Yr-16 | Yr-17 | Yr-18 | Yr-19 | Yr-20 | Yr-21 | Yr-22 | Yr-23 | Yr-24 | Yr-25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installed Capacity | MW | | | | | | | | | | | | | |
| Net Generation | MU | | | | | | | | | | | | | |

| Tariff Components (Fixed charge) | Unit | Yr-1 | Yr-2 | Yr-3 | Yr-4 | Yr-5 | Yr-6 | Yr-7 | Yr-8 | Yr-9 | Yr-10 | Yr-11 | Yr-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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** | | | | | | | | | | | | |

| Tariff Components (Fixed charge) | Unit | Yr-13 | Yr-14 | Yr-15 | Yr-16 | Yr-17 | Yr-18 | Yr-19 | Yr-20 | Yr-21 | Yr-22 | Yr-23 | Yr-24 | Yr-25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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** | | | | | | | | | | | | | |

| **Tariff Components (Variable Charge)** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Biomass Fuel Type-1 | Rs Lakh | | | | | | | | | | | | |
| Biomass Fuel Type-2 | Rs Lakh | | | | | | | | | | | | |
| Fossil Fuel (coal) | Rs Lakh | | | | | | | | | | | | |
| Municipal Solid Waste | Rs Lakh | | | | | | | | | | | | |
| Refuse Derived Fuel | Rs Lakh | | | | | | | | | | | | |
| Sub-total (Fuel Costs) | Rs Lakh | | | | | | | | | | | | |
| Fuel cost allocable to power | % | | | | | | | | | | | | |
| **Total Fuel Costs** | **Rs Lakh** | | | | | | | | | | | | |

| **Tariff Components (Variable Charge)** | **Unit** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Biomass Fuel Type-1 | Rs Lakh | | | | | | | | | | | | | |
| Biomass Fuel Type-2 | Rs Lakh | | | | | | | | | | | | | |
| Fossil Fuel (coal) | Rs Lakh | | | | | | | | | | | | | |
| Municipal Solid Waste | Rs Lakh | | | | | | | | | | | | | |
| Refuse Derived Fuel | Rs Lakh | | | | | | | | | | | | | |
| Sub-total (Fuel Costs) | Rs Lakh | | | | | | | | | | | | | |
| Fuel cost allocable to power | % | | | | | | | | | | | | | |
| **Total Fuel Costs** | **Rs Lakh** | | | | | | | | | | | | | |

| **Per Unit Tariff components (Fixed)** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PU O&M expenses | Rs/kWh | | | | | | | | | | | | |
| PU Depreciation | Rs/kWh | | | | | | | | | | | | |
| PU Interest on term loan | Rs/kWh | | | | | | | | | | | | |
| PU Interest on working capital | Rs/kWh | | | | | | | | | | | | |
| PU Return on Equity | Rs/kWh | | | | | | | | | | | | |
| **PU Tariff Components (Fixed)** | **Rs/kWh** | | | | | | | | | | | | |
| **PU Tariff Components (Variable)** | **Rs/kWh** | | | | | | | | | | | | |
| **PU Tariff Components (Total)** | **Rs/kWh** | | | | | | | | | | | | |

| **Per Unit Tariff components (Fixed)** | **Unit** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PU O&M expenses | Rs/kWh | | | | | | | | | | | | | |
| PU Depreciation | Rs/kWh | | | | | | | | | | | | | |
| PU Interest on term loan | Rs/kWh | | | | | | | | | | | | | |
| PU Interest on working capital | Rs/kWh | | | | | | | | | | | | | |
| PU Return on Equity | Rs/kWh | | | | | | | | | | | | | |
| **PU Tariff Components (Fixed)** | **Rs/kWh** | | | | | | | | | | | | | |
| **PU Tariff Components (Variable)** | **Rs/kWh** | | | | | | | | | | | | | |
| **PU Tariff Components (Total)** | **Rs/kWh** | | | | | | | | | | | | | |

| **Levellised Tariff** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Discount Factors | | | | | | | | | | | | | |
| Discounted Tariff components (Fixed) | Rs/kWh | | | | | | | | | | | | |
| Discounted Tariff components (Variable) | Rs/kWh | | | | | | | | | | | | |
| Discounted Tariff components (Total) | Rs/kWh | | | | | | | | | | | | |
| **Levellised Tariff (Fixed)** | **Rs/kWh** | | | | | | | | | | | | |
| **Levellised Tariff (Variable)** | **Rs/kWh** | | | | | | | | | | | | |
| **Levellised Tariff (Total)** | **Rs/kWh** | | | | | | | | | | | | |

| **Levellised Tariff** | **Unit** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Discount Factors | | | | | | | | | | | | | | |
| Discounted Tariff components (Fixed) | Rs/kWh | | | | | | | | | | | | | |
| Discounted Tariff components (Variable) | Rs/kWh | | | | | | | | | | | | | |
| Discounted Tariff components (Total) | Rs/kWh | | | | | | | | | | | | | |
| **Levellised Tariff (Fixed)** | **Rs/kWh** | | | | | | | | | | | | | |
| **Levellised Tariff (Variable)** | **Rs/kWh** | | | | | | | | | | | | | |
| **Levellised Tariff (Total)** | **Rs/kWh** | | | | | | | | | | | | | |

**Form-2.3: Form Template for (Small Hydro Power Projects): Determination of Tariff Components**

| **Units Generation** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installed Capacity | MW | | | | | | | | | | | | | | | | | | | | |
| Net Generation | MU | | | | | | | | | | | | | | | | | | | | |

| **Units Generation** | **Unit** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** | **Yr-26** | **Yr-27** | **Yr-28** | **Yr-29** | **Yr-30** | **Yr-31** | **Yr-32** | **Yr-33** | **Yr-34** | **Yr-35** | **Yr-36** | **Yr-37** | **Yr-38** | **Yr-39** | **Yr-40** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installed Capacity | MW | | | | | | | | | | | | | | | | | | | | |
| Net Generation | MU | | | | | | | | | | | | | | | | | | | | |

| **Tariff Components (Fixed charge)** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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** | | | | | | | | | | | | | | | | | | | | |

| **Tariff Components (Fixed charge)** | **Unit** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** | **Yr-26** | **Yr-27** | **Yr-28** | **Yr-29** | **Yr-30** | **Yr-31** | **Yr-32** | **Yr-33** | **Yr-34** | **Yr-35** | **Yr-36** | **Yr-37** | **Yr-38** | **Yr-39** | **Yr-40** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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** | | | | | | | | | | | | | | | | | | | | |

| **Per Unit Tariff components** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PU O&M Expenses | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Depreciation | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Interest on term loan | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Interest on working capital | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Return on Equity | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Tariff Components | Rs/kWh | | | | | | | | | | | | | | | | | | | | |

| **Per Unit Tariff components** | **Unit** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** | **Yr-26** | **Yr-27** | **Yr-28** | **Yr-29** | **Yr-30** | **Yr-31** | **Yr-32** | **Yr-33** | **Yr-34** | **Yr-35** | **Yr-36** | **Yr-37** | **Yr-38** | **Yr-39** | **Yr-40** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PU O&M Expenses | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Depreciation | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Interest on term loan | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Interest on working capital | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Return on Equity | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| PU Tariff Components | Rs/kWh | | | | | | | | | | | | | | | | | | | | |

| **Levellised Tariff** | **Unit** | **Yr-1** | **Yr-2** | **Yr-3** | **Yr-4** | **Yr-5** | **Yr-6** | **Yr-7** | **Yr-8** | **Yr-9** | **Yr-10** | **Yr-11** | **Yr-12** | **Yr-13** | **Yr-14** | **Yr-15** | **Yr-16** | **Yr-17** | **Yr-18** | **Yr-19** | **Yr-20** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Discount Factors | | | | | | | | | | | | | | | | | | | | | |
| Discounted Tariff components | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| **Levellised Tariff** | **Rs/kWh** | | | | | | | | | | | | | | | | | | | | |

| **Levellised Tariff** | **Unit** | **Yr-21** | **Yr-22** | **Yr-23** | **Yr-24** | **Yr-25** | **Yr-26** | **Yr-27** | **Yr-28** | **Yr-29** | **Yr-30** | **Yr-31** | **Yr-32** | **Yr-33** | **Yr-34** | **Yr-35** | **Yr-36** | **Yr-37** | **Yr-38** | **Yr-39** | **Yr-40** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Discount Factors | | | | | | | | | | | | | | | | | | | | | |
| Discounted Tariff components | Rs/kWh | | | | | | | | | | | | | | | | | | | | |
| **Levellised Tariff** | **Rs/kWh** | | | | | | | | | | | | | | | | | | | | |

# Explanatory Memorandum

# On

# Draft Rajasthan Electricity Regulatory Commission

# (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2020

# for the Control Period from

# FY 2020-21

# To

# FY 2022-23

**July, 2020**

**Rajasthan Electricity Regulatory Commission,**
Vidyut Viniyamak Bhawan, Sahakar Marg, Jaipur- 302 001.

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# 1 INTRODUCTION

## 1.1 Background

1.1.1 The enactment of the Electricity Act, 2003 ("the Act" or "the EA 2003") in June 2003 has radically changed the legal and regulatory framework applicable to the renewable energy sector in India, as it has specific provisions for promotion of renewable energy technologies. The Act provides for policy formulation by the Government of India and mandates Electricity Regulatory Commissions (ERCs) to take steps to promote renewable sources of energy within their area of jurisdiction.

1.1.2 The State of Rajasthan is bestowed with significant amount of potential of generation on electricity from wind and solar energy based projects. The Rajasthan Electricity Regulatory Commission (RERC or Commission) has been taking appropriate steps for promoting energy generation from renewable energy technologies.

1.1.3 In the past, the Commission had notified the RERC (Terms and Conditions for Determination of Tariff) Regulations, 2009 (hereafter RERC Tariff Regulations, 2009) on January 23, 2009 as per provisions of Section 61, Section 62 and Section 181 of the Act. 'Part VII: Tariff for Renewable Energy Generating Stations' of the RERC Tariff Regulations, 2009 specified the norms and principles for determination of tariff for renewable energy generating stations in the State. Further, the said RERC Tariff Regulations, 2009 were applicable for the period up to FY 2013-14, i.e., March 31, 2014.

1.1.4 As regards Solar and Wind Energy, the Commission issued RERC (Terms and Conditions for Determination of Tariff for Renewable Energy Sources - Wind and Solar Energy) Regulations, 2014 and subsequent two amendments thereafter. These regulations were applicable for the period from FY 2014-15 to FY 2019-20.

1.1.5 As regards Biomass power plants, the Commission extended applicability of RERC Tariff Regulations, 2009 till FY 2014-15, with subsequent amendments thereof. Thereafter, the Commission issued RERC (Terms and Conditions for Determination of Tariff for Renewable Energy Sources - Biomass, Biogas and Biomass Gasifier Energy) Regulations, 2015 and subsequent amendment thereafter. These Regulations were applicable for determination of tariff for Biomass Projects (Rankine Cycle), Biogas, Biomass Gasifier projects. These regulations were application for the period from FY 2015-16 to FY 2019-20.

1.1.6 Based on the applicable RE Tariff Regulations, the Commission issued Generic Tariff Orders for the Renewable Energy technologies. The details of the issuance of the Generic Tariff Order by the Commission are as follows:

| Technology | Years of Suo-Motu Order |
|---|---|
| Wind* | FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 |
| Solar PV * | FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 |
| Biomass | FY 2015-16, FY 2016-17, FY 2017-18, FY 2018-19, FY 2019-20 |
| Biogas | FY 2015-16, FY 2016-17, FY 2017-18, FY 2018-19 & FY 2019-20 |

**For Solar PV, the FY 2017-18 order is valid till 31.03.2019, For wind till FY 2018-19. Project specific tariff for Solar and Wind from FY 2019-20 as per RERC Wind and Solar Energy, (Second amendment) Regulations, 2019.*

## 1.2 Legal and Policy Framework for Renewable Energy

### 1.2.1 Electricity Act, 2003

1.2.1.1 **Tariff determination for Renewable energy sources:** As per Section 61 of the Act, while formulating the Tariff Regulations, the Appropriate Commission is required to specify the terms and conditions for the determination of Tariff, in accordance with the provisions of the EA 2003. Further, as per sub-section (h) of Section 61 of EA 2003, while specifying the terms and conditions for tariff, the Commission shall be guided by promotional aspect as regards renewable energy sources. The relevant extract of provision of the EA 2003 is as under:

> "*61. The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:*
> …
> *(h) the promotion of co-generation and generation of electricity from renewable sources of energy;*"

1.2.1.2 **Promotion of renewable energy sources:** Under Section 86 of the EA 2003, the Regulatory Commissions are required to specify obligations of various entities to procure renewable energy equivalent to a specified percentage of the total consumption of electricity in the area of distribution licensee. The relevant extract of the EA 2003 is as under:

> *"86. The State Commission shall discharge the following functions, namely -*
> …
> *(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee*".

### 1.2.2 National Electricity Policy

1.2.2.1 Clause 5.12 of the National Electricity Policy stipulates several conditions in

respect of promotion and harnessing of renewable energy sources, as reproduced below:

> *"5.12.1 Non-conventional sources of energy being the most environment friendly there is an urgent need to promote generation of electricity based on such sources of energy. For this purpose, efforts need to be made to reduce the capital cost of projects based on non-conventional and renewable sources of energy. Cost of energy can also be reduced by promoting competition within such projects. At the same time, adequate promotional measures would also have to be taken for development of technologies and a sustained growth of these sources.*
>
> *5.12.2 The Electricity Act 2003 provides that co-generation and generation of electricity from non-conventional sources would be promoted by the SERCs by providing suitable measures for connectivity with grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. Such percentage for purchase of power from non-conventional sources should be made applicable for the tariffs to be determined by the SERCs at the earliest. Progressively the share of electricity from non-conventional sources would need to be increased as prescribed by State Electricity Regulatory Commissions. Such purchase by distribution companies shall be through competitive bidding process. Considering the fact that it will take some time before non-conventional technologies compete, in terms of cost, with conventional sources, the Commission may determine an appropriate differential in prices to promote these technologies."*

### 1.2.3 **Tariff Policy**

1.2.3.1 The Tariff Policy notified on January 6, 2006 and January 28, 2016 has further elaborated on the role of Regulatory Commissions, mechanism for promoting harnessing of renewable energy, and timeframe for implementation, etc.

1.2.3.2 Clause 6.4 of the Tariff Policy dated January 28, 2016 addresses various aspects associated with promotion and harnessing of renewable energy sources, as reproduced below:

> *"6.4 … …*
> *(2) States shall endeavor to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government.*
>
> *(3) The Central Commission should lay down guidelines for pricing intermittent power, especially from renewable energy sources, where such procurement is not through competitive bidding. The tariff stipulated by CERC shall act as a ceiling for that category.*
>
> *(4) In order to incentivize the Distribution Companies to procure power from renewable sources of energy, the Central Government may notify, from*

*time to time, an appropriate bid-based tariff framework for renewable energy, allowing the tariff to be increased progressively in a back-loaded or any other manner in the public interest during the period of PPA, over the life cycle of such a generating plant. Correspondingly, the procurer of such bid-based renewable energy shall comply with the obligations for payment of tariff so determined. … …"*

1.2.4 **Rajasthan Renewable Energy Polices**

1.2.5 The Government of Rajasthan has put emphasis on clean and green energy in order to ensure energy security, for achieving goals of reducing carbon emission and pollution mitigation within the State. Therefore, State Government time to time publishes polices to promote Renewable Energy.

1.2.6 Thus, the Commission while framing the Regulations in RERC RE Tariff Regulation, 2020 have also considered various provisions of applicable Renewable Energy policy(ies) of Government of Rajasthan viz. Rajasthan Solar Energy Policy, 2019 and Rajasthan Wind and Hybrid Energy Policy, 2019.

## 1.3 Present RE Tariff Regulations

1.3.1 In view of the above, the Commission has decided to issue Draft RE Tariff Regulations for the next Control period commencing from April 1, 2020.

1.3.2 At present, the Commission has notified regulations separately for Wind & Solar and Biomass. However, in the present Draft, the Commission has combined all RE technologies in the Draft Regulations.

1.3.3 Further, the Commission notes that CERC has issued CERC (Terms and Conditions of Tariff Determination from Renewable Energy Sources) Regulations, 2020 on June 23, 2020. The Commission has also considered the same while proposing this Draft Regulations.

1.3.4 In addition to this, the Commission has reviewed the RE tariff Regulations issued by various states from time to time. The Commission has also considered the development of RE technologies in past years in State and various Orders issued by the Commission regarding the same from time to time.

1.3.5 Accordingly, the Commission publishes Draft Rajasthan Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 (hereinafter referred as "Draft RE Tariff Regulations, 2020") inviting the comments of various stakeholders.

# 2 SCOPE OF TARIFF REGULATIONS

## 2.1 Applicability of Regulations

2.1.1 These regulations shall be applicable for those new generating station(s) or unit based on renewable energy sources which are commissioned in the State of Rajasthan for generation and sale of electricity to Distribution Licensee(s) in the State during the Control Period.

2.1.2 Those generating station(s) or unit based on renewable energy sources must fulfil eligibility criteria specified in Regulation 4 of Draft Regulations.

2.1.3 As per Section 86 of the EA 2003, the Commission is required to determine the tariff for a generating Station or Unit thereof based on renewable source of energy. Accordingly, it is proposed that these Regulations shall apply in cases where tariff for new generating station(s) or unit based on renewable energy sources, is to be determined by the Commission under Section 62 read with Section 86 of the Act.

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

2.1.5 Further, it is to be clarified that the tariff applicable to existing RE projects shall be governed by the provisions of the applicable Regulations or Tariff Orders issued by the Commission from time to time. The other terms and conditions as specified in these Regulations shall also be applicable for existing RE Projects.

2.1.6 The terms and conditions other than related to tariff determination as specified in these regulations shall also be applicable for Renewable Energy based captive power plants and Renewable Energy plants supplying power to third party under Open Access.

## 2.2 Eligibility Criteria

2.2.1 The tariff determined under these Regulations shall be applicable in respect of Renewable Energy technologies meeting specific Eligibility Criteria.

2.2.2 The Commission proposes to specify the eligibility criteria for the existing RE technologies which are provided with norms in the earlier Regulations such as Wind Power Project, Solar PV project, Solar Thermal Project, Biomass power project with Rankine Cycle Technology, Biomass gasifier based power project and Biogas based power project.

2.2.3 The Commission also proposes to specify the norms and eligibility criteria for

Non-fossil fuel based Co-generation project, Municipal Solid Waste based project, Refuse Derived Fuel based power project and Small hydro project.

2.2.4 Further, the Commission proposes to specify the parameters for new Renewable Energy technologies such as Floating Solar Project, Renewable Hybrid Energy Project and Renewable Energy Project with Storage in line with the CERC RE Tariff Regulations, 2020.

2.2.5 The Commission also proposes to provide the norms for Renewable Energy Project during extended period and specify the eligibility criteria as follows - The project shall qualify to be termed as Renewable Energy Project during extended period, when its Power Purchase Agreement has expired and the Distribution Company (s) has agreed to continue availing power from such project at its discretion considering the overall energy requirement, RPO targets and reasonableness of price for procurement of power from such projects (equivalent to or lower than the latest tariff discovered through competitive bidding).

2.2.6 For the purpose of these Regulations, Renewable Hybrid Energy Project and Renewable Project with Storage have been treated separately.

### 2.3 Approach for development of Tariff norms

2.3.1 While developing the tariff norms, a detailed review of the Tariff Orders/Regulations notified by the CERC and various SERCs and the approaches considered for specifying the norms for tariff determination for Wind and Solar energy plants, has been undertaken.

2.3.2 The tariff determination principles and norms have been categorised broadly under three sections, namely General Principles, Financial Principles and technology specific norms. On the basis of scope of RE technologies to be covered under these Regulations, the Explanatory Memorandum has been divided into six (6) Sections as under:

The Explanatory Memorandum is organised in the following Sections:

**Section 1**: Introduction
**Section 2**: Scope of the Tariff Regulations
**Section 3**: General Principles
**Section 4:** Financial Principles
**Section 5:** Technology Specific Parameters
**Section 6:** Others