

HARYANA ELECTRCITY REGULATORY COMMISISON

WHEREAS the Haryana Electricity Regulatory Commission has published in the Haryana Government Gazette on different dates the following, namely:-

Haryana Electricity Regulatory Commission (HERC), (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2017,
(Notification No. HERC/ 40 / 2018, Dated: 24.07.2018)

- A. (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2017, (First Amendment), 2018;
(Notification No.: HERC/40/2018/1st Amendment/2018, Dated: 27.08.2018)
 - B. (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2017, (Second Amendment), 2019;
(Notification No.: HERC/40/2018/2nd Amendment/2019, Dated: 14.06.2019)
- Inserted/ Replaced matter is shown as []^A at appropriate place; wordings inserted/ replaced shown within square brackets;
 - In both of above cases; -^A ; superscript A implies that change is caused by Amendment '1'.
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Notification

The 24th July, 2018

Regulation No.HERC/ 40 / 2018: - In exercise of the powers conferred on it by section 181 of the Electricity Act 2003 (Act 36 of 2003) and all other powers enabling it in this behalf, the Haryana Electricity Regulatory Commission, hereby makes the following Regulations.

Chapter – 1

General

1. Short title, commencement, extent of application and interpretation. –

- (1) These Regulations may be called the Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2017.
- (2) These regulations shall come into force on the date of their publication in the Haryana Government Gazette.
- (3) These regulations shall extend to all grid connected renewable energy projects and

obligated entities in the State of Haryana.

2. Definitions. –

- (1) In these regulations, unless the context otherwise requires,
 - (1) **'Act'** means the Electricity Act, 2003 (36 of 2003);
 - (2) **'Auxiliary energy consumption'** or **'AUXe'** in relation to a period in case of a generating station means the quantum of energy consumed by auxiliary equipments of the generating station, and transformer losses within the generating station, expressed as a percentage of gross energy generated at the generator terminal of the generating station during the period;
 - (3) **'Biomass'** means wastes produced during agricultural and forestry operations (for example straws and stalks) or produced as a by-product of processing operations of agricultural produce (e.g., husks, shells, deoiled cakes, etc); wood produced in dedicated energy plantations or recovered from wild bushes/weeds whichever permissible; and the wood waste produced in some industrial operations;
 - (4) **'Capital cost'** means the capital cost as defined in the relevant sub regulations of these Regulations;
 - (5) **'Central Agency'** means the agency operating the National Load Dispatch Centre or such other agency as the Central Commission may designate from time to time;
 - (6) **"Certificate"** means the renewable energy certificate issued by the Central Agency in accordance with the procedures prescribed by it and under the provisions specified in the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issue of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2009 as amended from time to time;
 - (7) **'Commission'** means the Haryana Electricity Regulatory Commission;
 - (8) **'Conduct of Business Regulations'** means the Haryana Electricity Regulatory Commission (Conduct of Business) Regulations, 2004 as amended from time to time;
 - (9) **'Control Period or Review Period'** means the period during which the norms for determination of tariff and other provisions specified in these regulations shall remain valid;
 - (10) **'Floor Price'** means the minimum price determined by the Central Commission in accordance with these regulations at and above which the renewable energy certificate can be traded in the power exchange;
 - (11) **'Forbearance price'** means the ceiling price as determined by the Central Commission in accordance with the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issue of Renewable energy Certificate for Renewable Energy Generation) Regulations, 2010, as amended from time to time, within which the Certificate can be traded in power exchange;
 - (12) **'Gross calorific value'** or **'GCV'** in relation to a fuel used in generating station means the heat produced in kCal by complete combustion of one kilogram of solid fuel or one litre of liquid fuel or one standard cubic meter of gaseous fuel, as the case may be;

- (13) **'Gross station heat rate'** or **'GHR'** means the heat energy input in kCal / kWh required to generate one kWh of electrical energy at generator terminals of a renewable energy generating station;
- (14) **'Hybrid Solar Thermal Power Plant'** means the solar thermal power plant that uses other forms of energy input sources along with solar thermal energy for electricity generation, and wherein not less than 75% of electricity is generated from solar energy component;
- (15) **'Installed capacity'** or **'IC'** means the summation of the name plate capacities of all the units of the generating station or the capacity of the generating station (reckoned at the generator terminals/Solar Inverter in MW / MVA), as the case may be;
- (16) **'Inter-connection Point'** shall mean interface point of renewable energy generating facility including Waste to Electricity projects with the transmission system or distribution system,
- a) in relation to wind energy projects and Solar Photovoltaic Projects, inter-connection point shall be line isolator on outgoing feeder on High Voltage (HV) side of the pooling sub-station;
 - b) in relation to small hydro power, biomass power, Waste to Energy projects and non-fossil fuel based cogeneration power projects and Solar Thermal Power Projects, the inter-connection point shall be line isolator on outgoing feeder on HV side of generator transformer;
- (17) **'Non firm power'** means the power generated from renewable sources, the hourly variation of which is dependent upon nature's phenomenon like sun, cloud, wind, etc., that cannot be accurately predicted;
- (18) **"Levelling Tariff"** means the tariff calculated by carrying out levelisation for 'useful life' of each technology considering the discount factor for time value of money.
- (19) **'MNRE'** means the Ministry of New and Renewable Energy of the Government of India;
- (20) **"Municipal Solid Waste"** means and includes commercial and residential wastes generated in a municipal or notified area in either solid or semisolid form excluding industrial hazardous wastes but including treated bio-medical waste;
- (21) **'Non fossil fuel based co-generation'** means the process in which more than one form of energy (such as steam and electricity) are produced in a sequential manner by use of biomass including Bagasse.
- (22) **'Obligated entity'** means an entity in the State of Haryana which is mandated to fulfill renewable purchase obligation under these Regulations and include the following:-
- i) Distribution licensee(s)
 - ii) Open Access consumers including short term open access consumers, and
 - iii) Fossil Fuel based Captive Power Plant of 5 MW and above including Fossil Fuel based Co-generation captive plant of 5 MW and above.
- (23) **'Operation and maintenance expenses'** or **'O&M expenses'** means the expenditure incurred on operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, repairs, spares, consumables, insurance and overheads;

- (24) **'Power Exchange'** means any exchange operating as the power exchange for electricity in terms of the orders issued by the Central Commission;
- (25) **'Preferential tariff'** or "Feed in Tariff" means the tariff fixed by the Commission for sale of energy from a generating station based on renewable energy sources to a distribution licensee;
- (26) **'Project'** means a generating station or the evacuation system upto inter-connection point, as the case may be, and in case of a small hydro generating station includes all components of generating facility such as dam, intake water conductor system, power generating station and generating units of the scheme, as apportioned to power generation;
- (27) **'Renewable Energy'** means the electricity generated from renewable energy sources;
- (28) **'Renewable Energy Power Plants'** means the power plants other than the conventional power plants generating electricity from renewable energy sources;
- (29) **'Renewable Energy Sources'** means renewable sources such as small hydro, wind, solar including its integration with combined cycle, biomass (including Bagasse), bio fuel, urban or municipal waste and other such sources as approved by the MNRE;
- (30) **'Small Hydro'** means Hydro Power projects with a station capacity up to 25 MW or as specified in the National Tariff Policy or by the Central Government from time to time;
- (31) **'Solar PV power'** means the Solar Photo Voltaic power project that uses sunlight for direct conversion into electricity through Photo Voltaic Cells;
- (32) **'Solar Thermal power'** means the Solar Thermal power project that uses sunlight for conversion of heat energy into electricity through Concentrated Solar Power technology based on either line focus or point focus principle;
- (33) **'State agency'** means the agency in the State of Haryana to be designated by the Commission to act as the agency for accreditation and recommending the renewable energy projects for registration and to undertake functions under these regulations;
- (34) **'Tariff period'** means the period for which tariff / price for sale of power is determined by the Commission on the basis of norms specified in these Regulations;
- (35) **'Useful Life'** in relation to a unit of a generating station including evacuation system shall mean the following duration from the date of commercial operation (COD) of such generation facility, namely:
- (a) Wind energy power project 25 years
 - (b) Biomass power project, non-fossil fuel cogeneration 20 years
 - (c) Small Hydro Plant 35 years
 - (d) Solar PV/Solar thermal power plants 25 years
 - (e) Processed Municipal Solid Waste (MSW) WtE based power projects – 20 years
 - (f) Biomass gasifier power plants 20 years
 - (g) Biogas power plants 20 years
- (36) **'Year'** means a financial year.

- (2) All other expressions used herein but 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 the regulations or in the Act but defined under Haryana Electricity Reform Act, 1997 (Act 10 of 1998) or the Indian Electricity Grid Code or the Haryana Grid Code or the Haryana Electricity Regulatory Commission (Terms and Conditions for determination of Tariff for Generation, Transmission, Wheeling and Distribution & Retail Supply under Multi Year Tariff) Regulations, 2012, as amended / reenacted from time to time, shall have the meanings assigned to them respectively in the Haryana Electricity Reform Act, 1997 (Act 10 of 1998) or the Indian Electricity Grid Code or the Haryana Grid Code or any other relevant Regulations in vogue , provided that such definitions in the Haryana Electricity Reform Act, 1997 are not inconsistent with the provisions of the Electricity Act, 2003;

3. Eligibility Criteria. – For the purpose of these regulations a project shall be treated as renewable energy power project only if it meets the following criteria:-

- a) Wind power project – located at the wind sites having minimum annual mean Wind Power Density (WPD) of 200 Watt/m² measured at hub height of 100meters and using new wind turbine generators;
- b) Small hydro project – located at the sites approved by State Nodal Agency / State Government / self - identified sites using new plant and machinery, and installed power plant capacity to be lower than or equal to 25 MW at single location;
- c) Biomass power project – Biomass power projects using new plant and machinery using biomass fuel sources,
- d) Processed Municipal Solid Waste based WtE power projects – The project shall qualify to be termed as Municipal Solid Waste based WtE power projects, if it is using new plant and machinery and using Municipal solid waste as fuel source for generation of electricity.
- e) Solar PV and Solar Thermal Power Projects – Based on Technologies approved by MNRE/HAREDA.
- f) Biomass Gasifier Power Projects - The projects shall qualify as gasifier based power project provided it is using new plant and machinery and having a grid connected system that uses 100% syngas/producer gas engine with MNRE approved gasification technology and shall use non fossil fuel as approved by MNRE.
- g) Biogas Power Projects - The projects shall qualify as biogas based power project provided it is using new plant and machinery and having a grid connected system that and uses 100% biogas fired engine with MNRE approved technology.

Explanation:

The necessity of new plant and machinery shall be applicable where the DPR is approved by HAREDA and tariff is determined by the Commission under Section 62 of the Act as well as procurement of power by the Distribution Licensee(s) under Section 63 of the Act in case the bidding documents / guidelines so provides. The dispensation shall include the RE Projects where capital subsidy is claimed by the project developer.

Chapter – 2

Norms

4. **Control Period or Review Period.** – The Control Period under these Regulations shall be from the FY 2017-18 to the FY 2020-21.

Provided that the benchmark capital cost and tariff for Solar PV rooftop, ground mounted, canal based / Water Works solar projects, wind power, small hydro shall be determined on case specific basis only. It would be appropriate for the HAREDA to adopt reverse bidding with the lowest quoted tariff as the base tariff.

Provided further that the tariff determined / discovered and approved by the Commission for the RE projects commissioned / to be commissioned during the Control Period, shall continue to be applicable for the entire duration of the Tariff Period as specified in Regulation 5 below.

Provided also that the revision in Regulations for next Control Period shall be undertaken at least six months prior to the end of the first 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 and the Control Period shall be deemed to have been extended up to the date of notification of the next Control Period.

5. **Tariff Period.** –

- (1) The Tariff Period for Renewable Energy power projects shall generally correspond to their respective project life or reckoned with the period provided in the PPA as the case may be.
- (2) 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.
- (3) Tariff determined as per these Regulations shall be applicable for Renewable Energy power projects, only for the duration of the Tariff Period as stipulated under Regulation 5(1).
- (4) The PPA (s) signed by the distribution licensee (s) on the basis of tariff determined by the Commission in its orders prior to the notification of these Regulations on renewable energy shall remain valid for the tariff period as per the PPA. Such cases shall not be reopened in view of the norms provided in these regulations.

6. **Project Specific tariff.** –

- (1) Project specific tariff, on case to case basis, may also be determined by the Commission for the following types of projects:
 - (a) Processed Municipal Solid Waste (WtE) Projects
 - (b) Poultry litter / Cow dung etc.
 - (c) Mixed feed

- (d) small / micro hydro power projects of 25 MW and below
- (e) Wind
- (f) Any other new renewable energy technologies approved by MNRE
- (g) The renewable energy projects which have been commissioned before the control period specified in these Regulations but for which no power purchase agreement has been signed.
- (h) Solar PV and Solar Thermal Power projects, if a project developer opts for project specific tariff:
 - Provided that the Commission while determining the project specific tariff for Solar PV and Solar Thermal shall be guided by the provisions of these Regulations.
- (i) Hybrid Solar Thermal Power plants
- (j) Biomass project other than that based on Rankine Cycle technology application with water cooled / air cooled condenser.

- (2) Determination of Project specific Tariff for generation of electricity from such renewable energy sources shall be in accordance with such terms and conditions as stipulated by the Commission.

Provided that the financial norms as specified under Chapter-3 of these Regulations, except for capital cost, shall be ceiling norms while determining the project specific tariff.

Explanation:

Regarding Solar Power, it would be appropriate for the Discoms / HAREDA to procure such power through competitive bidding route u/s 63 of the Electricity Act, 2003. However, for solar power projects of less than 5 MW, the Commission, on an application made by the Solar Power Developer and DPR approved by HAREDA with concurrence of HPPC/ Discoms, may determine project specific tariff. The Commission would prefer that all solar projects are selected through competitive bidding.

As far as RE projects selected through competitive bidding (s) is concerned and where tariff is adopted by the Commission under section 63 of the Act, the terms and conditions of the Guidelines as mentioned in section 63 of the Act and the bidding documents thereto shall prevail.

7. Petition and proceedings for determination of tariff. –

- (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 renewable energy technologies for which norms have been specified under the Regulations.
- (2) 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 the following:
 - a) Information in forms 1.1, 1.2, 2.1 and 2.2 as the case may be, and as appended to these regulations;
 - b) Detailed project report outlining technical and operational details, sitespecific 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 may require the petitioner to submit.
- (3) The proceedings for determination of tariff shall be in accordance with the HERC (Conduct of Business) Regulations 2004, as amended from time to time.

8. Tariff Structure.

- (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;

Provided that for renewable energy 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. The fuel cost component may be subjected to escalation for computing levelled generic tariff for entire useful life of the project as provided in these Regulations.

9. Tariff Design. –

- (1) The generic tariff shall be determined on levelled basis for the entire Tariff Period.

Provided that for renewable energy technologies having single part tariff with two components, tariff shall be determined on levelled basis considering the year of commissioning of the project for fixed cost component while the fuel cost component shall be specified on year of operation basis.

- (2) For the purpose computation of levelled tariff, the discount factor equivalent to weighted average cost of capital as per the formula specified in these Regulations shall be considered.
- (3) Levelled tariff shall be specified for the period equivalent to the 'Tariff Period'.

10. Despatch principles for electricity generated from Renewable Energy Sources. –

- (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. 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.
- (2) The scheduling and deviation settlement issues related to solar and wind power shall be addressed through a separate set of Regulations already under formulation. Further, as far as scheduling and deviation settlement mechanism for other source of RE generator is concerned, till the time the Commission notifies the said mechanism after due deliberations, the dispensation provided in the present Regulations shall be

applicable.

Chapter – 3

Financial Principles

- 11. Capital Cost. –** The norms for the Capital cost as specified in the subsequent technology specific chapters shall be inclusive of all capital work including plant and machinery, initial spares, civil work, erection and commissioning, financing and interest during construction, and evacuation infrastructure up to inter-connection point.

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

Provided further that in case where land is on lease basis, the cost of land to be taken as part of capital cost shall be determined as per the Land Lease Agreement. This provision shall be applicable for project specific cases.

- 12. Debt Equity Ratio. –**

(1) For generic tariff to be determined based on suo - motu petition, the debt equity ratio shall be 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.

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff. Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

- 13. Loan and Finance Charges. –**

(1) For the purpose of determination of tariff, loan tenure of 13 years shall be considered.

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

(b) 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%.

(c) Notwithstanding any moratorium period availed by the generating company, 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.

- 14. Depreciation. –**

(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) Depreciation per annum shall be based on 'Differential Depreciation Approach' over loan tenure and period beyond loan tenure over useful life computed on 'Straight Line Method'. 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.
- (3) 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.

15. Return on Equity. –

- (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.

Provided that the applicable MAT / Corporate Tax shall be separately invoiced as per the actual paid at the rate as declared by the Income Tax Department. The Generator shall raise the bill for reimbursement of MAT / Corporate Tax applicable on Return on Equity in 12 equal installments which shall be payable by the beneficiaries.

16. Interest on Working Capital. –

- (1) The Working Capital requirement in respect of wind energy projects, small hydro power, solar PV and Solar thermal power projects and Processed Municipal Solid Waste (WtE) projects shall be computed in accordance with the following :-
 - a) Operation & Maintenance expenses for one month;
 - b) Receivables equivalent to 2 (two) months of fixed and energy charges for sale of electricity calculated on the normative CUF / PLF;
 - c) Maintenance spare @ 15% of operation and maintenance expenses.
- (2) The Working Capital requirement in respect of biomass power projects (Rankine Cycle Technology), Biomass Gasifier / Bio gas based projects and bagasse / non-fossil fuel based co-generation projects shall be computed as under:-
 - a) Fuel costs for four months at normative PLF;
 - b) Operation & Maintenance expense for one month;
 - c) Receivables equivalent to 2 (Two) months of fixed and variable charges for sale of electricity calculated on the normative PLF;
 - d) Maintenance spare @ 15% of operation and maintenance expenses.
- (3) 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 margin not exceeding 200 basis points i.e. 2%.

17. Operation and Maintenance Expenses. –

- (1) 'Operation and Maintenance or O&M expenses' shall comprise repair and maintenance (R&M), establishment including employee expenses, and administrative and general expenses.
- (2) Operation and maintenance expenses shall be determined for the Tariff Period based on normative O&M expenses specified by the Commission subsequently in these Regulations for the first Year of the Control Period.
- (3) Normative O&M expenses allowed during first year of the Control Period under these Regulations shall be escalated at the rate of 5.72% per annum over the Tariff Period.

18. Rebate. –

- (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 one month of presentation of bills by the generating company, a rebate of 1% shall be allowed.

19. Late payment surcharge. – In case the payment of any bill for charges payable under these regulations is delayed beyond a period of 60 days from the date of billing, a late payment surcharge at the rate of 1.25% per month shall be levied by the generating company.

20. Sharing of CDM Benefits. –

- (1) The proceeds of carbon credit from approved CDM project, after deduction of expenses incurred by the generating company for registration and approval of the project as CDM project shall be shared between generating company and concerned beneficiaries in the following manner:-
 - a) 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;
 - b) 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.

Provided that in case the Concession Agreement or PPA has specific provision regarding sharing of CDM benefits, the same shall be applicable in such cases.

21. Subsidy or incentive by the Central / State Government. – 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.

22. Taxes and Duties. – Tariff determined under these regulations shall be exclusive of taxes and duties as may be levied by the appropriate Government. 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.

Chapter – 4

Technology specific parameters for Wind Energy

23. Capital Cost. –

- (1) The capital cost for wind energy project shall include Wind turbine generator including its auxiliaries, site development charges and other civil works, transportation charges, evacuation cost up to inter-connection point, financing charges and IDC. Provided in case of land obtained on lease, cost of land shall be taken as per lease agreement.
- (2) Given the limited potential for setting up wind energy projects in Haryana, the Commission, on an application received from a prospective wind power generator / developer and willingness of the Disocoms / HPPC to purchase such power, shall determine capital cost for wind energy projects, O&M expenses and tariff based on the market trends prevailing during the relevant year i.e. scheduled CoD of such projects on case specific basis only.

24. Capacity Utilization Factor. –

- (1) CUF norms for the control period shall be as follows:-

Annual Mean Wind Power Density (W/m²)	CUF
Up to 220	22%
221- 275	24%
276- 330	28%
331- 440	33%
441 +	35%

Provided that the number of hours for calculation of CUF shall be 8760 hours.

- (2) The annual mean wind power density specified above shall be measured at 100 meter hub-height.
- (3) For the purpose of classification of wind energy project into particular wind zone class, the State-wise wind power density map prepared by Centre for Wind Energy Technology (C-WET) / MNRE / NIWE , shall be considered.

Provided that the Commission may by notification amend the schedule from time to time, based on MNRE guidelines / NIWE for wind measurement or by the private developer.

Provided in the case of wind measurement data submitted by wind power developer the same shall be acceptable in case it is validated by NIWE.

Chapter – 5

Technology specific parameters for Small Hydro Project

25. Capital Cost. –

- (1) The indicative capital cost for small hydro projects during the Control beginning the FY 2017-18, unless reviewed earlier by the Commission shall be as under:-

Size of project	Capital Cost (Rs. Crore / MW)
Below 5 MW	7.79
5 MW to 25 MW	7.07

Provided in the case of small hydro power projects the Commission shall determine project specific tariff only and accordingly determine project specific capital cost as well as CUF, if required, based on case specific hydrological data.

26. **Capacity Utilization Factor.** – Capacity Utilization Factor (CUF) for the small hydro projects shall be 56%. The normative CUF shall be net of free power to the State, if any, and any quantum of free power, over and above the free power notified by the Central Government, if committed by the developer over and above the normative CUF, shall not be factored into the tariff. Provided further that the number of hours for calculation of CUF shall be 8760 hours.

27. **Auxiliary Consumption.** – Normative Auxiliary Consumption, including losses, for the small hydro projects shall be 1.0%.

28. Operation and Maintenance Expenses. –

- (1) Normative O&M expenses for the first year of the Control period (i.e. FY 2017-18) shall be as under:-

Project size	O&M Expenses (Rs. Crore / MW)
Below 5 MW	0.29
5 MW to 25 MW	0.21

- (2) 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 tariff under these Regulations.

Chapter – 6

Technology specific parameters for Biomass based Power Projects

- 29. Technology Aspect.** – The norms for tariff determination specified hereunder are for biomass power projects based on Rankine Cycle technology application using water cooled condenser and air cooled condenser.
- 30. Capital Cost. –**
- (1) The normative capital cost, during the control period under these Regulations, for the biomass power projects shall be Rs. 5.59 Crore / MW (Water Cooled Condenser) and Rs. 6.0 Crore / MW for projects using Air Cooled Condenser.
- Provided for the project using ^{^1} ~~single fuel i.e. rice straw / stubble~~ *Rice Straw / Stubble as fuel*^A for generation of power the Capital Cost, during the control period, shall be Rs. 6.10 Crore / MW (Water Cooled Condenser) and Rs. 6.52 Crore / MW for projects having air cooled condenser.
- 31. Plant Load Factor. –**
- (1) Threshold Plant Load Factor for determining fixed charge component of Tariff shall be as under:-
- 1st Year of Operation including Stabilization: 65%
 - From 2nd Year onwards: 80 %
- 32. Auxiliary Energy Consumption.** – The auxiliary energy consumption shall be 10% in the case of projects equipped with water cooled condenser and 12% for air cooled condenser, for the purpose of tariff determination.
- 33. Station Heat Rate.** – The Station Heat Rate for biomass power projects shall be 4126 kCal / kWh and 4063 Kcal / kWh for projects equipped with travelling grate boiler and AFBC boiler respectively.
- 34. Operation and Maintenance Expenses. –**
- (1) Normative O&M expenses for the first year of the Control period (i.e. FY 2017-18) shall be Rs. 0.40 Crore /MW.
- (2) Normative O&M expenses allowed at the commencement of the Control Period (i.e. FY 2017-18) under these Regulations shall be escalated at the rate of 5.72% per annum.
- 35. Fuel Mix. –**
- (1) The biomass power plant shall be designed in such a way that it uses different types of non-fossil fuels available within the vicinity of biomass power project such as crop residues, agro-industrial residues, forest residues etc. and other biomass fuels as may

¹ Omitted and inserted wording in regulation 30 proviso, vide First amendment (A), 2018

be approved by MNRE.

- (2) The Biomass Power Generating Companies shall ensure fuel management plan to ensure adequate availability of fuel to meet the respective project requirements.

36. Use of Fossil Fuel. –

- (1) Use of Fossil Fuel shall not be permitted. The Project developer shall furnish monthly fuel (biomass mix) usage statement and monthly fuel (biomass mix) procurement statement duly certified by Chartered Accountant to the beneficiary (with a copy to appropriate agency appointed by the Commission for the purpose of monitoring fuel consumption) for each month, along with the monthly energy bill.
- (2) Non-compliance with the condition of fossil fuel usage by the project developer, during any financial year, shall result in withdrawal of applicability of tariff as per these Regulations for such biomass based power project. In such cases the PPA(s) shall be terminated and the Discoms (beneficiaries) shall be under no obligation to make any payments for the power supplied by the seller in breach of the regulation on fuel usage.

Provided that the bagasse based co-generation projects, selling power to the Discoms under PPA approved by the Commission, shall be permitted to use biomass as fuel during the non-cane crushing season. In such cases the generators can approach the Commission for determination of tariff for the power generated using biomass as fuel. The HPPC shall not refuse purchase of such power without the prior approval of the Commission.

37. Calorific Value. – The Calorific Value of the biomass fuel used for the purpose of determination of tariff shall be 3100 (kCal/kg).

38. Fuel Cost. – Biomass fuel price during first year of the Control Period shall be Rs. 3270 /MT and shall be escalated at the rate of 5% per annum for arriving at the levelised tariff for the entire useful life of the project.

Further, the Commission, for biomass / bagasse based power project, both existing and to be set up, may consider two part tariff wherein the fixed cost shall be the levelised tariff already determined for the existing projects and the fuel cost shall be as determined on a year to year basis so that the issue of fuel cost and escalation there to is addressed.

With an objective to utilize and thereby prevent burning of paddy straw / stubble in the farms, the Commission would like to promote use of the same in the power projects. Hence, while determining fuel cost / GCV on a year to year basis applicable for the existing as well as to be commissioned biomass / bagasse power projects, appropriate price weightage could be considered. HAREDA may provide the relevant data collected from the field for consideration of the Commission. However, the details of usage of paddy straw / stubble shall be certified by the IPPs and verified by HPPC based on the data emanating from the local authorities concerned.

Further, given the single fuel based generation for paddy straw / stubble based power projects in Haryana, working capital norms shall be accordingly determined.

Chapter – 7

Technology specific parameters for Non-fossil fuel based Cogeneration Projects

39. **Technology Aspect.** – A project shall qualify as a non-fossil fuel based Co-generation project, if it is in accordance with the definition as specified under these Regulations.
40. **Capital Cost.** - The normative capital cost for the non-fossil fuel based cogeneration projects shall be Rs. 4.925 Crores/MW during the control period, unless reviewed earlier by the Commission.
41. **Plant Load Factor.** –
- (1) For the purpose of determining fixed charge, the plant load factor for non-fossil fuel based cogeneration projects shall be computed on the basis of plant availability for number of operating days considering operations during crushing season and off-season as specified under sub regulation (2) below and load factor of 92%.
 - (2) The number of operating days shall be 150 days (crushing) + 60 days (off-season) = 210 days operating days and the Plant Load Factor shall be 53%.
42. **Auxiliary Energy Consumption.** – The auxiliary energy consumption factor shall be 8.5% for the purpose of tariff determination.
43. **Station Heat Rate.** – The Station Heat Rate of 3600 kCal / kWh for power generation component alone shall be considered for computation of tariff for non-fossil fuel based Cogeneration projects.
44. **Calorific Value.** – The Gross Calorific Value for Bagasse shall be considered as 2250 kCal/kg.
45. **Fuel Cost.** –
- (1) The price of Bagasse shall be Rs. 2307/ MT and shall be escalated at the rate of 5% per annum for determination of levellised tariff for the entire useful life of the project.
46. **Operation and Maintenance Expenses.** –
- (1) Normative O&M expenses during first year of the Control Period shall be Rs. 0.21 Crore / MW.
 - (2) The normative O&M expenses allowed at the commencement of the Control Period i.e. the FY 2017-18 under these Regulations shall be escalated at the rate of 5.72% per annum.

Chapter – 8

Technology specific parameters for Solar PV Power Project

47. **Technology Aspects.** – Norms for Solar Photovoltaic (PV) power under these Regulations shall be applicable for grid connected PV systems that directly convert solar energy into electricity and are based on the technologies such as crystalline silicon or thin film etc. as may be approved by MNRE. The Commission shall not determine generic tariff under these Regulations and only project specific tariff, if required, shall be determined.

Provided that the Discoms / HAREDA may do reverse bidding with the lowest quoted tariff as base tariff.

Provided that the norms including Capital Cost, CUF, Auxiliary Energy consumption, O&M expenses etc. and the tariff thereto for Solar PV / Thermal / Rooftop / Canal top / Water works, as per the technology approved by the MNRE, shall be determined on project specific basis depending on the prevalent market trend only if required i.e. in case the competitive bidding route for any reason does not take effect. The broad guiding parameters shall be as under:-

48. **Capacity Utilisation Factor.**– The Capacity utilisation factor for Solar PV project shall be 19%. Provided that the Commission may deviate from above norm in case of project specific tariff determination.
49. **Operation and Maintenance Expenses.** –
- (1) The O&M Expenses shall be determined based on prevalent market conditions.
 - (2) Normative O&M expenses allowed at the commencement of the Control Period under these Regulations shall be escalated at the rate of 5.72% per annum.
50. **Auxiliary Energy Consumption.** – The auxiliary energy consumption shall be 0.25% of the gross generation.

Chapter – 9

Technology specific parameters for Biomass Gasifier based Power Project

51. Technology Aspects.–

- (1) A process achieved by reacting biomass at a high temperatures without combustion / incomplete combustion, with a controlled amount of oxygen and/or steam resulting in production of combustible gases consisting of a mix of Carbon Monoxide (CO), Hydrogen (H₂) and traces of Methane (CH₄), which shall be called synthesis gas to be used as fuel. The projects shall qualify as biogas based power project provided it is using new plant and machinery and having a grid connected system that uses 100% syngas engine with MNRE approved gasification technology and shall use non fossil fuel as approved by MNRE.
- (2) The useful life, for the purpose of these Regulations, for biomass gasification based Projects, shall be 20 years.
- (3) The normative Capital Cost, after accounting for capital subsidy, shall be Rs. 4.43 Crore / MW for the entire control period unless reviewed by the Commission.
- (4) The threshold Plant Load Factor (PLF), including stabilisation period, for the purpose of determining levellised generic tariff under these Regulations shall be 85%.
- (5) The Auxiliary Energy Consumption (AUXe), for the purpose of determination of levellised generic tariff under these Regulations, shall be 10%.
- (6) The Normative Specific Fuel consumption shall be 1.25 Kg./kWh.
- (7) The Normative Operation and Maintenance (O&M) expenses shall be Rs. 0.53 Crore / MW for the base year i.e. the FY 2017-18, the same shall be subject to an escalation factor @ 5.72% per annum from second year onwards.
- (8) The base year (FY 2017-18) fuel cost shall be Rs. 3270 / MT and the same shall be escalated @ 5% per annum for the purpose of arriving at generic levellised tariff for the entire useful life of the project.

Chapter – 10

Technology specific parameters for Biogas Power Project

52. Biogas based power projects. –

- (1) A technology for generation of power using a mixture of different gases produced by the breakdown of organic matter(anaerobic digestion with anaerobic organisms in the absence of oxygen / fermentation of biodegradable materials) i.e. produced from raw materials such as agricultural waste, manure, poultry droppings, cow dung, municipal waste plant material, sewage, green waste or food waste. The projects shall qualify as biogas based power project provided it is using new plant and machinery and having a grid connected system that and uses 100% biogas fired engine with MNRE approved technology.
- (2) The useful life, for the purpose of these Regulations, for biogas based projects, shall be 20 years.
- (3) The normative Capital Cost, after accounting for capital subsidy, for the entire control period beginning the FY 2017-18 shall be Rs. 8.86 Crore / MW unless reviewed earlier by the Commission.
- (4) The threshold Plant Load Factor (PLF), including stabilisation period, for the purpose of determining levellised generic tariff under these Regulations shall be 90%.
- (5) The Auxiliary Energy Consumption (AUXe), for the purpose of determination of levellised generic tariff under these Regulations, shall be 12%.
- (6) The Normative Fuel consumption shall be 3.0 Kg / kWh of substrate mix.
- (7) The Normative Operation and Maintenance (O&M) expenses shall be Rs. 0.53 Crore / MW for the base year i.e. the FY 2017-18, the same shall be subject to an escalation factor @ 5.72% per annum from second year onwards for determining levellised tariff for the entire useful life of the project.
- (8) The base year (FY 2017-18) fuel cost (Feed Stock Price) shall be Rs. 1229 / MT and the same shall be escalated @ 5% per annum for the purpose of arriving at levellised tariff for the entire useful life of the project. Provided the cost recovery from digester effluent shall be set off against the Fuel Cost (feed stock price) while determining generic levellised tariff.

Technology specific parameters for Processed Municipal Solid Waste (WtE) based Power Projects based on Rankine Cycle Technology

53. A project shall qualify as MSW (WtE) based power project if it uses processed municipal solid waste and are based on Rankine cycle technology application, combustion or incineration, Bio-methanation, Pyrolysis and High end gasifier technologies etc.
- (1) **Capital Cost.** – The normative capital costs during the entire control period under these Regulations, unless reviewed earlier by the Commission, shall be Rs. 15 Crore / MW.
 - (2) **Plant Load Factor (PLF).** –
 - (1) Threshold Plant Load Factor for determining fixed charge component of tariff for the municipal solid waste WtE projects shall be as under:-
PLF(%) processed MSW (WtE) based Power Projects
 - a) During Stabilisation 65%
 - b) During the remaining period of the first year (after stabilization) 65%
 - c) From 2nd Year onwards 75%
 - (2) The stabilization period shall not be more than 6 months from the date of commissioning of the project.
 - (3) **Auxiliary Energy Consumption (AUXe)** – The auxiliary power consumption for the Waste to energy power projects using municipal solid waste shall be 15.5%.
 - (4) **Operation and Maintenance Expenses (O&M)** – The Normative O&M expenses for the first year of the control period under these Regulations i.e. FY 2017-18 shall be 6.5% of normative capital cost. The same shall be escalated @ 5.72% per annum to arrive at the levelled tariff for the entire useful life of the project.

Chapter – 12

Renewable purchase obligation (RPO) and Renewable Energy Certificate (REC)

54. Renewable Purchase Obligation. –

² (1) ~~Every obligated entity including distribution licensee, consumers owning captive power plant and open access consumers including short term open access consumers in Haryana, shall purchase energy from renewable energy sources under the Renewable Purchase Obligation (RPO) as under:-~~

FY	Existing Total RPO (%) of Consumption		Revised Minimum RPO (%) of Total Consumption Excluding Hydro	
	Total RPO	Solar	Non-Solar	Solar
2016-17	3.75	1.0	2.75	1.00
2017-18	4.00	1.25	2.75	2.50
2018-19	4.50	1.50	3.00	4.00
2019-20	4.75	2.00	3.00	5.50
2020-21	5.00	2.50	3.00	7.00
2021-22	5.50	3.00	3.00	8.00

~~(2) Provided that solar renewable purchase obligation specified above shall be procured from generation based on solar energy sources only.~~

~~Provided further, such obligation to purchase renewable energy shall be inclusive of the purchases, if any, from renewable energy sources already being made by obligated entity concerned.~~

~~Provided also that the power purchases under the power purchase agreements for the purchase of renewable energy sources already entered into by the distribution licensees and consented to by the Commission shall continue to be made till validity of the Power Purchase Agreement approved by the Commission, even if the total purchases under such agreements exceed the RPO as specified in these regulations.~~

~~Provided also that the issue of interchangeability of solar and non-solar RPO, if decided in favour at Central level, shall be applicable under these Regulations.~~

(1) Every obligated entity including distribution licensee, consumers owning captive power plant and open access consumers including short term open access consumers in Haryana, shall purchase energy from renewable energy sources under the Renewable Purchase Obligation (RPO) as under:-

² Omitted and inserted Regulation 54, vide Second amendment (B), 2019.

FY	Existing Total RPO (%) of Consumption		Revised Minimum RPO (%) of Total Consumption Excluding Hydro	
	Total RPO	Solar	Non Solar	Solar
2016-17	3.75	1.0	2.75	1.00
2017-18	4.00	1.25	2.75	2.50
2018-19	4.50	1.50	3.00	4.00
2019-20	4.75	2.00	3.00	5.50
2020-21	5.00	2.50	3.00	7.00
2021-22	5.50	3.00	3.00	8.00

- (2) *Provided that solar renewable purchase obligation specified above shall be procured from generation based on solar energy sources only.*
- (3) *RPO for fossil fuel based Captive Power Plants (CPP) of 5 MW and above including Fossil fuel based co-generation captive plant of 5MW and above, shall be pegged at the RPO level applicable in the year in which CPP is commissioned. However, RPO of such plants commissioned up to 2018-19 shall be pegged at RPO applicable for the FY 2018-19. As and when the company add to the capacity of the CPP, it will have to provide for additional RPO as obligated in the year in which new capacity is commissioned.*
- (4) *The DISCOMs, while complying with the RPO, shall ensure trade-off between REC & purchase of RE Power and take financial prudent action accordingly.*

Provided further, such obligation to purchase renewable energy shall be inclusive of the purchases, if any, from renewable energy sources already being made by obligated entity concerned.

Provided also that the power purchases under the power purchase agreements for the purchase of renewable energy sources already entered into by the distribution licensees and consented to by the Commission shall continue to be made till validity of the Power Purchase Agreement approved by the Commission, even if the total purchases under such agreements exceed the RPO as specified in these regulations.

Provided also that the issue of interchangeability of solar and non-solar RPO, if decided in favour at Central level, shall be applicable under these Regulations.^P

55. Certificates under the Regulations of the Central Commission. –

- (1) Subject to the terms and conditions contained in these regulations the 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.

Provided that in the event of the obligated entity fulfilling the renewable purchase obligation by purchase of certificates, the obligation to purchase electricity from generation based on solar as renewable energy source can be fulfilled by purchase of solar certificates only, and the obligation to purchase electricity from generation based on renewable energy other than solar can be fulfilled by purchase of non-solar certificates.

- (2) Subject to such direction as the Commission may give from time to time, the obligated entity shall act in consistent with the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 notified by the Central Commission and as amended from time to time in regard to the procurement of the certificates for fulfillment of the Renewable Purchase Obligation under these regulations.
- (3) The Certificates purchased by the obligated entities from the power exchange in terms of the regulation of the Central Commission mentioned in sub regulation (1) of this Regulation shall be deposited by the obligated entities to the Commission in accordance with the detailed procedure issued by the Central Agency.

The Obligated Entities including the Power Utilities in Haryana under these Regulations may meet its RPO target by way of own generation or procurement of power from RE developer or by way of purchase from other licensee or by way of purchase of Renewable Energy Certificate or by way of combination of any of the above options.

Provided that in the case of an obligated entity with conventional captive power generation plant as defined in the Electricity Act, 2003, may meet their RPO, solar and non - solar as the case may be by self / own generation of respective renewable power.

56. State Agency.–

- (1) The Commission designates Haryana Renewable Energy Development Agency (HAREDA) as the State Agency for accreditation and recommending the renewable energy projects for registration and to undertake functions under these regulations.
- (2) The State Agency shall function in accordance with the directions issued by the Commission and shall act in consistent with the procedures rules laid by Central Agency for discharge of its functions under the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 as amended from time to time.
- (3) The State Agency shall submit quarterly status to the Commission in respect of compliance of renewable purchase obligation by the obligated entities in the format as stipulated by the Commission and may suggest appropriate action to the Commission if required for compliance of the renewable purchase obligation.
- (4) If the Commission is satisfied that the State Agency is not able to discharge its functions satisfactorily, it may by general or special order, and by recording reasons in writing, designate any other agency to function as State Agency as it considers appropriate.

57. Effect of default. –

- (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.

Provided that the fund so created shall be utilized, as may be directed by the Commission, for purchase of the renewable energy certificates.

Provided further that the Commission may empower an officer of the State Agency to procure from the Power Exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations, out of the amount in the fund.

Provided also that the distribution licensee shall be in breach of its licence condition if it fails to deposit the amount directed by the Commission within 30 days of the communication of the direction or within such period as directed by the Commission.

- (2) Where any obligated entity fails to comply with the obligation to purchase the required percentage of power from renewable energy sources or the renewable energy certificates, it shall also be liable for penalty as may be decided by the Commission under section 142 of the Act.

Provided that in case of genuine difficulty in complying with the renewable purchase obligation because of limited availability of renewable energy or non-availability of certificates, the obligated entity can approach the Commission for relaxation or carry forward of compliance requirement to the next year. However, in normal circumstances, the renewable purchase obligation shall not be waived of.

Provided further that where the Commission has consented in writing on an application made by the obligated entity to carry forward of compliance requirement, the provision of regulation 57 (1) of these Regulation or the provision of section 142 of the Act shall not be invoked.

58. Banking of RE Power. –

~~³B A generator or a captive power producer or a Consumer in the State may bank power on payment of the banking charges along with the transmission and distribution losses ^A4 (Technical Loss) ²A for availing the open access on the transmission or distribution network of the licensees for banking and drawl of banked power from the Discoms after entering into the banking agreement with the concerned Discoms at the terms and condition specified in the agreement, as follows:~~

- ~~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 Energy Banked shall be permitted to be carried forwarded from month to month. The banked power shall be utilized within the same financial year failing which the~~

³ Omitted and inserted Regulation 58, vide Second amendment (B), 2019.

⁴ Inserted text in Regulation 58, vide First amendment (A), 2018

~~unutilized energy at the end of the financial year shall lapse, and no compensation whatsoever shall be claimed/ paid for such lapsed banked energy, provided the solar energy banked during the last quarter of the financial year shall be carried forward to the next financial year.~~

- ~~3. 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).~~
- ~~4. The drawl of bank power shall also be not allowed during peak load hours and time of day (ToD) tariff period.~~
- ~~5. The Banked Energy Shall be calculated at the end of a month as follows: -Banked Energy at the end of month (E_{bi})= {E_g(1-losses)-E_c} * (1-b) + E_b (i-1)~~

~~*E_g = Energy Generation for the ith month~~

~~*E_c = Energy consumption for the ith month~~

~~*E_b (i-1) = Energy Banked at the end of previous month~~

~~*b = Banking charges in kind.~~

~~Further, as far as scheduling and deviation mechanism is concerned, the Commission in the process of finalization of Regulations on forecasting, scheduling and settlement and once these Regulations are notified the same shall be applicable.~~

~~The Solar power shall be adjusted as first charge in order of consumption of energy by a consumer. The banking will be counted on daily basis for the purpose of monthly account.~~

~~Settlement of wheeled energy at consumer End shall be in the following priority:~~

- ~~1. Solar generation after deduction of losses.~~
- ~~2. Captive Power~~
- ~~3. Banked Energy from Solar~~
- ~~4. Open Access Power through Exchange~~
- ~~5. Discom power~~

~~HVPNL / SLDC shall formulate the criteria for settlement of wheeled energy at Consumer end in consultation with the Stakeholders and submit the same to the Commission for approval within 3 months of notification of these Regulations.~~

RE based captive generating plants in the State may bank power for captive/own use on payment of the banking charges along with the transmission and distribution losses (Technical loss) for availing the open access on the transmission or distribution network of the licensees for banking and drawl of banked power from the Discoms after entering into the banking agreement with the concerned Discoms at the terms and condition specified in the agreement, as follows:

- 1. The RE 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 Energy Banked shall be permitted to be carried forwarded from month to month. The banked power shall be utilized within the same financial year failing which the unutilized energy at the end of the financial year shall lapse, and no compensation whatsoever shall be claimed/ paid for such lapsed banked energy, provided the solar energy banked during the last quarter of the financial year shall be carried forward to the next financial year.*

3. *The banking shall be allowed throughout the year, however, the drawl of banked power shall not be allowed during the peak months (July to mid October).*
4. *The drawl of bank power shall also be not allowed during peak load hours as mentioned in the ToD tariff approved by the Commission.*
5. *The Banked Energy Shall be calculated at the end of a month as follows:-*

*Banked Energy at the end of month (E_{bi})= {E_g(1-losses)-E_c} * (1-b) + E_b (i-1)*

** E_g = Energy Generation for the ith month*

** E_c = Energy consumption for the ith month*

** E_b (i-1) = Energy Banked at the end of previous month*

**b = Banking charges in kind.*

Further, as far as scheduling and deviation mechanism is concerned, the Commission in the process of finalization of Regulations on forecasting, scheduling and settlement and once these Regulations are notified the same shall be applicable.

The RE power shall be adjusted as first charge in order of consumption of energy by a consumer. The banking will be counted on daily basis for the purpose of monthly account.

Settlement of wheeled energy at consumer End shall be in the following priority:

1. *RE generation after deduction of losses.*
2. *Captive Power*
3. *Banked Energy*
4. *Open Access Power through Exchange*
5. *Discom power. ⁵*

- 59. 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. In case the distance between the inter connection point and point of grid connectivity is more than 10 KMs then the cost of transmission line for the distance beyond the 10 KMs shall be borne equally between the Independent Power Producer and the licensee. However for canal based solar power projects, the transmission lines shall be provided by the utilities, free of cost, irrespective of the distance of the project from the substation, subject to the conditions that the solar power is generated and utilized within the state of Haryana and is counted towards RPO of the Distribution Licensee (s).

The cost of any augmentation required after the interconnection point in the grid system of the Transmission/Distribution Licensee shall also be borne by the Transmission/Distribution Licensee concerned. Further, the power utilities concerned, on being informed about the Scheduled Commissioning Date (SCOD), shall complete the evacuation system well in time.

⁵ *Transmission/Distribution Licensee shall bear the cost of Extra High Voltage (EHV)/ High Voltage (HV) transmission line up to a distance of 10 km and shared cost after 10KM, only in the case where the power is to be supplied to DISCOMs under approved PPA. RE Power producers installed by Independent*

⁵ Inserted text at the end of the Regulation 59, vide Second amendment (B), 2019.

Power Producers (IPP) for merchant sale or captive consumption, should bear the cost themselves.

It is further clarified that the terms & conditions for cost of evacuation of power in respect of PPA entered into by DISCOMs/HPPC with RE Power Producers under competitive bidding, shall be governed by the terms of such PPA.]^B

60. ⁶ [(1) Notwithstanding anything contained in any other Regulation(s) notified by the Commission, Wheeling Charges, Cross Subsidy Charges, Transmission & distribution charges and Additional Surcharge shall be totally waived of, for third party sale /Open Access consumers for energy from ground mounted / Roof Top Solar power, commissioned during the control period under these Regulations. This shall be subject to the condition that the solar power is generated and utilized within the State of Haryana and is counted towards RPO of the Distribution Licensee(s). However, Solar Energy purchased or generated by an obligated entity is to be counted towards the RPO of the said entity and not that of the Discoms.

Further provided that if such generated power is sold to obligated entities, Distribution licensee shall be eligible for RPO benefits only to the extent the consumed solar power is in excess of the purchase obligation of the obligated entity.

Further provided, that the Distribution Licensee shall be eligible for RPO benefits to the extent of unutilized banked power at the end of the financial year.

The waiver shall be applicable to the Captive Solar PV Power for self consumption as well. However, the losses, as determined by the Commission, shall be recovered in kind by the Haryana Power Utilities. Further, banking charges as per these Regulations, shall be applicable so that the Haryana Power Utilities are not burdened un-reasonably.

- (2) All the waivers/concessions/banking provided in these Regulations shall correspond to the period of 10 years from the date of commissioning or date of notification of this regulation, whichever is later, for power generated and consumed within the State of Haryana. Provided the waivers / concessions /banking shall be applicable till the aggregate installed capacity of 500MW of Solar PV Plants in the State is achieved, where after the Commission shall review the provision of waivers / concessions /banking taking into account the financial impact on the Distribution Licensees. Further provided that waivers / concessions /banking once provided to any project shall be applicable for a period of 10 years, as above.

^{A7} It is further clarified as under:-

1. ~~The cap of 500MW is the aggregate installed capacity of the Solar PV projects commissioned in Haryana for consumption of power within Haryana and availing waivers/concessions provided under these Regulations. Accordingly, HVPNL shall consider grant of connectivity subject to feasibility, date of registration of the project and financial closure.~~
2. ~~HAREDA, being the Nodal Agency shall monitor the progress of projects set up in the State in terms of milestones related to:-~~

⁶ Omitted and inserted Regulation 60, vide Second amendment (B), 2019.

⁷ Inserted new text after sub-regulation (2) of regulation 60, vide First amendment (A), 2018

- a) ~~Installed capacity of Plant & Location.~~
- b) ~~Installed capacity tied up for consumption in Haryana.~~
- c) ~~Land acquisition.~~
- d) ~~Grant of connectivity for open access.~~
- e) ~~Financial closure.~~
- f) ~~Commissioning date.~~

~~For this purpose, HAREDA shall develop a suitable interface on their website, within two months, so that developers can directly upload the status of progress of their projects as and when there is any change in status with respect to above mentioned milestone. The data shall be easily visible to all those visiting the HAREDA website.~~

~~All developers desirous of availing waivers/concessions under these Regulations shall register specific project with HAREDA. Connectivity for such Solar PV project shall be granted by the Utility provided they are found to be registered on the HAREDA website.^{3A}~~

- (1) Notwithstanding anything contained in any other Regulation(s) notified by the Commission, Wheeling and Transmission Charges will be exempted for the entire life of the project from the date of commissioning for all Captive Solar Power Projects which have submitted applications to Haryana Renewable Energy Development Agency (HAREDA) for registration of project, purchased land or have taken land on lease for thirty years and have bought equipment & machinery or invested at least Rs. one crore per Mega Watt for purchase of equipment & machinery for setting up of such Captive Solar Power Projects till 13th February, 2019, while cross subsidy surcharges and additional surcharges are not applicable for Captive Solar Power Projects as per provisions of HERC Regulations (Electricity Act 2003). For determining the investment of Rs. One crore per MW, payment for equipment should be made into the bank accounts of equipment supplier before 13th February, 2019 and proof of the same is to be submitted.
- (2) No waiver of wheeling and transmission charges, cross subsidy surcharges and additional surcharges shall be given to solar/non solar power Projects set up by IPP/generators for third party sale.
- (3) Against the waivers, Renewable Purchase Obligation (RPO) benefit will be provided to Power Utilities.

~~However, the losses, as determined by the Commission, shall be recovered in kind by the Haryana Power Utilities. Further, banking charges as per these Regulations, shall be applicable so that the Haryana Power Utilities are not burdened un-reasonably.^B~~

- 61. Cluster of rooftops of public / private buildings.** – Some percentage capacity (to be fixed from time to time) for the setting up of ground mounted mega watt scale grid connected power plants, to meet the solar RPO shall be developed by setting up of grid connected rooftop solar power plants. For that the offers shall be invited by Renewable Energy Department, Haryana/HAREDA from the independent power producers for development of grid connected rooftop solar power plants, of capacity ranging from 250 kWp to 1 MW, on a cluster of public private buildings on the last lowest tariff discovered and conveyed by HPPC. The entire power produced by power producers who set up plants within four years from the date of notification of

this policy shall be purchased by the HPPC or any entity of Haryana Govt. Alternatively, the developer can also supply/provide the power for the captive use of the premises where the system is installed along with net meter and can sell the remaining power to HPPC or any entity of Haryana Govt. on the last lowest tariff discovered and conveyed by HPPC or to third party as per HERC regulations.

The rooftop space available in the government organization, institutions, buildings or vacant land of the same can also be provided on lease/rent to the Independent Power Producer/ RESCO developer for setting up of solar power projects.

For such sites the lease/rent rate shall be decided by a Committee of Deputy Commissioner of concerned district, PWD (B&R) Department and the Department owning the building. The developer can also supply/provide the power for the captive use of the premises where the system is installed along with net meter and can sell the remaining power to HPPC on the minimum last tariff discovered and conveyed by HPPC or to third party as per the HERC Regulations.

- 62. Discount Factor.** – The discount factor for working out levelised generic tariff shall be the weighted average cost of capital (WACC).

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- 63. Deviation from norms.** – Tariff for sale of electricity by the RE Generating company may also be determined in deviation from the norms specified in these regulations subject to the conditions that the levellised tariff over the useful life of the project on the basis of the norms in deviation does not exceed the levellised tariff over the entire useful life of the project calculated on the basis of the norms specified in these regulations.

Provided that the reasons for deviation from the norms specified under these Regulations shall be recorded in writing.

- 64. Others.** –

- a) The provisions, if any, contained in any other regulation relating to reduction of contract demand shall not be applicable for solar PV Power.

⁸[^B In this regard, it is further clarified that the consumers shall be allowed to install Rooftop solar power plant irrespective of their sanctioned load. Such consumers shall be allowed to sell the power so generated to HPPC at their least discovered solar power procurement price of latest preceding financial year.

However, benefit of net metering shall not be allowed to such consumers. DISCOMs shall allow grid connectivity to such consumers within 15 days from the date of application.]^B

- b) In case of additional cost on account of GST, the generator can approach the Commission with necessary details for allowing additional tariff.
- c) The imbalance charges as per Open Access Regulation will not be applicable for Solar Power generated and consumed within the State.

⁹[^Bd) *Solar power developers shall procure a Certificate from irrigation & water resources department/public health engineering department regarding availability/feasibility of installation of solar power plant on canal/river/reservoir/nallah/water works etc., before going ahead with the project. The prospective developer shall proceed in the matter with concurrence of the department concerned and HAREDA.*

- e) *In order to promote Solar Power generation in Haryana along with battery storage, smart meter and smart grid, the licensees shall provide minimum incentive of Rs. 1/- unit for minimum period of 5 years. However, battery storage so installed should be of the minimum capacity equivalent to contract load. The incentive payable under these Regulations shall be reviewed by the Commission every year along with ARR/Tariff petition for that year and shall be made revenue neutral while issuing Order on the ARR/Tariff petition of the licensees.]^B*

- 65. Power to Relax.** – 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 suo - moto relax any of the provisions of these regulations or on an application made before it by an interested person.

⁸ Inserted text after the clause (a) of Regulation 64, vide Second amendment (B), 2019.

⁹ Inserted two new clause (d) and (e) at the end of the Regulation 64, vide Second amendment (B), 2019.

- 66. Issue of orders or directions.** – Subject to the provisions of the Act and these regulations, the Commission may, from time to time, issue orders and procedural directions with regard to the implementation of these regulations and specify the procedure to be followed on various matters, which the Commission has been empowered by the regulations to direct and matters incidental thereto.
- 67. Power to amend.** – The Commission may, at any time, add, vary, modify or amend any of the provisions of these regulations.
- 68. Power to remove difficulties.** – If any difficulty arises in giving effect to any of the provisions of these regulations, the Commission may, by general or special order, make such provisions, which in the opinion of the Commission are necessary or expedient to do so.
- 69. Savings.** – Nothing in these Regulation shall limit 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 law / statutes. Nothing in these Regulations shall bar the Commission from adopting, any other procedure, which may be at variance with any of the provisions of these Regulations, as long as they are in conformity with the provisions of the Electricity Act, 2003 and the policies framed by the Central / State Government thereto.

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

Provided also that nothing in these regulations shall, expressly or implicitly, bar the Commission from dealing with any matter under these Regulations or exercising any power under the Act for which no regulations have been framed.

By Order of the Commission

(Sd.)...

Director Tariff HERC