

**PUNJAB STATE ELECTRICITY REGULATORY COMMISSION
SCO No. 220-221, SECTOR 34-A, CHANDIGARH**

**Petition No. 50 of 2017 (Suo-Motu)
Date of Order:31.10.2017**

In the matter of: Adoption of Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2017 and determination/fixation of levellised generic Tariff for Renewable Energy Power Projects for FY 2017-18.

Present: Ms. Kusumjit Sidhu, Chairperson
Sh. S.S. Sarna, Member
Ms. Anjuli Chandra, Member

Order

The Punjab State Electricity Regulatory Commission (Commission) in its Order dated 30.09.2010 in petition no. 32 of 2010 (Suo-Motu), after due process, adopted the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 (CERC RE Regulations, 2009), valid upto 31.03.2012, with State specific modifications in respect of fuel price for Biomass based Power Projects and normative plant load factor (PLF) for Non-fossil fuel based Co-generation Projects. In the same Order, the Commission also determined the generic levellised generation tariff for renewable energy power projects (other than Solar) to be commissioned during FY 2010-11. The tariff for Solar projects for FY 2010-11 was determined vide Order dated 07.07.2010 in petition no. 26 of 2010 (Suo-Motu). Thereafter, vide Order dated 31.10.2011 in petition no. 59 of 2011 (Suo-Motu), the Commission determined the levellised generic tariff for various renewable

energy technologies/projects (RE Projects) to be commissioned in FY 2011-12.

2. CERC notified the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 (CERC RE Regulations, 2012) on 06.02.2012 for the next 5 years control period (FY 2012-13 to FY 2016-17) valid upto 31.03.2017 and determined the levellised generic tariff for RE Projects. The Commission in its Order dated 19.07.2012 in petition no. 35 of 2012 (Suo-Motu), after due process, adopted the said Regulations with State specific modifications in respect of Non-fossil fuel based Co-generation Projects and also determined the levellised generic tariff for RE Projects for FY 2012-13.

3. Subsequently, the Commission determined the levellised generic tariff for RE Projects for FY 2013-14 vide its Order dated 25.06.2013 in petition no. 37 of 2013 (Suo-Motu). Further, the Commission determined the levellised generic tariff for RE Projects for FY 2014-15 vide its Order dated 05.09.2014 in petition no. 42 of 2014 (Suo-Motu). In the same Order, the Commission, after due process, adopted the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) (First Amendment) Regulations, 2014 dated 18.03.2014 (CERC Regulations First Amendment, 2014) partly with regard to normative capital cost for Biomass based Power Projects other than exclusive use of rice straw using water cooled condenser.

4. Thereafter, the Commission vide Order dated 24.07.2015 in petition no.43 of 2015 (Suo-Motu), considering the CERC (Terms

and Conditions for Tariff determination from Renewable Energy Sources) (Second Amendment) Regulations, 2014 dated 05.01.2015 (CERC Regulations Second Amendment, 2014) and CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Third Amendment) Regulations, 2015 dated 10.07.2015 (CERC Regulations Third Amendment, 2015), fixed the Station Heat Rate (SHR) & Calorific Value (CV) for Biomass based Power Projects as 4126 kCal/kWh & 3174 kCal/kg and determined the levellised generic tariff for FY 2015-16 accordingly.

5. In furtherance to the same, the Commission in its Order dated 22.03.2016 in petition no. 3 of 2016 (Suo-Motu) adopted the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Fourth Amendment) Regulations, 2015 dated 07.10.2015 (CERC Regulations Fourth Amendment, 2015), vide which norms/parameters for Municipal Solid Waste (MSW) and Refuse Derived Fuel (RDF) based Power Projects were specified by CERC and tariff determined for such projects.

6. Thereafter, the Commission vide its Order dated 23.11.2016 in petition no. 55 of 2016 (Suo-Motu) determined the levellised generic tariff for RE Projects for FY 2016-17 and also adopted the amendments with respect to (i) the remaining portion of the First Amendment in respect of (a) capital cost of Biomass based Power Projects (other than exclusive use of rice straw) with air cooled condenser and capital cost for Biomass based Power Projects with exclusive use of rice straw, both with air cooled & water cooled condenser (b) auxiliary power consumption (c) normative O&M expenses; (ii) station heat rate with 15% use of fossil fuel on

annual basis as per Third Amendment and (iii) O&M charges for Solar PV Power Projects as per Fifth Amendment.

7. As per the above, the Commission adopted the CERC RE Regulations, 2012 and all its amendments except (i) the PLF for Non-fossil fuel based Co-generation Projects which the Commission had fixed as 80% in its Order dated 19.07.2012 in petition no. 35 of 2012 (Suo-Motu) and (ii) the provision in the First Amendment, 2014 to CERC RE Regulations, 2012 for constituting a State level committee for deciding the biomass fuel price annually through an independent survey which was not agreed to by the Commission in its Order dated 05.09.2014 in petition no. 42 of 2014 (Suo-Motu) and Order dated 24.07.2015 in petition no. 43 of 2015 (Sou-Motu). In these above Orders, an alternative mechanism of applying the fuel price indexation mechanism was considered the preferred option by the Commission. Also, this provision has now been deleted from the CERC RE Regulations, 2017.

8. Central Electricity Regulatory Commission (CERC), vide notification dated 17.04.2017 notified Central Electricity Regulatory Commission (Terms & Conditions for Tariff determination from Renewable Energy Sources) Regulations 2017 (CERC RE Regulations 2017). These Regulations stipulate State specific norms/parameters. The Regulations are effective from 01.04.2017 and shall remain in force for a period of 3 years unless reviewed earlier or extended by CERC subject to certain provisos specified in Regulation 5. The tariff determined under these Regulations for the RE Projects commissioned during the control period shall continue to be applicable for the entire duration of the Tariff Period

as specified in the Regulations. Subsequently, CERC determined the levellised generic tariff for RE Projects for FY 2017-18 vide its Order dated 31.05.2017 in petition no. 05/SM/2017 (Suo-Motu). CERC RE Regulations, 2017 and its aforementioned Order dated 31.05.2017 are available on the CERC website www.cercind.gov.in.

Keeping in view the above, the Commission approved preparation of Staff Paper for adoption of CERC RE Regulations, 2017 and determination of the levellised generic tariff for RE projects for FY 2017-18.

9. A public notice was published on 22.08.2017 in the leading newspapers namely, The Tribune, Indian Express, Hindustan Times, Punjabi Tribune and Dainik Bhaskar inviting suggestions & objections on the Staff Paper from various stakeholders. Simultaneously, the Staff Paper was uploaded on the website of the Commission. The last date for receipt of suggestions & objections was 12.09.2017. Copy of the public notice along with Staff Paper was also sent to Government of Punjab, Punjab State Power Corporation Ltd., Punjab State Transmission Corporation Ltd. and Punjab Energy Development Agency for obtaining their views/comments on the same. Three suggestions/objections were received by the due date and another one after the office hours on 12.09.2017 through e-mail. Further, two suggestions/objections were received in the public hearing held on 19.09.2017. The Commission decided to consider all the suggestions/objections. The list of 6 objectors is as hereunder:

- i) Mytrah Energy (India) Pvt. Ltd., Hyderabad. (MEPL)
- ii) Biomass Power Producers Association, Mohali. (BPPA)
- iii) Ecogreen Energy Pvt. Ltd., Gurgaon.(EEPL)

- iv) Essel MSW Energia Ltd., Mumbai. (EMEL)
- v) Punjab Energy Development Agency, Chandigarh. (PEDA)
- vi) Punjab State Power Corporation Limited, Patiala. (PSPCL)

The Commission has carefully gone through the suggestions and objections filed by various objectors. A summary of the issues raised and view of the Commission thereon are contained in Annexure-1 of this Order.

10. As brought out in the foregoing paras, the Commission adopted CERC RE Regulations, 2012 fully except the PLF for Non-fossil fuel based Co-generation Projects. The Commission in its Order dated 19.07.2012 in petition no. 35 of 2012 (Suo-Motu), while adopting the said Regulations, had expressed the opinion that there is a need to optimize generation from the co-generation plants during off-season and accordingly specified the PLF for such projects as 80% instead of 53% specified by CERC in Regulation 49 of the said Regulations. The number of operating days on bagasse were fixed as 100 days [80 days (crushing) + 25% i.e. 20 days (off-season)] and the remaining period during the year (192 days) on biomass fuel mix for operation of such plants at a PLF of 80%. Accordingly, tariff for Non-fossil fuel based Co-generation projects was determined every year from FY 2012-13 onwards on the basis of weighted average of various parameters viz. auxiliary consumption, heat rate, fuel price, GCV and O&M expenses for Bagasse and Biomass. PSPCL in its various submissions over the period brought out that none of the sugar mills generate power using biomass fuel during off-season. PSPCL submitted that therefore, allowing weighted average cost of biomass fuel mix for Non-fossil fuel based Co-generation Projects for off-season period of 192 days by the Commission was

inequitable since cost of weighted average of various parameters for bagasse and biomass leads to higher tariff payable by PSPCL and additional financial burden on this account is passed on to the consumers. Analysis of data of power procured by PSPCL from the co-generation projects from FY 2012-13, FY 2013-14, FY 2014-15, FY 2015-16 and FY 2016-17 reveals that overall average PLF of such projects was 17.4%, 16.9%, 15.7%, 22.3% and 28% respectively.

11. In view of above, the Commission decides to adopt and hereby adopts the CERC RE Regulations, 2017 without any modifications in the norms/parameters for Non-fossil fuel based Co-generation Projects besides adopting the said Regulations for various other RE technologies. Therefore, the levellised generic tariff for FY 2017-18 determined by CERC vide its Order dated 31.05.2017 in petition no. 05/SM/2017 (Suo-Motu) for the RE technologies i.e. Biomass based Power Projects, Biomass Gasifier Power Projects, Biogas based Power Projects, Small Hydro Power Projects and Non-fossil fuel based Co-Generation projects, for the State of Punjab shall be applicable. For other RE technologies such as Solar PV, Solar Thermal, Wind, MSW and RDF based projects, project specific tariff shall be determined as provided in the CERC RE Regulations, 2017.

12. Accordingly, the generic tariffs for the various RE Projects/Technologies to be commissioned during the year 2017-18 will be as indicated in Table-1:

Table-1

Generic Tariff for RE technologies for FY 2017-18

Levelling Fixed Cost (₹/kWh)	Variable Cost (FY 2017-18) (₹/kWh)	Applicable Tariff Rate (FY 2017-18) (₹/kWh)	Benefit of Accelerated Depreciation, if availed (₹/kWh)	Net Levelling Tariff Rate upon adjusting for Accelerated Depreciation benefit (3-4) (₹/kWh)
1	2	3	4	5
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with water cooled condenser and travelling grate boiler				
2.75	5.21	7.96	0.13	7.83
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with air cooled condenser and travelling grate boiler				
2.91	5.33	8.23	0.15	8.09
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with water cooled condenser and travelling grate boiler				
2.87	5.21	8.07	0.14	7.93
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with air cooled condenser and travelling grate boiler				
3.03	5.33	8.35	0.16	8.20
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with water cooled condenser and AFBC boiler				
2.75	5.11	7.86	0.13	7.73
Biomass Power Projects [other than Rice Straw and Juliflora (plantation) based project] with air cooled condenser and AFBC boiler				
2.90	5.23	8.13	0.15	7.98
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with water cooled condenser and AFBC boiler				
2.86	5.11	7.97	0.14	7.83
Biomass Power Projects [Rice Straw and Juliflora (plantation) based project] with air cooled condenser and AFBC boiler				
3.02	5.23	8.25	0.16	8.09
Bagasse based Co-Generation Projects				
2.74	3.55	6.29	0.17	6.12
Biomass Gasifier Power Projects				
2.60	4.75	7.35	0.10	7.25
Biogas based Power Projects				
3.37	4.19	7.56	0.23	7.33

Particulars	Levelling (₹/kWh)
Small Hydro Power Projects	
Below 5 MW	6.00
5 to 25 MW	5.04

13. The Commission observes that in accordance with Regulation 23 of the CERC RE Regulations, 2017 adopted by the Commission, any incentive or subsidy offered by the Central or State Governments if availed by a RE Project developer is to be taken into consideration while determining tariff. Accordingly, any subsidy including capital subsidy/Central Financial Assistance or Generation based Incentive (a substitute for accelerated depreciation benefit) available to the developer shall be required to be passed on to Punjab State Power Corporation Ltd. (PSPCL) on actual disbursement basis. Although per unit reduction on account of accelerated depreciation benefit has been quantified, reduction in tariff on account of other incentives and subsidies has not been specified. However, such incentives/subsidies cannot be generically determined and will have to be worked out by PSPCL on case to case basis.

In the circumstances, PSPCL will, before signing the PPA with the developer, work out subsidy availed by the developer as per the formulae indicated in the applicable scheme framed by MNRE and reduce the tariff to that extent. However, for Biomass Gasifier Power Projects and Biogas based Power Projects, the capital subsidy granted by MNRE has already been accounted for in the tariff calculations.

14. The revised Tariff Policy notified by the Ministry of Power on 28.01.2016 provides under clause 6.4(2) as under:

“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.

However, till such notification, any such procurement of power from renewable energy sources projects, may be done under Section 62 of the Electricity Act, 2003.....”

The Commission decides that till such time tariff based competitive bidding is resorted to, bidding may be carried out on the basis of discount to be offered by the prospective bidders on the generic tariffs determined by the Commission in this Order, which would be the maximum/ceiling tariff for the purpose. However, for technologies for which levellised generic tariff has not been determined by the Commission in this Order, tariff based competitive bidding may be resorted to for allotment of projects except for waste to energy projects. A petition shall be filed before the commission by the procurer for consideration and adoption of tariff determined in the competitive bidding process.

Sd/-

(Anjuli Chandra)
Member

Sd/-

(S.S. Sarna)
Member

Sd/-

(Kusumjit Sidhu)
Chairperson

Date: 31.10.2017

Place: Chandigarh

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