

**PUNJAB STATE ELECTRICITY REGULATORY COMMISSION  
SCO 220-221, SECTOR 34-A, CHANDIGARH**

**Petition No.26 of 2010 (Suo Motu)  
Date of Order: 7.7.2010**

In the matter of : Determination of generic levellised generation  
Tariff for Solar Power Projects

Present : Shri Jai Singh Gil, Chairman  
Shri Satpal Singh Pall, Member  
Shri Virinder Singh, Member

**ORDER**

1. The Punjab State Electricity Regulatory Commission (Commission) determined tariffs for New and Renewable Sources of Energy (NRSE) projects/technologies in its order of 13.12.2007. In September 2009, the Central Electricity Regulatory Commission (CERC) notified the CERC (Terms & Conditions for Tariff Determination from Renewable Energy Sources) Regulations 2009 (RE Regulations) and an amendment of Regulation 8 of these Regulations was further effected by CERC in February 2010. The RE Regulations primarily aim to evolve the norms for determination of tariff of NRSE power.

2. In view of the aforementioned developments, the Commission felt the need to review NRSE tariffs determined earlier in its order of 13.12.2007. Accordingly, a staff paper was placed on the website of the Commission and a public notice issued on 27.5.2010 inviting comments/suggestions thereon by 7.6.2010. In addition to adopting the CERC Regulations, the staff paper also indicated levellised generic tariff for NRSE power based on CERC's order of 26.4.2010 in so far as it is specific to the projects located in the State of Punjab.

3. In response to the public notice, four objections/comments were received in relation to biomass/non-fossil fuel based co-generation projects which mainly raised issues relating to project capital cost, cost of fuel and its calorific value. The Commission proposes to pass a separate order in respect of biomass and non-fossil

fuel based co-generation after due consideration of the objections/comments received. This order pertains only to solar PV and solar thermal projects.

4. Before addressing the issue of determining tariffs for solar power projects, the Commission deems it necessary to refer to generation based incentives offered by the Ministry of New and Renewable Energy (MNRE), Govt. of India and the overall policy framework under which such projects will operate. In this context it may be noted that in February 2008, MNRE launched a demonstrative programme to encourage generation of grid quality power from megawatt size solar power plants. Under this programme, developers were eligible to set up solar power projects on a 'build, own and operate' basis with MNRE providing generation based incentive (GBI) upto a maximum of Rs.12/- per kWh for solar PV and Rs.10/- per kWh in the case of solar thermal power fed into the grid. The amount of GBI was to be determined after deducting the tariff fixed by the State Commission concerned from a notional amount of Rs.15/- per kWh (for solar PV) and Rs.13/- per kWh (for solar thermal). In all cases, GBI was not to exceed Rs.12/- and Rs.10/- per kWh for solar PV and solar thermal power respectively. This scheme was to provide GBI upto a maximum capacity of 50 MW of solar power projects in the country with a limit of 10 MW in any one state.

5. Consequent to the announcement of the National Action Plan on Climate Change in June 2008, Govt. of India through a Resolution dated 11.1.2010 approved the 'Jawaharlal Nehru National Solar Mission' (JNNSM) which aims at development and deployment of solar energy technologies in the country to achieve parity with grid power tariff by 2022. In order to facilitate solar power generation, JNNSM envisages a mechanism for bundling solar and conventional power for which purpose, NTPC Vidyut Vyapar Nigam Ltd, (NVTN) has been designated as the nodal agency. This arrangement provides that for each megawatt of installed capacity of solar power for which a power purchase agreement is signed by NVTN, the Ministry of Power, Govt. of India will allocate to NVTN an equivalent amount of megawatt capacity from the unallocated quota of NTPC coal based stations whereafter NVTN will supply this bundled power to the distribution utilities at voltage levels of 33 KV and above.

6. JNNSM also proposes to encourage rooftop solar PV and other small solar power plants with an installed capacity ranging from a minimum 100 KW to a maximum of 2 MW connected to the grid below 33 KV level. It is envisaged that the distribution utilities in the case of such projects will pay tariff to the developer determined by the State Electricity Regulatory Commission. However, a normative GBI will be payable to the utility by the Indian Renewable Energy Development Agency (IREDA). This will be derived as the difference between solar power tariff determined by the CERC for the concerned solar generation technology less an assumed price of Rs.5.50 per kWh with 3% annual escalation. Guidelines have also been framed in accordance with which projects obtaining GBI under the February 2008 scheme of MNRE can migrate to GBI and other incentives available under JNNSM.

7. The Commission notes that tariff for solar power projects in the State had first been determined in the Commission's order of 13.12.2007 when tariff was fixed at Rs.7/- per kWh for the year 2006-07 with an annual escalation of 5% upto 2011-12 bringing the present tariff to Rs.8.52 per kWh. Subsequently, the CERC on the basis of suo motu petitions has further issued two orders on 3.12.2009 and 26.4.2010 for determination of generic levellised NRSE generation tariffs. In respect of solar power projects, the proposed tariffs are applicable to units commissioned in 2010-11 and 2011-12 for solar PV and 2010-11, 2011-12 and 2012-13 in respect of solar thermal projects. These tariffs will, however, be payable only where power purchase agreements in either case are signed on or before 31.12.2011 and the entire capacity covered by the power purchase agreement is commissioned on or before 31.3.2012 and 31.3.2013 for solar PV and solar thermal projects respectively. In view of the exhaustive exercise undertaken by CERC for determination of tariffs for both types of solar power projects, the Commission deems it fit and proper that these are adopted and made applicable to the State of Punjab as well. Accordingly, the Commission decides as under:

- (i) The levellised tariff for solar PV projects commissioned during 2010-11 and 2011-12 will be Rs.17.91 per kWh. In the case of solar thermal projects, it will be Rs.15.31 per kWh for projects coming up in 2010-11, 2011-12 and 2012-13. In both cases, the tariff period will be 25 years.

- (ii) In case benefit of Accelerated Depreciation is availed by developers, net levelled tariff will be Rs.14.95 per kWh for solar PV and Rs.12.85 per kWh in the case of solar thermal power projects.
- (iii) These tariffs will be applicable for solar PV and solar thermal power projects based on technologies approved by MNRE.
- (iv) The above tariffs are exclusive of any taxes and duties as may be levied by the government which are allowable as a pass through on actual incurred basis.
- (v) CDM benefits, if any, will be shared in accordance with provisions of Regulation 21 of the RE Regulations.
- (vi) These tariffs will be applicable for solar projects with the installed capacity of 1 MW or above.
- (vii) Projects supplying solar power to distribution utilities through NRVN will be connected to the grid at voltage levels of 33 KV and above. The distribution licensee will in such a case grant connectivity without the need of seeking approval of the Commission under section 86 (1) (b) of the Electricity Act 2003.
- (viii) Rooftop solar PV and other small solar projects with installed capacity between 100 KW and 2 MW will be connected to the grid at voltages below 33 KV.
- (ix) Tariffs applicable in the case of projects obtaining GBI under the February 2008 scheme of the MNRE will continue to be as determined in the Commission's order of 13.12.2007.
- (x) The distribution licensee will at its own cost provide grid connectivity and the infrastructure for evacuation of solar power beyond the inter-connection point as defined in the RE Regulations.
- (xi) The distribution licensee may with the approval of the Commission purchase power from a solar power generator who is not eligible for GBI under any of the above mentioned schemes of MNRE/JNNSM.

8. As has been brought out above, the tariffs for both solar PV and thermal projects are applicable in cases where installed capacity is 1 MW or above. The Commission notes that CERC has initiated the exercise for determining tariff in the

case of solar projects with a capacity of less than 1 MW and a view in that respect will be taken after CERC concludes its deliberations in this respect.

Sd/-

**(Virinder Singh)**  
**Member**

Sd/-

**(Satpal Singh Pall)**  
**Member**

Sd/-

**(Jai Singh Gill)**  
**Chairman**

Chandigarh  
Dated: 7.7.2010