

**BEFORE THE HIMACHAL PRADESH ELECTRICITY REGULATORY
COMMISSION, SHIMLA**

Suo-Moto Petition No.: 104/2015

In the matter of:-

Model Power Purchase Agreement (PPA) for Solar PV Power Project(s) in the State of Himachal Pradesh.

**CORAM
S.K.B.S Negi
CHAIRMAN**

ORDER

In exercise to powers conferred under 86 (1) (b) of the Electricity Act, 2003, consequent to the notification of HPERC (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 (hereinafter referred to as “RE Tariff Regulations, 2012”) and the determination of Generic Levellised Tariffs for Solar PV generation under the RE Tariff Regulations, 2012 vide Order dated 08.09.2015, to facilitate the Solar PV Power Generator(s) of the State, Commission proposed to make the Model PPA for Solar PV Power Project(s) for sale of energy to the distribution licensee.

1. The Commission initiated the suo-moto petition No. 104/2015 to finalize the draft Model PPA for Solar PV Power Project(s). The text of draft Model PPA was made available to the stakeholders on the HPERC’s website www.hperc.org.
2. The Commission issued a public notice on dated 24.09.2015 in the newspapers, namely “The Tribune” and “Amar Ujala”, inviting objections/suggestions on the draft Model PPA for Solar PV generation, from the stakeholders. The last date for submission of objections/suggestions was 26.10.2015.
3. The Commission vide letter dated 28.09.2015, requested the major stakeholders, including the prospective Solar PV generators, State Government, Directorate of Energy and HIMURJA to send their objections/suggestions as per the aforesaid public notice.
4. In response, the following stakeholders have submitted their comments/suggestions/objections on the proposed draft Model PPA for Solar PV generation:
 - (i) The Himachal Pradesh State Electricity Board Limited (HBSEBL), Vidyut Bhawan, Shimla-171004 (HP).

- (ii) The H.P. Govt. Energy Development Agency (HIMURJA), Urja Bhawan, Kasumpti, Shimla- 171009.
- (iii) The Directorate of Energy (DoE), GoHP, Phase-III, Sector-6, New Shimla- 171009 (HP).
- (iv) Himachal Pradesh Power Corporation Limited (HPPCL), Himfed Bhawan, Panjri (Below old MLA Quarters), Shimla- 171005(HP).
- (v) Hotel City Heart, Near Chaughan Ground, Nahan- 173001(HP).
- (vi) Shri Sadanand Chauhan, Ex. M.L.A., Nahan-173001 (HP).
5. The Commission issued a notice dated 02.01.2016 to the above objectors (Stakeholders) for hearing related to the draft Model PPA for Solar PV generation, which was held on 29.01.2016. The list of participants of the aforesaid hearing is annexed as Annexure-A to this Order.
6. The gist of objections/suggestions received from stakeholders is given as under and Commission's analysis/views after considering the written submissions and views expressed in the hearing, have been briefly discussed in the succeeding paragraphs:-

Sr. No.	Existing Provisions/Clauses of Model PPA	Objections/Suggestions
(1)	Himachal Pradesh Power Corporation Limited (HPPCL).	
	_____	Sale of Power and metering /billing at bus bar of the Solar Power Project, instead of "Sale of power and metering/billing at interconnection point."
(2)	H.P.Govt. Energy Development Agency (HIMURJA).	
	_____	The draft Model PPA for setting up of Solar PV Power Projects in the State of H.P. seems to be generally in order.
(3)	Directorate of Energy (DOE).	
a)	On page 1, under heading-Draft Case B under REC Mechanism for mutually agreed initial period of the total term and generic levellised tariff for the balance useful life of the project.	<i>The generic levellised tariff for balance period should be separated or made case in view of the fact that the sale for such power is optional.</i>
b)	Page 2, para 3- whereas the company has agreed to sell and HPSEBL has agreed to purchase the entire electrical energy generated from the Project at the Interconnection Point; and	Page 2, para 3- whereas the company has agreed to sell and HPSEBL has agreed to purchase the entire/part electrical energy generated from the Project at the Interconnection Point; and - part word needs to be added.
c)	Page 2, Case B, para 4- whereas the parties have agreed that such sale/purchase of energy shall be governed by the Renewable Energy Certificate (REC) Mechanism for the first.....years, or any other mutually agreed period, from the Synchronization Date of the first unit of project, and thereafter, for the balance term of the agreement, by the generic levellised tariff including associated terms and conditions, determined by the Commission in accordance with HPERC (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 as amended from time to time.	Page 2, Case B, para 4- whereas the parties have agreed that such sale/purchase of energy shall be governed by the Renewable Energy Certificate (REC) Mechanism for the firstyears, or any, other mutually agreed period, from the Synchronization Date of the first unit of project, and thereafter, for the balance term of the agreement, by the generic levellised tariff, it should be optional.

d)	Page 22, Case B, part (a)-The HPSEBL shall pay for the net saleable energy (excluding the same sold by the company and purchased by HPSEBL under REC mechanism as per Section 6.1, delivered and sold at a fixed rate of Rs..... per kWh. This rate also accounts for-----	Page 22, Case B, part (a)- Payment payable by HPSEBL for the net saleable energy should be as per APPC.
e)	Page 24, item 6.4.2 - However, quantum of loss of deemed energy generation during any time shall not exceed the quantum corresponding to 19% CUF for the relevant period for the capacity actually commissioned and in working conditions during such time.	Quantum of loss of deemed energy generation during any time should be as per normative efficiency based on technology used.
f)	Page 30, item 8.1, para 2- The HPSEBL shall make payments of the bills raised within 60 days from the presentation of the bill by the company to the HPSEBL.	Page 30, item 8.1, para 2- The HPSEBL shall make payments of the bills raised as per CERC regulations.
g)	_____	Page 31, item 8.2, part (iii)- If the payment is made within 60 days then no rebate is applicable to the buyer beyond 30 days. This needs to be added as part (iii).
h)	Page 32, item 8.7- Date of Reimbursement shall mean the date on which the Cross Cheque is made into the account.	Page 32, item 8.7- Word RTGS is to be substituted to Cross Cheque, at present all payments are made through RTGS.
i)	Page 34, item 9.1 (h)- Agreement is to be separated for construction stage and operational stage.	Page 32, item 9.1 (h)- Insurance Policies need to be separated for construction stage and operational stage as Construction stage Policy needs not to be taken for entire life of the Project.
j)	Page 36, item 10.1- Term of agreement for PPA.	Page 36, item 10.1- Term of agreement is to be separated for each category i.e. Case A, Case B & Case C.
(4)	Hotel City Heart, Nahan & Shri Sadanand Chauhan , Ex. M.L.A., Nahan.	
a)	_____	At the current price that is offered, it won't be feasible to Generate and Supply the Power since the climatic conditions and geographical locations are not that favourable in Himachal region as compared to plain areas and it will limit the power generation. Further, to overcome the concerned issues, additional instruments/ equipments will be required to install, which will in turn increase the cost of Power Plant. Transportation and other things are also costly as compared to other states where these projects are under operation.
b)	_____	Suggested that price per unit must be increased to a minimum level of Rs. 12-13 per unit for at least 12 to 15 years from the date of Power Purchase Agreement as project cost is high comparatively here and recovery of that will take time, hence expected.
c)	_____	Further, HPERC should support in furnishing of all the concerned formalities under one roof or window until the commissioning of Power Plant and an indemnity that change in Government will not affect/modify the present Policies in operation to ensure the smooth running of operation of the solar power plant. Also, Public Sector organisations {Banks/Govt. Institutions} must be encouraged to support the cause of Renewable/ Green Energy by tendering easy loan, low interest rates and sector friendly procedures/policies.
(5)	Himachal Pradesh State Electricity Board Limited (HPSEBL).	
a)	Article 2.2; Definitions:	The following definitions may be incorporated in this Article:- 1. “Act” or “Electricity Act, 2003” shall mean the Electricity Act, 2003 and include any modification, amendments and substitution from time to time. 2. “Appropriate Commission” shall mean the Himachal Pradesh Electricity

		<p>Regulatory Commission referred to in section 82 of the Electricity Act, 2003.</p> <ol style="list-style-type: none"> 3. “Capacity Utilization Factor” or “CUF” shall have the same meaning as provided in CERC (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2009 as amended from time to time. 4. “Contracted Capacity” shall mean..... MW contracted with HPSEBL for supply by the SPD to HPSEBL at the interconnection point. 5. “Solar PV” the Solar Power Developer to provide to HPSEBL as per the terms and conditions of the agreement. 6. “Solar Power” shall mean power generated from the Solar Photovoltaic Power Project. 7. “Change in Law” shall mean any change in the provisions of Electricity law enforce, regulation, direction, notification issued by the competent authority from time to time. 8. “Conciliation Period” shall mean the period of 60 days or such other longer period as the parties may agree, commencing from the date of issuance of a Solar Power Developer Preliminary Default Notice or DISCOM Preliminary Default Notice as provided in Article 10 of this Agreement, for conciliation between the parties to mitigate the consequence of the relevant event having regard to all the circumstances. 9. “Delivered Energy” shall mean, with respect to any Billing Month, the kilo watt hours (kWh) of electrical energy generated by the Project and delivered to the DISCOM at the Interconnection Point, as measured by both energy meters at the Interconnection Point during the Billing Month at the designated substation of HPSEBL. 10. “Prudent Utility Practices” shall mean those practices, methods, techniques and standards, that are generally accepted for use in electric utility industries, taking into account conditions in India, and commonly used in prudent electric utility engineering and operations to design, engineer, construct, test, operate and maintain equipment lawfully, safely, efficiently and economically as applicable to power stations of the size, service and type of the Project, and that generally conform to the manufacturers’ operation and maintenance guidelines.
b)	Article 3; Construction stage:	<p>The following para may be added in this article:-</p> <p>The Solar Power Developer will install necessary current limiting devices such as thyristors etc if required. The Solar Power Developer shall provide protection system in compliance to grid code (as approved by HPERC/CERC) requirements for short circuit level, neutral grounding, current unbalance, limiting of harmonics, fault clearing time etc. A generating unit may be synchronized to the state grid system when the solar power developer has obtained permission for synchronization after meeting system requirements and such generating unit complies with Prudent Utility Practices.</p>

c)	Article 3.5; The HPSEBL shall provide adequate protection at the Interconnection Point, as a part of the Interconnection Facilities to ensure that no damage is done to its system due to paralleling of the station.	The existing clause may be substituted with the following:- The HPSEBL shall provide adequate protection at the Interconnection Points, as a part of the Interconnection Facilities to ensure that no damage is done to its system due to paralleling of the station at the cost of Solar Power Developer.
d)	Article 4 & 4.1; Commissioning and achieving Commercial Operation including Synchronization.	In this Article, the below mentioned paras may be added:- a) The Synchronization equipment shall be installed by the Solar Power Developer at its generation facility of the Power Project at its own cost. The Solar Power Developer shall under take force synchronization of its system with the Grid System only after the approval of Synchronization schemes is granted by the head of the concerned Sub-Station/Grid System and checking verification is made by the concerned authorities of the Grid system. b) The Solar Power Developer shall Commission the Plant within 24 months after the date of signing of PPA. In case the SPD could not complete the project within the stipulated period, an extension of 6 months shall be granted to complete the project and thereafter i.e. beyond 30 months from the date of signing of PPA, HPSEBL will not be having any obligation to purchase the power from the Solar Power Developer.
e)	Article 5.1; Plant Operation and Maintenance:	The following para may be inserted in this article:- Harmonics: The generator shall ensure that the harmonics injected into the grid shall conform to the grid specifications as specified by the Commission from time to time.
f)	Article 6.3; Supply of Active and Reactive Power:	The following paras may be inserted in this article:- a) Voltage regulation shall be such as to enable continued paralleling and synchronization with the network voltage at the point of interconnection. b) The equipment of the Solar Power Developer shall be designed for fluctuations in the frequency within limits of -5% and +3% of the standard frequency of 50 cycles per second.
g)	Article 6.4.3; Deemed Generation Note:- All the sections/clauses relevant to deemed generation shall be deleted in cases where deemed generation benefit is not to be allowed in view of the standard practices followed by the HPSEBL or all the parties otherwise agreed that such benefit is not to be allowed to the company.	The Deemed Generation shall be allowed as per HPERC guidelines notified vide letter No. HPERC/PPA/2014-15-3234-43 dated 27.12.2014.
h)	Article 8; Billing and payment :	The following may be added in Article 8.1 under the heading Letter of Credit :- a) However Letter of credit shall not be invoked for any disputed bill amount. b) Further LC can be invoked only when DISCOMs fail to pay the current monthly bill within 120 days after receipt of bill.
i)	New Article to be inserted-Article 17; Performance Bank Guarantee:	Performance Bank Guarantee: (i) The Performance Bank Guarantee of INR 5 lakh/MW to be furnished under this Agreement and before signing of this PPA, shall be for guaranteeing the commencement of the supply of power up to the Contracted Capacity within the time specified in this Agreement as per format

		<p>provided. The Performance Bank Guarantee of INR 5 lakh/MW shall be submitted in Guarantee for which PPA is to be signed. Performance Bank Guarantee will have a validity period of (36) months from the Effective Date (Date of signing of PPA).</p> <p>(ii) The failure on the part of the SPD to furnish the Performance Bank Guarantee before signing of this PPA or to maintain the Performance Bank Guarantee till the validity period of the performance Bank Guarantee as stated in the Agreement, shall be a material breach of the terms of this agreement on the part of the SPD.</p> <p>(iii) If the SPD fails to commence supply of power from the Scheduled Commissioning Date specified in this Agreement, subject to conditions mentioned in the agreement, DISCOM shall have the right to encash the Performance Bank Guarantee without prejudice to the other rights of DISCOM under this Agreement.</p> <p>(iv) DISCOM shall return/release the Performance Bank Guarantee within three (3) months after the Commercial Operation Date.</p> <p>(v) The return/release of the Performance Bank Guarantee shall be without prejudice to other rights of DISCOM under this Agreement:</p> <p>(i) In case of a failure to submit the documents as above, DISCOM shall have the right to terminate this Agreement by giving a Termination Notice to the SPD in writing, of at least seven (7) days. The termination of the agreement shall take effect upon the expiry of the 7th day of the Notice.</p> <p>(ii) DISCOM shall be entitled to encash all the Performance Bank Guarantee(s) submitted by the SPD.</p> <p>(iii) For the avoidance of doubt, it is clarified that this Article shall survive the termination of this Agreement.</p> <p>(iv) In case of inability of the SPD to fulfill any one or more of the conditions specified due to any Force Majeure event, the time period for fulfillment of the conditions, subsequent as mentioned in the Article, shall be extended for the period of such Force Majeure event.</p>
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7. Commission's Analysis.

(i) Definitions:

- (a) HPSEBL as per para-6 above, suggested to in-corporate the definitions of "Act" or "Electricity Act, 2003", "Appropriate Commission", "Capacity Utilization Factor" or "CUF", "Contracted Capacity", "Solar PV", "Solar Power", "Change in Law", "Conciliation Period", "Delivered Energy" and "Prudent Utility Practices".
- (b) The Commission accepts the suggestion to define the term "Act" or "Electricity Act, 2003" in the Model PPA. The term "Appropriate Commission", "Delivered Energy" and "Prudent Utility Practices" have already been defined in sub clauses 2.2.11, 2.2.48 & 2.2.58 of the draft Model PPA.

(c) The Commission is of the view that the “CUF” term should be as per the HPERC RE Tariff Regulations, 2012 and Solar PV Tariff order issued thereunder. The term “Change in Law” is already elaborated in clause 8.8 of the draft PPA.

For “Conciliation Period”, the provisions made in the clause 10.5(b) of Model PPA are more appropriate, compared to, as suggested by the HPSEBL.

(d) The Commission is of the view that the terms “Contracted Capacity”, “Solar PV” & “Solar Power” are not needed to be defined, as sufficient needed elaborations related to these terms are available in the draft Model PPA.

(ii) Article-3; Construction stage:

The provisions made in the Article-3 of draft Model PPA, particularly clauses -3.4 & 3.5 of the Model PPA have taken care of the suggestions made above in para-6 by the HPSEBL. The Provisions made in Article-3 shall be retained.

(iii) Article-3; Construction stage:

As suggested by the HPSEBL to add the following line “at the cost of Solar Power developer”, at the end of clause-3.5, the Commission accepts this suggestion. However, the suggestions made by HPSEBL, have already been considered in provisions made in the clause-3.5, read with sub clause 2.2.42 i.e. definition of “Interconnection Facility”.

(iv) Article-4; Commissioning and achieving Commercial Operation:

The HPSEBL as per the para-6 above, suggested to add two new paras in the Article-4. The Commission is of the view that Article -4 of the draft Modal PPA already takes care of the suggestions made by the HPSEBL. Regarding the synchronization of the Solar Power units with the grid and to make the PPA void beyond 30 months from the date of signing of PPA, the Commission is of the view that such provisions as suggested are not in-line with the RE Tariff Regulations, 2012 & Solar PV power tariff order issued thereunder. The Commission does not accept such suggestions.

(v) Article-5; Plant Operation and Maintenance:

The HPSEBL suggested to insert the provision of harmonics limit in this Article i.e. to specify the permissible harmonics injection in the grid. The Commission accepts above suggestion made by HPSEB Limited. The company shall organise operation and maintenance of the project, so as to ensure optimum utilization of the solar potential and if required, affect improvement (within the

overall scope of the project implementation) in the project in accordance with:

Sr. No. (i) to (vi)---No change.

(vii) The generator shall ensure that the harmonics injected in the grid alongwith other grid parameters shall be within permissible limits as per CEA (Technical Standards for Connectivity of the Distribution Generation Resources) Regulations, 2013 or any other relevant standards.

Article 9 of Model PPA shall also be amended suitably to take care of these aspects.

(vi) Article-6; Sale & Purchase of the Energy:

- (a) As mentioned in para-6 above, the HPSEBL suggested to add provisions related to voltage regulations & frequency limits. The provisions to specify the technical limits & parameters have already been made in the Schedule-II of the Modal PPA.
- (b) It is also suggested by the HPSEBL that the Deemed Generation shall be allowed as per HPERC guidelines notified vide letter No. HPERC/PPA/2014-15-3234-43 dated 27.12.2014. The Commission is of the view that the referred guidelines issued by the Commission for SHPs, may not be a standard practice & these guidelines are to be adopted on case to case basis.
- (c) The directorate of energy suggested to include the net salable energy rate as per APPC, in Case 'B', part (a). The Commission is of the view that the present sequence of the clauses/sub-clauses of draft Modal PPA are appropriate. As far as, other suggestion of the Directorate of energy in this Article i.e. 'Quantum of loss of deemed energy generation during any time should be as per normative efficiency, based on technology used', the Commission is of the view that the provisions made in the clause 6.4.2 are appropriate and shall be retained.

(vii) Article-8; Billing and Payment:

- (a) As mentioned in para-6 above, the HPSEBL suggested to add the provision i.e. not to invoke Letter of Credit (LC) in case of disputed bill amount & LC can be invoked within 120 days after receipt of energy bill(s). The Commission is of the view that the provisions made in the Article-8 are appropriate in respect of payment of energy bills. These provisions are in-line with the provisions already specified in the RE Tariff Regulations 2012. As such, Commission does not accept these suggestions.
- (b) The Directorate of Energy suggested that HPSEBL shall make payments of bills as per CERC Regulations. The provisions of

payment of bills provided in the Modal PPA are as per the RE Tariff Regulations, 2012, as such, the same shall be retained.

- (c) The Directorate of Energy also suggested that in clause 8.7, the word 'RTGS' may be substituted in place of 'Cross Cheque'. The Commission agrees with this suggestion. The clause 8.7 of Model PPA shall be rationalized accordingly.

(viii) Article-9; Undertakings:

The Directorate of Energy as mentioned in para-6 above, suggested that Insurance Policies referred in the clause 9.1(h) of draft Model PPA may be separated, for construction stage and operational stage. The Commission agrees to rationalise the provisions to take care of suggestions given by Directorate of Energy (DoE) as above.

(ix) Article-10; Term, Events of defaults and Termination:

The Directorate of Energy suggested that in clause 10.1 of draft Model PPA, the term of agreement is to be separated for each category i.e. Case-A, Case-B & Case-C. The Commission is of the view that the period of twenty five (25) years, mentioned in the draft Model PPA shall be applicable for Case-A and Case-C. However, for Case-B, the period of agreement may be specified as mutually agreed by the Parties in the PPA.

(x) Other Suggestions:

- (a) The HPSEBL as mentioned in para-6 above, suggested that new Article-17 (Performance Bank Guarantee) may be added in the Model PPA. The representative of HPSEBL in-line to their written submission, also emphasized in the hearing, to add the suggested Article in the Model PPA. Taking into consideration that such provisions are even not included in the Model PPA for SHPs and nascent stage of Solar PV Power generation in the State, as such provisions may be counter-productive. The suggestions made by HPSEBL do not find any merit, for its consideration at this stage.
- (b) The Himachal Pradesh Power Corporation Limited (HPPCL) suggested that sale of power and metering/billing may be done at bus-bar of the Solar Power Project. The provisions of accounting the saleable energy of the project(s) made in the Model PPA are conforming to the provisions of HPERC's RE Tariff Regulations, 2012 and the same shall be retained.
- (c) (i) The Directorate of Energy as per para-6 above, suggested the changes in the preamble of Model PPA. It is suggested that the word 'part' may be added alongwith word 'entire' appearing in the preamble lines i.e. 'HPSEBL has agreed to purchase the entire Electricity Energy generated from the project'. Commission agrees

that the Solar PV Power developer and HPSEBL may also have an option to sale/purchase the part of energy generated by the project. Accordingly, the word 'entire' appearing in the above said lines of the PPA shall be deleted.

(ii) The Directorate of Energy as per para-6 above, also suggested that the sale of power (energy) may be made optional, considering the option of REC Mechanism. The Commission agrees to the suggestion made by Directorate of Energy. Separate Model PPA for Solar PV generation under REC Mechanism shall be made available to the Solar PV generator(s).

- (d) Sh. Sadanand Chauhan, Ex. M.L.A. Nahan and Hotel City Heart, Nahan as per para-6 above, suggested for higher tariff for Solar Power generation in the State. The suggestion made by the stakeholders is not a part of this regulatory process. The Commission has already determined the Solar PV Power Tariff for FY 2015-16. As far as, other suggestion as above, of single window clearance is concerned, the matter pertains to the Government of Himachal Pradesh.

The Technical wing of the HPERC shall carry out the rationalization/modifications in the clauses/sub clauses as discussed above, accordingly in the Model PPA for Solar PV power generation. The Model PPA for Solar PV power generation under REC Mechanism shall be finalized separately.

It is so ordered accordingly.

Date: the 29th February, 2016.

-Sd/-
(S.K.B.S. Negi)
Chairman

Annexure-A

Sr. No.	Name of Stakeholders	Represented by
(i)	Directorate of Energy , GoHP.	Dr. Ajay Sharma, Director.
(ii)	HPSEBL.	(i) Sh. Bisheshwar Sharma, Additional SE(E). (ii) Sh. Ramesh Sharma, AE (E). O/o CE (SO), HPSEBL, Shimla- 171004.
(iii)	HIMURJA.	(i) P.K. Soni, Executive Engineer. Sh. (ii) Vineet Sood, Sr. Project Officer. Sh.