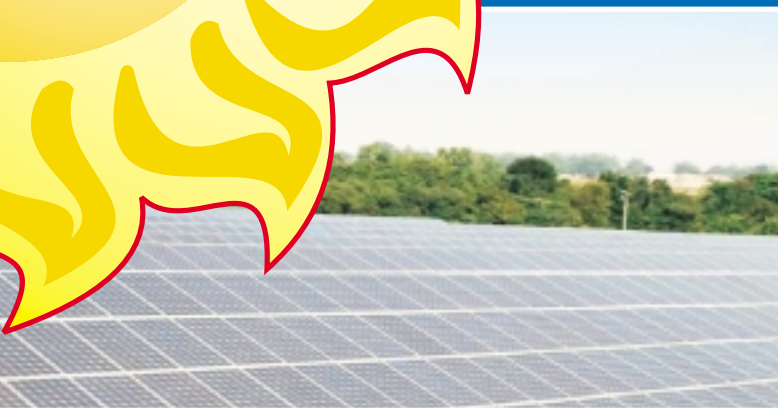


# JAWAHARLAL NEHRU NATIONAL SOLAR MISSION

*Building Solar India*



## Guidelines for Selection of New Grid Connected Solar Power Projects



सत्यमेव जयते  
Government of India



# JAWAHARLAL NEHRU NATIONAL SOLAR MISSION

*Building Solar India*



सत्यमेव जयते

**GOVERNMENT OF INDIA  
MINISTRY OF NEW AND RENEWABLE ENERGY**

*"Our vision is to make India's economic development energy-efficient. Over a period of time, we must pioneer a graduated shift from economic activity based on fossil fuels to one based on non-fossil fuels and from reliance on non-renewable and depleting sources of energy to renewable source of energy. In this strategy, the sun occupies centre-stage, as it should, being literally the original source of all energy. We will pool our scientific, technical and managerial talents, with sufficient financial resources, to develop solar energy as a source of abundant energy to power our economy and to transform the lives of our people. Our Success in this endeavour will change the face of India. It would also enable India to help change the destinies of people around the world."*

**Dr. Manmohan Singh, Prime Minister of India**

Launching India's National Action Plan on Climate Change on June 30, 2008

# Guidelines for

## SELECTION OF NEW GRID CONNECTED SOLAR POWER PROJECTS

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## SECTION 1

### BACKGROUND AND INTRODUCTION

#### 1.1 Preamble

The objective of the Jawaharlal Nehru National Solar Mission (JNNSM) under the brand 'Solar India' is to establish India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country as quickly as possible. The Mission has set a target of 20,000 MW and stipulates implementation and achievement of the target in 3 phases (first phase upto 2012-13, second phase from 2013 to 2017 and the third phase from 2017 to 2022) for various components, including grid connected solar power.

The successful implementation of the JNNSM requires the identification of resources to overcome the financial, investment, technology, institutional and other related barriers which confront solar power development in India. The penetration of solar power, therefore, requires substantial support. The policy framework of the Mission will facilitate the process of achieving grid parity by 2022.

In order to facilitate grid connected solar power generation in the first phase, a mechanism of “bundling” relatively expensive solar power with power from the unallocated quota of the Government of India (Ministry of Power) generated at NTPC coal based stations, which is relatively cheaper, has been proposed by the Mission. This “bundled power” would be sold to the Distribution Utilities at the Central Electricity Regulatory Commission (CERC) determined prices. The Mission also provides for NTPC's Vidyut Vyapar Nigam Ltd or NVVN to be the designated Nodal Agency for procuring the solar power by entering into a Power Purchase Agreement or PPA with Solar Power Generation Project Developers who will be setting up Solar Projects during the next three years, i.e., before March 2013 and are connected to the grid at a voltage level of 33 kV and above. For each MW of installed capacity of solar power for which a PPA is signed by NVVN, the Ministry of Power (MoP) shall allocate to NVVN an equivalent amount of MW capacity from the unallocated quota of NTPC coal based stations and NVVN will supply this “bundled” power to the Distribution Utilities. This Scheme is referred to as the 'Bundling Scheme' in these guidelines.

Considering the fact that some of the grid connected solar power projects were already at an advanced stage of development, the guidelines for migration of Projects from their respective existing arrangements to the ones envisaged under JNNSM have already been issued by Ministry of New and Renewable Energy.

#### 1.2 Scope and Objectives of the Guidelines

The scope of these guidelines is to select new projects and provide the necessary policy framework for development of projects under the “bundling scheme” for Phase I of the JNNSM.

The objectives of these guidelines are:

1. To facilitate a quick start up of the JNNSM,
2. To ensure serious participation for projects to be selected under JNNSM,

3. To facilitate speedier implementation of the new projects to be selected to meet the Phase I target of JNNSM;
4. To enhance confidence in the Project Developers and
5. To promote manufacturing in the solar sector, in India.

### 1.3 Total Capacity and Portfolio of Solar PV and Solar Thermal Technology Projects

The total aggregated capacity of the grid connected solar projects to be developed under bundling scheme in Phase-I of JNNSM shall be 1000 MW. This capacity is inclusive of the capacity, which may come up under the Migration Guidelines, which have been already issued. The projects will be selected under this scheme in such a manner so as to provide for deployment of both Solar PV Technology Projects and Solar Thermal Technology projects in a ratio of 50:50, in MW terms. However, within these two broad technology groups, the selection of projects would be technology agnostic. For the purpose of calculation of the ratio as mentioned above, projects migrated from their existing arrangement to JNNSM would also be taken into account. The projects under Migration Guidelines shall be selected before selection of projects under these guidelines is undertaken.

The above provision, with reference to the portfolio of Solar PV and Solar Thermal, will be reviewed after one year from the date of issue of these guidelines and if any modification to this provision is necessary, the same shall be made so as to achieve the objectives of these guidelines.

Any demonstration projects as may be approved by MNRE from time to time shall not be considered for bundling with unallocated quota of NTPC power, under this scheme.

### 1.4 Phasing Allocation of Capacity

In order to prevent bunching of large capacities and the difficulty that may arise in achieving financial closure, it is proposed that selection of PV projects be done in a phased manner. The allocation of capacities would be done in two batches and over two financial years of Phase 1 i.e., 2010-2011 and 2011-2012. The total capacity of Solar PV projects to be selected in first batch i.e., in FY 2010-11 shall be limited to 150 MW. The Projects for remaining capacity for Solar PV Projects (i.e. 500 MW - 150 MW Capacity of Migrated Projects) will be selected in second batch i.e., in FY 2011-12.

However, given the longer gestation period of Solar Thermal Projects, selection of projects for entire capacity of 500 MW, less capacity of migrated projects, shall be done in FY 2010-11.

### 1.5 Definitions

“Affiliate” shall mean a company that, directly or indirectly,

- i) controls, or
- ii) is controlled by, or
- iii) is under common control with, a Company developing a Project or a Member in a Consortium developing the Project and control means ownership by one company of at least 26% (twenty six percent) of the voting rights of the other company.

“CERC Applicable Approved Tariff” shall mean the Tariff as approved by Central Electricity Regulatory Commission for Solar PV Project and Solar Thermal Project, as applicable, based on the year of signing the PPA and the year of commissioning of the Project. In case, the Solar PV Project or Solar Thermal Project seeks to avail accelerated

depreciation, the net applicable tariff as approved by CERC after adjusting accelerated depreciation shall be considered as Applicable Approved Tariff for such Project.

**“Company”** shall mean a body corporate incorporated in India under the Company Act, 1956;

**“Financial Closure or Financial Close”** means the execution of all the Financing Agreements required for the Project and fulfilment of conditions precedents and waiver, if any, of the conditions precedent for the initial draw down of funds for the Project. The same is also applicable for Project being developed based on Balance Sheet financing.

**“Group Company”** of a company means (i) a company which, directly or indirectly, holds 10% (ten percent) or more of the share capital of the company or (ii) a company in which the company, directly or indirectly, holds 10% (ten percent) or more of the share capital of such company or (iii) a company in which the company, directly or indirectly, has the power to direct or cause to be directed the management and policies of such company whether through the ownership of securities or agreement or any other arrangement or otherwise or (iv) a company which, directly or indirectly, has the power to direct or cause to be directed the management and policies of the Company whether through the ownership of securities or agreement or any other arrangement or otherwise or (v) a company which is under common control with the company, and control means ownership by one company of at least 10% (ten percent) of the share capital of the other company or power to direct or cause to be directed the management and policies of such company whether through the ownership of securities or agreement or any other arrangement or otherwise.

Provided that a financial institution, scheduled bank, foreign institutional investor, non banking financial company, and any mutual fund shall not be deemed to be Group Company, and its shareholding and the power to direct or cause to be directed the management and policies of a company shall not be considered for the purposes of this definition unless it is the Project Company or a Member of the Consortium developing the Project.

**“Parent”** shall mean a company, which holds at least 26% equity either directly or indirectly in the Project Company or a Member in a Consortium developing the Project.

**“Solar PV Project”** means the Solar Photo Voltaic power project that uses sunlight for direct conversion into electricity through Photo Voltaic technology.

**‘Solar Thermal Project’** means the Solar Thermal power project that uses sunlight through Concentrated Solar Power technology (based on either line focus or point focus principle) for conversion into heat/steam which can be used for producing electricity.



**“Technology Partner”** shall mean an entity from which the Bidder proposes to take technology support. This entity can be a Member in more than one Bidding Consortium provided that it does not have more than 10% of equity commitment in each Consortium;

**“Ultimate Parent”** shall mean a company, which owns at least twenty six percent (26%) equity either directly or indirectly in the Parent and Affiliates.

**“Project”** is defined by a single point of injection into the grid.

## SECTION 2

### GUIDELINES FOR SELECTION OF SOLAR PV PROJECTS

#### 2.1 Capacity of Each Project

Given the requirement to connect the project to the TRANSCO substations at 33kV and above, the Project capacity shall be 5 MW  $\pm$  5% in case of Solar PV Projects and no further variation in the capacity of the Project shall be permitted.

#### 2.2 Request for Selection for Short-listing of Projects

NVVN shall invite project developers to participate in the Request for Selection ( RfS) for development of Solar Photovoltaic Projects under this scheme. The Project Developer shall submit the RfS within 30 days of the invitation by NVVN.

#### 2.3 Processing Fees

The Project Developer shall submit non-refundable processing fee of Rs. 1 Lakh along with the RfS, for the Project.

#### 2.4 Number of Applications by a Company

In order to have wider participation from Solar Power Developers, only one application per Company including its Parent, Affiliate or Ultimate Parent-or any Group Company shall be permitted for development of one project of 5 MW  $\pm$ 5% size using a Solar PV Project.

#### 2.5 Qualification Criteria for Short-Listing of Solar PV Projects

##### A. Financial Criteria

##### Net Worth

The “Net Worth” of the company should be equal to or greater than the value calculated at the rate of Rs 3 Crore or equivalent US\$ per MW of the project capacity. The computation of Net Worth shall be based on unconsolidated audited annual accounts of the company. For the purpose of the computation of net worth, the best year in the last four years shall be considered. The Company, would thus be required, to submit annual audited accounts for the financial years 2006-7, 2007-08, 2008-09 and 2009-10 (if available), while indicating the year, which should be considered for evaluation, along with a certificate from the Chartered Accountant to demonstrate the fulfilment of the criteria.

For companies which are newly incorporated, the Net Worth criteria should be met seven days prior to the date of submission of RfS by the Project Developer. To demonstrate fulfilment of the criteria, the Project Developer shall submit a certificate from a Chartered Accountant certifying the Net Worth on the date seven days prior to submission of RfS. Further, the Project Developer shall submit the un-audited financial statements of the company for the date on which the Certificate of Chartered Accountant has been obtained.

**{Note:** For the Qualification Requirements, if data is provided by the Project Developer in foreign currency, equivalent rupees of Net Worth will be calculated using bills selling exchange rates (card rate) USD / INR of State Bank of India prevailing on the date of closing of the accounts for the respective financial year as certified by the Project Developer's banker.

*For currency other than USD, Project Developers shall convert such currency into USD as per the exchange rates certified by their banker prevailing on the relevant date and used for such conversion. }*

### Net Worth

=	Paid up share capital
Add:	Reserves
Subtract:	Revaluation Reserves
Subtract:	Intangible Assets
Subtract:	Miscellaneous Expenditures to the extent not written off and carry forward losses

For the purposes of meeting financial requirements only unconsolidated audited annual accounts shall be used. However, audited consolidated annual accounts of the Project Developer may be used for the purpose of financial requirements provided the Project Developer has at least twenty six percent (26%) equity in each company whose accounts are merged in the audited consolidated account and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

If the RfS is submitted by a Consortium the financial requirement to be met by each Member of the Consortium shall be computed in proportion to the equity commitment made by each of them in the Project Company. Any Consortium, if selected, shall, for the purpose of supply of power to NNVN, incorporate a Project Company with equity participation by the Members before signing the PPA with NNVN. The Project Developer may seek qualification on the basis of financial capability of its Parent Company and / or its Affiliate(s) for the purpose of meeting the Qualification Requirements. In case of the Project Developer being a Bidding Consortium, any Member may seek qualification on the basis of financial capability of its Parent Company and/ or its Affiliate(s).

In case, any Company is selected for developing both Solar PV Project as well as Solar Thermal Project, the Company will have to meet the total Net Worth requirement for all the Projects selected and submit the proof for the same within one month from the date of issue of Letter of Intent.

### B. Technical Criteria

Under the Phase I of the JNNSM, it is proposed to promote only commercially established and operational technologies to minimize the technology risk and to achieve the commissioning of the Projects. The detailed technical parameters for Solar PV Projects are at **Annexure 1A**.

### C. Connectivity with the Grid

The plant should be designed for interconnection with the State Transmission Utility (STU) at the voltage level of 33 kV or above. Further, the interconnections should be at the substation (substation should be 33kV/132 kV or higher voltage levels) and not the distribution substation. The project developer should indicate to the TRANSCO the location (Tehsil, Village and District as applicable) of its proposed project. In this regard, the Project Developer shall submit a letter from the State Transmission Utility (STU) , along with the RfS, confirming technical feasibility of the connectivity of the plant to the grid substation. The Solar Power developer would have responsibility for approaching STU and entering into transmission evacuation agreement .The responsibility of constructing the transmission line from power plant upto 132/33 kv substation would be of STU.

**D. Domestic Content**

One of the important objectives of the National Solar Mission is to promote domestic manufacturing. In view of this, the developers are expected to procure their project components from domestic manufacturers, as far as possible. However, in the case of Solar PV Projects to be selected in first batch during FY 2010-11, it will be mandatory for Projects based on crystalline silicon technology to use the modules manufactured in India. For Solar PV Projects to be selected in second batch during FY 2011-12, it will be mandatory for all the Projects to use cells and modules manufactured in India.

**2.6 Short-listing of Projects**

NVVN shall evaluate only those applications, which are received by the appointed date and time at the head office of NVVN. NVVN will evaluate the Projects based on the qualification criteria specified at Sr. No. 2.5 of these Guidelines and all the projects meeting the criteria shall be short-listed by NVVN. In the event, the total aggregate capacity of the Solar PV Projects short-listed is upto 150 MW, all the short-listed Projects in the first batch i.e., in FY 2010-11 would be selected and Letter of Intent (LoI) will be issued to all the short-listed Projects.

In the event, the total aggregate capacity of the Solar PV Projects short-listed by NVVN is higher than 150 MW, the final selection of the Projects from the list of short-listed projects shall be done on the basis of discount to be offered by Project Developers on CERC Approved Applicable Tariff as detailed in the next sub-section.

**2.7 Selection of Projects in First batch based on Discount in Tariff**

- a) The Short-listed Projects would be asked by NVVN to submit Request for Proposal (RfP) bid indicating the discount in Rs/kWh on CERC Approved Applicable Tariff .
- b) The RfP containing format and detailed mechanism for Discount in Tariff will be issued by NVVN after short-listing of the Projects.
- c) The Projects offering the maximum discount in Rs/kWh on the CERC Approved Applicable Tariff would be selected first and so on.
- d) In order to discourage adventurous bids, Bid Bond on graded scale would need to be furnished along with the RfP bid in the manner detailed hereunder:.

<b>Sl. No.</b>	<b>Discount offered on CERC Approved Tariff</b>	<b>Amount of Bid Bond applicable for every paise of discount on CERC Approved Tariff (per MW)</b>
1.	Upto 10% or 10%	Rs. 10,000/=
2.	More than 10% & Upto 15%	Rs. 20,000/=
3.	More than 15% & Upto 20%	Rs. 30,000/=
4.	More than 20% & Upto 25%	Rs. 40,000/=
5.	More than 25%	Rs. 50,000/=

- e) In the eventuality of a tie in the bidding process, the applicant would be selected by draw of lots.

At the end of the selection process, a letter of intent will be issued by NRVN to the selected Solar Projects.

## 2.8 Selection of Projects in Second batch

RfS for the Solar PV Projects in second batch will be invited during FY 2011-12. The same process of inviting RfS and Selection of Projects as detailed out in Sections 2.1 to 2.7 will be applicable for selection of Solar PV Projects in second batch.

## 2.9 Power Purchase Agreement

A copy of Draft Power Purchase Agreement to be executed between NRVN and the Project Developer shall be provided by NRVN along with invitation for submission of RfS. Within one month of the date of issue of Letter of Intent (LoI), the Power Purchase Agreement between NRVN and the Project Developer for purchase of power from the project will be executed.

## 2.10 Bank Guarantees

The Project Developer shall provide the following Bank Guarantees to NRVN in a phased manner as follows:

- Earnest Money Deposit (EMD) of Rs. 20 Lakh/MW in the form of Bank Guarantee along with RfS.
- Bid Bond as per Clause 2.7 (d) in the form of Bank Guarantee along with RfP bid (if applicable)
- Performance Bank Guarantee of Rs. 30 Lakh/MW at the time of signing of PPA.

In addition to the Performance Bank Guarantee of Rs. 30 Lakh/MW to be provided at the time of signing of PPA, the Bank Guarantees towards EMD and Bid Bond (if applicable) will also be converted into Performance Bank Guarantee.

In case, NRVN offers to execute the PPA with the Project Developer and if the Project Developer refuses to execute the PPA within the stipulated time period, the Bank Guarantees towards EMD and Bid Bond shall be encashed by NRVN. In case the Project is not selected, NRVN shall release the Bank Guarantees within fifteen days of the issue of LoI to selected Projects. All the Bank Guarantees shall be valid for a period of 15 months from the date of signing of PPA for PV Projects.

## 2.11 Minimum Equity to be held by the Promoter

The Company developing the project shall provide the information about the Promoters and their shareholding in the company to NRVN indicating the controlling shareholding before signing of the PPA with NRVN.

No change in the shareholding in the Company developing the Project shall be permitted from the date of submitting an RfS till the execution of the PPA. However, this condition will not be applicable if a listed company is developing the Project.

After execution of PPA, the controlling shareholding (controlling shareholding shall mean at least 26% of the voting rights) in the Company developing the project shall be maintained for a period of (1) one year after commencement of supply of power. Thereafter, any change can be undertaken under intimation to NRVN.

### **2.12 Financial Closure**

The Project shall achieve Financial Closure within 180 days from the date of signing Power Purchase Agreement. No extension shall be granted for achieving this milestone. At this stage, the Project developer would also provide evidence that the required land for project development is in clear possession of the Project developer and the requisite technical criterion have been fulfilled. The Project developer would also need to specify their plan for meeting the requirement for domestic content. The requirement for land, as specified in the Migration guidelines, would remain unchanged.

In case of delay in achieving above condition as may be applicable, NVVN shall encash Performance Bank Guarantee and shall remove the project from list of the selected projects.

### **2.13 Commissioning**

In case of Solar PV, the Project shall be commissioned within 12 months of the date of signing of PPA. In case of failure to achieve this milestone, NVVN shall encash the Performance Guarantee in the following manner:

- a. Delay upto one month - NVVN will encash 20% of the total Performance Bank Guarantee .
- b. Delay of more than one month and upto two months - NVVN will encash 40% of the total Performance Bank Guarantee .
- c. Delay of more than two month and upto three months - NVVN will encash the remaining Performance Bank Guarantee .

In case the commissioning of project is delayed beyond 3 months, the Project Developer shall pay to NVVN the Liquidated Damages at rate of Rs 1,00,000/MW per day of delay for the delay in such Commissioning. The maximum time period allowed for commissioning of the Project with encashment of Performance Bank Guarantee and payment of Liquidated Damages shall be limited to 18 months from the date of signing of PPA. In case, the Commissioning of the Project is delayed beyond 18 months from the date of signing of PPA, the PPA will be terminated and the Project shall be removed from the list of selected Projects.

However, if as a consequence of delay in commissioning, the applicable tariff changes for the project, the project shall be paid the changed applicable tariff, incorporating the tariff discount, if any.

**2.14 Time Schedule for Solar PV Projects**

Selection of Solar PV Projects shall be carried out according to the timeline given below:

<b>Sl.</b>	<b>Event</b>	<b>Date</b>
01	Notice for Request for Selection	Zero date
02	Submission of Applications with documents for Registration	Zero date+30 days
03	Short-listing of Projects based on RfS received and decision on tariff discounting	Zero date+75 days
04	Tariff discounting process and submission of proposals by short-listed developers	Zero date+90 days
05	Evaluation of Tariff discounting proposals	Within 30 days from submission of tariff discounting proposals (zero date+120 days)
06	Issue of letter of intent	Within 15 days from evaluation of tariff discounting proposals (zero date +135 days)
07	PPA Signing	Within 30 days from the date of issue of letter of intent (LOI date +30 days)
08	Financial Closure of the project	180 days from the date of signing of PPA
09	Commissioning of the Project	12 months from the date of signing of PPA

**SECTION 3****GUIDELINES FOR SELECTION OF SOLAR THERMAL PROJECTS****3.1 Minimum and Maximum Capacity of Each Project**

Given the requirement to connect the project to the TRANSCO at 33kV and above, the minimum capacity of the Solar Thermal Project shall be 5 MW and the maximum capacity of the Project shall be 100 MW.

**3.2 Expression of Interest for Short-listing of Projects**

NVVN shall invite project developers to participate in the Request for Selection (RfS) for development of solar thermal projects under this scheme. NVVN would provide a format for submitting the application. The Project Developer shall submit the RfS within 30 days of the issue of invitation by NVVN.

**3.3 Processing Fees**

The project developer shall submit non refundable processing fees of Rs. 1 Lakh along with Expression of Interest for each Project.

**3.4 Number of Applications by a Company**

The total capacity of Solar Thermal Projects to be allocated to a Company including its Parent, Affiliate or Ultimate Parent-or any Group Company shall be limited to 100 MW. The Company, including its Parent, Affiliate or Ultimate Parent-or any Group Company may submit application for multiple projects at different locations subject to total maximum of 100 MW. The Company shall submit one single application in the prescribed format detailing all projects at multiple locations for which the developer is submitting the application.

**3.5 Qualification Criteria for Short-Listing of Solar Thermal Projects****A. Financial Criteria****Net Worth**

The "Net Worth" of the company should be equal to or greater than the value calculated at the rate of Rs 3 Crore or equivalent US\$ per MW of the project capacity upto 20 MW. For every MW additional capacity, beyond 20 MW, additional net worth of Rs 2 crore would need to be demonstrated. The computation of Net Worth shall be based on unconsolidated audited annual accounts of the company. For the purpose of the computation of net worth, the best year in the last four years shall be considered. The Company, would thus be required, to submit annual audited accounts for the financial years 2006-7, 2007-08, 2008-09 and 2009-10 (if available), while indicating the year, which should be considered for evaluation, along with a certificate from the Chartered Accountant to demonstrate the fulfilment of the criteria.



For companies which are newly incorporated, the Net Worth criteria should be met seven days prior to the date of submission of RfS by the Project Developer. To demonstrate fulfilment of the criteria, the Project Developer shall submit a certificate from a Chartered Accountant certifying the Net Worth on the date seven days prior to submission of RfS. Further, the Project Developer shall submit the un-audited financial statements of the company for the date on which the Certificate of Chartered Accountant has been obtained.

*{Note: For the Qualification Requirements, if data is provided by the Project Developer in foreign currency, equivalent rupees of Net Worth will be calculated using bills selling exchange rates (card rate) USD / INR of State Bank of India prevailing on the date of closing of the accounts for the respective financial year as certified by the Project Developer's banker.*

*For currency other than USD, Project Developers shall convert such currency into USD as per the exchange rates certified by their banker prevailing on the relevant date and used for such conversion. }*

**Net Worth**

=	Paid up share capital
Add:	Reserves
Subtract:	Revaluation Reserves
Subtract:	Intangible Assets
Subtract:	Miscellaneous Expenditures to the extent not written off and carry forward losses

For the purposes of meeting financial requirements, only unconsolidated audited annual accounts shall be used. However, audited consolidated annual accounts of the Project Developer may be used for the purpose of financial requirements provided the Project Developer has at least twenty six percent (26%) equity in each company whose accounts are merged in the audited consolidated account and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

The financial requirement to be met by each Member of the Consortium shall be computed in proportion to the equity commitment made by each of them in the Project Company. Any Consortium, if selected, shall, for the purpose of supply of power to NNVN, incorporate a Project Company with equity participation by the Members before signing the PPA with NNVN.

The Project Developer may seek qualification on the basis of financial capability of its Parent Company and / or its Affiliate(s) for the purpose of meeting the Qualification Requirements. In case of the Project Developer being a Bidding Consortium, any Member may seek qualification on the basis of financial capability of its Parent Company and / or its Affiliate(s).

In case any Company is selected for developing both Solar PV Project as well as Solar Thermal Project, the Company will have to meet the total Net Worth requirement for all the Projects selected and submit the proof for the same within one month from the date of issue of Letter of Intent.

## B. Technical Criteria

Under the Phase I of the JNNSM, it is proposed to promote technologies, that have plants, which have been in operation for a period of one year or a technology for which financial closure of a commercial plant has already been obtained. Detailed technical parameters for Solar Thermal Projects are at **Annexure 1B**.

## C. Connectivity with the Grid

The plant should be designed for interconnection with the State Transmission Utility (STU) at the voltage level of 33 kV or above. Further, the interconnections should be at the substation (substation should be 33kV/132 kV or higher voltage levels) and not the distribution substation. The project developer should indicate to the TRANSCO the location (Tehsil, Village and District as applicable) of its proposed project. In this regard, the Project Developer shall submit a letter from the State Transmission Utility (STU), along with the RfS, confirming technical feasibility of the connectivity of the plant to the grid substation. The Solar Power developer would have responsibility for approaching STU and entering into transmission evacuation agreement. The responsibility of constructing the transmission line from power plant upto 132/33 kV substation would be of STU.

## D. Water availability

The Project developer should have made arrangements for water required for the project. The Project developer shall submit the documentary evidence in the form of approval from the State/local authority for the quantity of water required for the plant, along with the application in response to the RfS.

## E. Domestic Content

It would be mandatory for Project developers to ensure 30% of local content in all plants/installations under Solar thermal technology. Land is excluded.

## 3.6 Short-listing of Projects

NVVN shall evaluate only those RfS, which are received by the appointed date and time at the head office of NVVN. NVVN will evaluate the Projects based on the qualification criteria specified at Sr. No. 3.5 of these Guidelines and announce the list of the projects meeting the qualification criteria. If the total aggregate capacity of the Solar Thermal Projects short listed by NVVN is lower than the capacity to be selected, all the short-listed Projects would be selected and Letter of Intent (LoI) will be issued to all short-listed Projects.

In the eventuality, the total aggregate capacity of the Solar Thermal Projects short listed by NVVN is higher than the capacity to be selected, the final selection of the Projects from the list of short-listed projects shall be done based on discount offered by Developers on CERC Approved Applicable Tariff as detailed in next sub-section.

**3.7 Selection of Projects based on Discount in Tariff**

- a) The Short-listed Projects would be asked by NVVN to submit RfP bid indicating the discount in Rs/kWh on CERC Approved Applicable Tariff.
- b) The RfP containing format and detailed mechanism for Discount in Tariff will be issued by NVVN, if required after short-listing of Solar Thermal Projects.
- c) The Projects offering the maximum discount in Rs/kWh on the CERC Approved Applicable Tariff would be selected first and so on.
- d) In order to discourage adventurous bids, Bid Bond on graded scale would need to be furnished along with the RfP bid in the manner detailed hereunder:.

<b>Sl. No.</b>	<b>Discount offered on CERC Approved Tariff</b>	<b>Amount of Bid Bond applicable for every paise of discount on CERC Approved Tariff (per MW)</b>
1.	Upto 10% and 10%	Rs. 10,000/=
2.	More than 10% & Upto 15%	Rs. 20,000/=
3.	More than 15% & Upto 20%	Rs. 30,000/=
4.	More than 20% & Upto 25%	Rs. 40,000/=
5.	More than 25%	Rs. 50,000/=

- e) In the eventuality of a tie in the bidding process, the applicant would be selected by draw of lots

In case project developer submits application for multiple projects and such projects are shortlisted, then the developer has to offer discount separately on each such shortlisted project. At the end of selection process, a Letter of Intent (LoI) will be issued by NVVN to the selected Solar Projects.

In case the Capacity of last Project selected is higher than the capacity to be selected for meeting the cumulative capacity of all the Projects to be selected under these Guidelines, the Capacity of last Project selected shall be limited so as to meet the cumulative capacity of all the Projects to be selected under these Guidelines.

**3.8 Power Purchase Agreement**

A copy of Draft Power Purchase Agreement to be executed between NVVN and the Project Developer shall be provided along with LoI. Within one month of the date of issue of Letter of Intent, the Power Purchase Agreement between NVVN and the Project Developer for purchase of power from the project will be executed.

### **3.9 Bank Guarantees**

The Project Developer shall provide the following Bank Guarantees to NNVN in a phased manner as follows:

- Earnest Money Deposit (EMD) of Rs. 20 Lakh/MW in the form of Bank Guarantee along with RfS.
- Bid Bond as per Clause 3.7 (d) in the form of Bank Guarantee along with RfP bid (if applicable)
- Performance Bank Guarantee of Rs. 30 Lakh/MW at the time of signing of PPA.
- In addition to the Performance Bank Guarantee of Rs. 30 Lakh/MW to be provided at the time of signing of PPA, the Bank Guarantees towards EMD and Bid Bond (if applicable) will also be converted into Performance Bank Guarantee.

In case, NNVN offers to execute the PPA with the Project Developer and if the Project Developer refuses to execute the PPA within the stipulated time period, the Bank Guarantees towards EMD and Bid Bond shall be encashed by NNVN. In case the Project is not selected, NNVN shall release the Bank Guarantee within fifteen days issue of Lol to selected Projects. All the Bank Guarantees shall be valid for a period of 34 months from the date of signing of PPA for solar Thermal Projects.

### **3.10 Minimum Equity to be held by the Promoter**

The Company developing the project shall provide the information about the Promoters and their shareholding in the company to NNVN indicating the controlling shareholding before signing of the MOU with NNVN.

No change in the shareholding in the Company developing the Project shall be permitted from the date of submitting an RfS till the execution of the PPA. However, in case the Project is being developed by a listed company, this condition will not be applicable.

After execution of PPA, the controlling shareholding (controlling shareholding shall mean at least 26% of the voting rights) in the Company developing the project shall be maintained up to a period of (1) one year after commencement of supply of power. Thereafter, any change can be undertaken under intimation to NNVN.

### **3.11 Financial Closure**

The Project shall achieve Financial Closure within 180 days from the date of signing Power Purchase Agreement . No extension shall be granted for achieving this milestone. At this stage, the Project developer would also provide evidence that the required land for project development is under clear possession of the Project developer and the requisite technical criteria have been fulfilled. The Project developer would also need to specify their plan for meeting the requirement for domestic content. The requirement for land, as specified in the Migration guidelines, would remain unchanged.

In case of delay in achieving above condition as may be applicable, NNVN shall encash Performance Bank Guarantee and shall remove the project from list of the selected projects.

**3.12 Commissioning**

In case of Solar Thermal Projects, the Project shall be commissioned within 28 months of the date of signing of PPA. In case of failure to achieve this milestone, NVVN shall encash the Performance Bank Guarantee in the following manner:

- a. Delay upto one month NVVN will encash 20% of the total Performance Bank Guarantee .
- b. Delay of more than one month and upto two months NVVN will encash 40% of the total Performance Bank Guarantee .
- c. Delay of more than two month and upto three months NVVN will encash the remaining Performance Bank Guarantee .

In case the commissioning of project is delayed beyond five months, the Project Developer shall pay to NVVN the Liquidated Damages at rate of Rs 1,00,000/MW per day of delay for the delay in such Commissioning. The maximum time period allowed for commissioning of the Project with encashment of Performance Bank Guarantee and payment of Liquidated Damages shall be limited to 36 months from the date of signing of PPA. In case, the Commissioning of the Project is delayed beyond 36 months from the date of signing of PPA, the PPA will be terminated and the Project shall be removed from the list of selected Projects.

However, if as a consequence of delay in commissioning, the applicable tariff changes for the project, the project shall be paid the changed applicable tariff, incorporating the tariff discount, if any.

**3.13 Time Schedule for Solar Thermal Projects**

The time schedule for Solar Thermal Projects under JNNSM shall be as follows:

<b>Sl.</b>	<b>Event</b>	<b>Date</b>
01	Notice for Invitation of Request for Selection	Zero date
02	Submission of Applications with documents for Registration	Zero date +30 days
03	Selection of Projects based on RfS received and decision on tariff discounting	Zero date +75days
04	Tariff discounting process and submission of proposals by short-listing developers	Zero date +90days
05	Evaluation of Tariff discounting proposals	Within 30 days from submission of tariff discounting proposal
06	Issue of letter of intent	Within 15 days from evaluation of tariff discounting proposals
07	PPA Signing	Within 30 days from the date of issue of letter of intent
08	Financial Closure of the project	180 days from the date of signing of PPA
09	Commissioning of the Project	28 months from the date of signing of PPA

## SECTION 4

### OTHER PROVISIONS

#### 4.1 Role of State Level Agencies

It is envisaged that the State Government shall appoint any Agency as a State Level Agency, which will provide necessary support to facilitate the development of the Projects. This may include facilitation in the following areas:

- Access to Sites
- Water Allocation for Solar Thermal Projects
- Land acquisition for the project
- Connectivity to the Transmission substation .

#### 4.2 Role of Carbon Financing

Project developers are encouraged to identify the potential role of carbon finance in their investment analysis including:

- (i) The expected revenues from emission reductions; and
- (ii) The cost of power with and without carbon revenues.

A Nodal Agency will be designated as the program coordinating entity for the purposes of facilitating the emission reductions benefits using the programmatic approach. It will perform this function in cooperation with project developers and other parties and in line with the tariff regulations laid down by CERC.

#### 4.3 Amendment to the Guidelines

These guidelines will be reviewed after one year from the date of issue of these guidelines and any modification to these guidelines, if necessary, shall be carried out so as to achieve the objectives of the National Solar Mission.

#### 4.4 Power to Remove Difficulties

If any difficulty arises in giving effect to any provision of these guidelines or interpretation of the guidelines or modification to the guidelines, the Secretaries of the Ministry of Power and the Ministry of New and Renewable Energy shall jointly meet and decide the matter, which will be binding on all parties concerned.

Any inconsistencies, due to oversight, may be rectified, after obtaining the approval from the Secretaries of the Ministry of Power and the Ministry of New and Renewable Energy.

## Annexure 1A

### Technical Requirements of PV Module for use in Grid Solar Power Plants

The following are some of the technical measures required to ensure quality of the PV modules used in grid solar power projects.

#### (a) PV Module Qualification

1.1 The PV modules used in the grid solar power projects must qualify to the latest edition of any of the following IEC PV module qualification test or equivalent BIS standards.

Crystalline Silicon Solar Cell Modules	IEC 61215
Thin Film Modules	IEC 61646
Concentrator PV modules	IEC 62108

1.2 In addition, PV modules must qualify to IEC 61730 for safety qualification testing. For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701.

#### (b) Authorized Test Centers

The PV modules must be tested and approved by one of the IEC authorized test centers. In addition a PV module qualification test certificate as per IEC standard, issued by ETDC, Bangalore or Solar Energy Centre will also be valid. Ministry will review the list of authorized testing laboratories/centers from time to time.

#### (c) Warranty

- The mechanical structures, electrical works and overall workmanship of the grid solar power plants must be warranted for a minimum of 5 years.
- PV modules used in grid solar power plants must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.

#### (d) Identification and Traceability

Each PV module used in any solar power project must use a RF identification tag. The following information must be mentioned in the RFID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions.)

- (i) Name of the manufacturer of PV Module
- (ii) Name of the Manufacturer of Solar cells
- (iii) Month and year of the manufacture (separately for solar cells and module)

- (iv) Country of origin (separately for solar cells and module)
- (v) I-V curve for the module
- (vi) Wattage,  $I_m$ ,  $V_m$  and FF for the module
- (vii) Unique Serial No and Model No of the module
- (viii) Date and year of obtaining IEC PV module qualification certificate
- (ix) Name of the test lab issuing IEC certificate
- (x) Other relevant information on traceability of solar cells and module as per ISO 9000

All grid solar PV power plants must install necessary equipment to continuously measure solar radiation, ambient temperature, wind speed and other weather parameters and simultaneously measure the generation of DC power as well as AC power generated from the plant. They will be required to submit this data to the Ministry on line and/or through a report on regular basis for the entire duration of PPA.



## Annexure 1B

### Technical Qualification Requirements for Eligibility of a Solar Thermal Power Developer to Establish Solar Power Plant under JNNSM

- a) Only new plant & machinery to be used.
- b) Any of the Concentrated Solar Power (CSP) technology, such as, Parabolic Trough Collectors, Solar Dish Stirling (or any other prime mover), Linear Fresnel Reflector, Central Tower with heliostats, or their any other combination could be used.
- c) Solar Power Developer must fulfil either of following requirements:
  - (i) Solar Power Developer is himself a technology provider who has either experience in design and engineering of at least 1 (one) MW capacity solar thermal power plant having been in operation for a period of at least one year on the specified cut off date, or obtained at least one financial closure of a solar thermal power plant of at least 50% of the proposed capacity based on the proposed technology.
  - (ii) Solar power Developer has a tie-up with a technology provider fulfilling technology requirements at S. No. (1) above.
  - (iii) Solar Power Developer is an EPC contractor/power generating company having experience in engineering, erection and commissioning of at least 100 MW capacity conventional thermal power plant and a tie-up with a technology provider fulfilling technology requirements at S. No. (1) above.
  - (iv) Solar power Developer has a tie-up with an EPC contractor having experience in engineering, erection and commissioning of at least 100 MW capacity conventional thermal power plant and a tie-up with a technology provider fulfilling technology requirements at S. No. (1) above.
  - (v) Solar Power Developer is an EPC contractor having experience in engineering, erection and commissioning of at least 1 (one) MW capacity solar thermal power plant and a tie-up with a technology provider fulfilling technology requirements at S. No. (1) above.
  - (vi) Solar Power Developer has a tie up with an EPC contractor having experience in engineering, erection and commissioning of at least 1 (one) MW capacity solar thermal power plant and a tie-up with a technology provider fulfilling technology requirements at S. No. (1) above.
- d) All grid connected solar thermal power plants will install equipment for regular monitoring of solar irradiance (including DNI), ambient air temperature, wind speed and other weather parameters and simultaneously for monitoring of the amount of electric power generated from the plant. They will submit this data to the Ministry on line and/or through a report on regular basis for the entire duration of PPA.

**Notes:** Tie up would mean any of (i) MOU for Technology Transfer, (ii) Technology or document sale agreement, (iii) EPC Contract, (iv) project specific assurance to support with design and construction of the plant



# ABOUT MNRE

Ministry of New and Renewable Energy (MNRE) is the nodal Ministry of the Government of India at the National level for all matters relating to new and renewable energy such as solar, wind, biomass, small hydro, hydrogen, geothermal, etc. The endeavor of the Ministry is to promote renewable energy technologies and increase the contribution of renewable energy in the total mix in the years to come. The Ministry has created testing centers to ensure quality and standard products in the market. Besides, MNRE has created Center for Wind Energy technology (C-WET), Solar Energy Center (SEC) and national Institute of Renewable Energy (NIRE). In addition, the Ministry is supporting some Center of Excellence in Renewable Energy.

The Ministry has a wide range of programmes on research and development, demonstration, and promotion of renewable energy for rural, urban, commercial and industrial applications as well as for grid-interactive power generation. A three-fold strategy is being followed:

- a) Providing support for research, development and demonstration of technologies;
- b) Facilitating institutional finance through various financial institutions;
- c) Promoting private investment through fiscal incentives, tax holidays, depreciation allowance and remunerative returns for power fed into the grid.

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