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भारत सरकार/ Government of India

नवीन और नवीकरणीय ऊर्जा मंत्रालय/Ministry of New & Renewable Energy

Block no. 14, CGO Complex,
New Delhi-110 001

Dated: 25th October, 2013

To:

1. Managing Director, Solar Energy Corporation of India, NBCC Plaza, Saket, New Delhi
2. Chief Executive Officer, NTPC Vidyut Vyapar Nigam Limited, Scope Complex, New Delhi

Sub: **Final Guidelines for Implementation of Scheme for Setting up of 750 MW of Grid-connected Solar PV Power projects under Batch-I of Phase-II of JNNSM with Viability Gap Funding support from NCEF.**

Sir,

In continuation to this Ministry's circular of even number dated 15th October, 2013 conveying the approval of the Government of India for Implementation of 'Scheme for Setting up of 750 MW of Grid-connected Solar PV Power projects under Batch-I of Phase-II of Jawaharlal Nehru National Solar Mission with Viability Gap Funding support from National Clean Energy Fund' through the Solar Energy Corporation of India (SECI) in close association with the NTPC Vidyut Vyapar Nigam Limited (NVTN)", the final Guidelines for Implementation of the Scheme approved by Competent Authority are forwarded herewith for further necessary action.



(A.K. Varshney)

Director (Grid Solar Power)
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Encl.: 1, as above

Copy to:

1. PS to Hon'ble Minister, NRE
2. PSO to Secretary, MNRE
3. PS to JS(TK)
4. ✓ Director (NIC) - for uploading the Guidelines on MNRE website

JAWAHARLAL NEHRU NATIONAL
SOLAR MISSION
Phase-II

***Guidelines for Implementation of Scheme for
Setting up of 750 MW Grid-connected Solar PV
Power Projects under Batch-1***

Government of India
Ministry of New and Renewable Energy
October 2013

"Sustainable development also mandates the efficient use of available natural resources. We have to be much more frugal in the way we use natural resources. A key area of focus is energy. We have to promote, universal access to energy, while, at the same time, promoting energy efficiency and a shift to cleaner energy sources by addressing various technological, financial and institutional constraints."

Dr. Manmohan Singh, Prime Minister of India

During the Rio+20 Summit in Brazil (20-22 June, 2012)

**Guidelines for
Implementation of Scheme for Setting up of
750 MW Grid-connected Solar PV Power Projects**

JNNSM Phase-II Batch-I

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SECTION-I BACKGROUND AND INTRODUCTION

1.1 Preamble

1.1.1 The Jawaharlal Nehru National Solar Mission is a major initiative of the Government of India with active participation from States to promote ecologically sustainable growth while addressing India's energy security challenge. It will also constitute a major contribution by India to the global effort to meet the challenges of climate change. The objective of the Mission is to establish India as a global leader in solar energy, by creating the policy conditions for its large scale diffusion across the country as quickly as possible. The Mission has set a target, amongst others, for deployment of grid connected solar power capacity of 20,000 MW by 2022 to be achieved in 3 phases (first phase upto 2012-13, second phase from 2013 to 2017 and the third phase from 2017 to 2022). The first phase (up to 2013) focused on promoting scale-up in grid-connected solar power capacity addition of 1000 MW through scheme of bundling with thermal power implemented through the NTPC Vidyut Vyapar Nigam Limited (NVVN) for minimizing the financial burden on Government, and a small component of 100MW with GBI support through IREDA. In the second phase, further capacity addition of 3000 MW under Central Scheme is envisaged through various schemes.

1.1.2. Status and achievement against 1000 MW Capacity Grid-Connected Solar Power Projects under Phase-I implemented through NVVN:

In the Phase 1 of the Mission, 950 MW solar power projects (excluding 84 MW selected under migration scheme) were selected in two batches (batch-I during 2010-11 and batch-II during 2011-12) through a process of reverse bidding. The resulting tariffs in Batch-I for SPV projects ranged between Rs.10.95 and Rs.12.76 per unit, with average of Rs.12.12 per unit and for solar thermal projects the tariff ranged between Rs.10.49 and Rs.12.24 per unit, with average tariff being Rs.11.48 per unit. In Batch-II, for solar PV projects, the tariff ranged between Rs.7.49 and Rs.9.44 per unit, with average tariff being Rs.8.77 per unit. The power from the plants is being purchased by the NVVN and being sold to distribution utilities/ Discoms after bundling with power from the unallocated quota of power from coal based stations of NTPC on equal capacity basis, thus effectively reducing the average per unit cost of solar power. A total capacity of 420 MW has been commissioned under these Batches by the end of Phase-1 (31.3.2013). In addition, a capacity of 50.5MW under migration scheme, 88.8 MW under IREDA-GBI scheme and 21.5 MW under old Demonstration scheme has been commissioned, taking the total capacity commissioned during Phase-I to 580.8 MW.

1.1.3. Approach of Viability Gap Funding in Phase-II Batch-I of JNNSM

To incentivize setting up of a large number of Solar Power Projects and minimizing the impact of tariff on the distribution companies, various alternatives have been considered viz. (i) Bundling Scheme (ii) Viability Gap Funding (VGF) Scheme and (iii) Generation

Based Incentive (GBI) Scheme. Phase-I was largely based on the option of Bundling Scheme and on GBI option to some extent. In Phase-II Batch-I of JNNSM, the option of “Viability Gap Funding” Scheme has been selected. The same will be implemented by the Solar Energy Corporation of India (SECI) in close association with the NVVN.

1.2 Scope and Objectives

1.2.1 The Scope of these Guidelines is to provide the necessary policy framework and mechanism for selection and implementation of *750 MW Grid-connected solar PV power projects with Viability Gap Funding under Batch-1 Phase-II of JNNSM*.

1.2.2 The main objectives of the VGF Scheme and these Guidelines are:

- i) To enable scaling up of size of projects thereby leading to economies of scale of projects under JNNSM;
- ii) To facilitate speedier implementation of the solar power projects to be selected to meet the *Phase-II* target of JNNSM;
- iii) To enhance confidence in the Project Developers;
- iv) To promote manufacturing in the Solar PV sector in India;
- v) To create good business model and systems for various State Governments and DISCOMs to take forward; and
- vi) To facilitate fulfilment of RPO requirement of the obligated entities.

1.3. Mechanism of Viability Gap Funding

The mechanism of operation of Viability Gap Funding is enumerated below:

- 1) The tariff to be paid to the developer is fixed at Rs.5.45 per kWh. This tariff will remain firm for 25 years project period. In case benefit of accelerated depreciation is availed for a project, the tariff will get reduced to Rs.4.75 per kWh.
- 2) The developer will be provided a viability gap fund based on his bid. The upper limit for VGF is 30% of the project cost or Rs.2.5 Cr./MW, whichever is lower. The developer will be required to indicate his preliminary estimate of project cost as per format in Annexure-A. The project cost will be as per developer’s own estimation & declaration at the time of bidding, which will be finally confirmed by his own declaration at the time of financial closure and will be considered for provision of VGF as per the above specified upper limit.
- 3) The developer has to put his own equity of at least Rs.1.5 Cr./MW.
- 4) The remaining amount can be raised as loan from any source by the developer.
- 5) The VGF when paid by the SECI may be used to return part of the loan or developer contribution (in excess of Rs.1.5 Cr./MW) or a combination thereof as the case may be, in case investments have already been made. SECI will issue a letter confirming sanction/ grant of VGF so that bidder is able to achieve financial closure for full amount if required at the time of signing of Power Purchase Agreement (PPA).
- 6) The VGF will be released in six tranches as follows:

- 50% on successful commissioning of the full capacity of the project (COD);
- Balance 50% progressively over next 5 years subject to the project meeting generation requirements (CUF within specified range as per Clause 2.13.1) as under:
 - End of 1st Year from COD – 10%
 - End of 2nd Year from COD – 10%
 - End of 3rd Year from COD – 10%
 - End of 4th Year from COD – 10%
 - End of 5th Year from COD – 10%

7) If the project fails to generate any power continuously for any 1 year within 25 years or its major assets (components) are sold or the project is dismantled during this tenure, SECI will have a right to refund of VGF on *pro-rata* basis and if not paid by the developer then a claim on assets equal to the value of VGF released, on *pro-rata* basis as specified hereunder:

<u>Year of default</u> <u>(From COD)</u>	<u>SECI's right to refund of VGF/ claim on assets</u> <u>(% of VGF paid)</u>
Up to 5 years	: 100%
5-6 year	: 90%
6-7 year	: 80%
7-8 year	: 70%
8-9 year	: 60%
9-10 year	: 50%
10-11 year	: 40%
11-12 year	: 30%
12-13 year	: 25%
13-14 year	: 23%
14-15 year	: 21%
15-16 year	: 19%
16-17 year	: 17%
17-18 year	: 15%
18-19 year	: 13%
19-20 year	: 11%
20-21 year	: 9%
21-22 year	: 7%
22-23 year	: 5%
23-24 year	: 3%
24-25 year	: 1%

8) If the project is transferred or sold to a third party during its tenure (after initial lock-in period of 1 year as per provision under Clause 2.10, SECI will retain full

rights to operationalize the PPA with the third party, which will be under full obligation to honour all the obligations and terms & conditions of the PPA.

- 9) Solar Power Developers (SPDs) and SECI shall enter into suitable VGF Securitization Agreement creating a charge over the Project assets in favour of SECI as specified under sub-clause (7) above along with signing of PPA.
- 10) In case of projects financed through loan, the charge created on the project assets shall be shared with the Lending Institutions.
- 11) In case the lending institution exercises its right to step in or take over the project, SECI will also have right to step in along with the lending institution to reclaim VGF in accordance with sub-clause (7) above or handover the project to another party for operation.

1.4 Total Capacity and Portfolio of Solar PV Technology Projects

1.4.1 The total aggregated capacity of the grid connected solar power projects to be set up by Solar Power Developers on Build-Own-Operate (BOO) basis under Viability Gap Funding scheme in Phase-II Batch-I of JNNSM shall be 750 MW. The projects to be selected under this scheme provide for deployment of Solar PV Technology. However, the selection of projects would be technology agnostic and crystalline silicon or thin film or CPV, with or without trackers can be installed.

1.4.2 Already commissioned projects cannot be considered under this scheme. Projects under construction or projects which are not yet commissioned will, however, be considered, in case these projects are not already accepted under any other Central or State Schemes.

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.

“Company” shall mean a body corporate incorporated in India under the Companies Act, 1956 or the Companies Act, 2013 as applicable.

“Financial Closure or Project Financing Arrangements” means arrangement of necessary funds by the Project Developer either by way of commitment of funds by the company from its internal resources and/or tie up of funds through a bank / financial institution by way of sanction of a loan.

“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.

“Inter-connection/Delivery/Metering point” shall mean the point at 33kV or above where the power from the solar power project is injected into the CTU/STU transmission system (including the dedicated transmission line connecting the power project with the CTU/STU system). Metering shall be done at this interconnection point where the power is injected into the CTU/ STU system i.e. the Delivery point. For interconnection with grid and metering, the developers shall abide by the relevant CERC Regulations, Grid Code, and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended and revised from time to time.

“Parent” shall mean a company, which holds at least more than 50% equity either directly or indirectly in the Project Company or a Member in a Consortium developing the Project.

“Pooling Point” shall mean a point where more than one solar PV projects may connect to a common transmission line built and operated by the developer or any third party or by STU on behalf of the developer. This common transmission line may further connect with the interconnection/metering point. In this case, metering will be done at the interconnection point along with subsidiary meters at the pooling point to determine the generation by each project.

“Project” is defined by separate points of injection into the grid at inter-connection/metering point or in case of sharing of transmission lines by separate injection

at pooling point. Each project must also have a separate boundary, control systems and metering.

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

“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;

“Trading Margin” shall mean the margin as fixed by MNRE under this scheme on sale of Solar power to State Utilities/Discoms/other Bulk Consumers, subject to CERC applicable Regulations in this regard.

“Ultimate Parent” shall mean a company, which owns at least more than fifty percent (50%) equity either directly or indirectly in the Parent and Affiliates.

SECTION-II GUIDELINES FOR SELECTION AND IMPLEMENTATION OF SOLAR PV PROJECTS

2.1. Capacity of each Project

As mentioned under clause 1.4 and 2.6(C) of these guidelines, the Solar PV power projects are required to be designed for inter-connection with transmission network of STU/ CTU at voltage level of 33 kV or above. Given this requirement, the project capacity shall be at least 10 MW and in multiples thereof and the maximum capacity of the Project shall be up to 50 MW. The capacity shall mean the AC output at the project bus bar located within project premises.

2.2. Request for Selection for Short-listing of Projects

Solar Energy Corporation of India (SECI) shall invite Solar Power Developers (SPDs) to participate in the global bidding process against the Request for Selection (RfS) for development of Solar Photovoltaic Power Projects under this scheme. The SPDs shall submit their bid against the RfS within 60 days of the invitation by SECI.

2.3. Processing Fees

The SPDs shall submit non-refundable processing fee of Rs. 1 Lakh for each Project upto 20 MW capacity and of Rs.2 Lakh for each project above 20 MW capacity along with the RfS.

2.4. Number of Applications by a Company and Capacity limit

The total capacity of Solar PV Projects to be allocated to a Company including its Parent, Affiliate or Ultimate Parent-or any Group Company shall be limited to 100 MW, out of the total capacity of 750 MW to be added under batch-I Phase-II. The Company, including its Parent, Affiliate or Ultimate Parent-or any Group Company may submit application for a maximum of five projects at different locations subject to a maximum aggregate capacity of 100 MW. However, bids under 2 separate categories can be submitted as per provision under Clause 2.6(E). The Company, including its Parent, Affiliate or Ultimate Parent-or any Group Company shall submit one single application in the prescribed format detailing all projects at multiple locations for which the developer is submitting the application.

2.5. Waiting List

A waiting list of up to 100 MW may be maintained by SECI up to date of Financial Closure. SECI may allocate projects to the waiting list developers after approval of the quantity to be allocated by MNRE. Only developers who agree to be in waiting list will be kept there. SECI will retain EMD BGs for the waiting list developers.

2.6. 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. 2 crore or equivalent US\$ per MW of the project capacity up to 20 MW. For every MW additional capacity beyond 20 MW, additional net worth of Rs. 1 crore would need to be demonstrated. The computation of Net Worth shall be based on unconsolidated audited annual accounts of the company. The Company would be required to submit annual audited accounts for the last four financial years (or if the period of existence of the Company is less than four Years, then starting from the year of incorporation) viz., 2009-10, 2010-11, 2011-12 & 2012-13 indicating the year which should be considered for evaluation along with a net worth certificate from a Chartered Accountant to demonstrate fulfilment of the Criteria. However, for new as well as existing Companies, the Net Worth criteria can also be met as on day not more than seven days prior to the date of submission of RfS by the Company. To demonstrate fulfilment of this criteria, the Company shall submit a certificate from a Chartered Accountant certifying the availability of Net Worth on the date not more than seven days prior to submission of RfS along with a Certified copy of Balance Sheet, Profit & Loss Account, Schedules and cash flow statement supported with bank statement. {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 Equity share capital
Add:	Free 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 Company 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 *SECI*, incorporate a Project Company with equity participation by the Members before signing the PPA with *SECI*. 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).

B. Technical Criteria

Under the VGF scheme for Batch-I Phase II of JNNSM, it is proposed to promote only commercially established and operational technologies to minimize the technology risk and to achieve timely and successful commissioning of the Projects. The detailed technical parameters for Solar PV Projects are at Annexure-B.

C. Connectivity with the Grid

(i) The plant should be designed for inter-connection with the transmission network of STU/CTU or any other transmission utility at voltage level of 33 KV or above. The Project Developers should indicate to the transmission - licensee the location [Tehsil, Village and District, as applicable] of its proposed project. In this regard, the Project Developer shall submit a letter from the STU / CTU/Transmission Utility along with RfS confirming technical feasibility of connectivity of plant to substation.

(ii) The responsibility of getting connectivity with the transmission system owned by the STU / CTU or any other transmission utility, as may be required, will lie with the Project Developer. The transmission of power up to the point of interconnection where the metering is done for energy accounting shall be the responsibility of the SPD at his own cost. The maintenance of Transmission system upto the inter-connection point shall be the responsibility of the Project Developer.

(iii) The arrangement of connectivity can be made by the SPD through a dedicated transmission line which the SPD may construct himself or get constructed by STU or any other agency. The entire cost of transmission including cost of construction of line, wheeling charges, losses etc. from the project upto the interconnection point will be borne by the Project Developer. This connectivity can also be achieved through a shared line with any agency or any existing line of Discom or STU, provided the energy accounts are bifurcated and clearly demarcated for the power generated at solar project and are issued by the STU/ SLDC concerned.

(iv) The Project Developer may, however, shift interconnection point closer to his project if 33 kV substation comes closer to project during the tenure of PPA provided that the interconnection shall be maintained at 33 KV or above and energy at solar project is clearly demarcated for the power generated at solar project and energy accounts are issued by the STU/ SLDC concerned. The costs associated with this arrangement will also be borne by the project developer including the wheeling charges and losses up to the interconnection point. In case of nearby projects with Pooling point arrangement, the Project Developers may decide to share the cost of transmission charges and other associated charges from the pooling point up to the inter-connection point, amongst themselves.

D. Clearances required from the State Government and other local bodies

The projects developers are required to obtain necessary clearances as required for setting up the Solar PV Power Projects.

E. Domestic Content Requirement

Out of the total capacity of 750 MW under Batch-I Phase-II, a capacity of 375 MW will be kept for bidding with Domestic Content Requirement (DCR). Under DCR, the solar cells and modules used in the solar PV power plants must both be made in India. The Developers at the time of bidding may opt for either “DCR” or “Open” or both the categories. The Developers will submit separate Bids in case they wish to bid under both the categories. Each Bid/ Application can be for a maximum of five projects at different locations with aggregate capacity not exceeding 100 MW as mentioned under Clause 2.4.

2.7 Selection of Projects under the VGF scheme

- a. As mentioned in clause 2.6(E) above, 375 MW capacity will be kept for bidding under “DCR” category and developers may submit bids for either “DCR” or “Open” or both the

categories. The evaluation of bids and allocation of projects under these two categories will be done separately.

- b. Based on the RfS notification issued by *SECI*, separate Technical and Financial bids will be submitted by the developer in his Application, separately for the “DCR” and “Open” categories, as per his choice. The technical bid shall contain :
 - i. Pre-Feasibility report of the project covering its salient technical details including technology proposed to be deployed and configuration of the project. This can be modified while preparing DPR to be submitted at the time of Financial Closure.
 - ii. Letter from the STU/CTU/Transmission Utility confirming technical feasibility of connectivity of plant to grid substation. (In case of any subsequent change of location, fresh letter will be required).
 - iii. Preliminary estimate of project cost as per Annexure-A,
 - iv. Financial capability statement of the bidder/ bidding consortium demonstrating fulfilment of the Financial Criteria as specified in Clause 2.6(A)
 - v. Technical capability statement of the bidder/ bidding consortium for meeting the Technical Criteria specified in Clause 2.6(B)
 - vi. Undertaking that the project shall adhere to the Technical parameters as specified in Annexure-B.

The financial bid will clearly indicate the per MW VGF required from SECI in Indian Rupees against each project for which the bid is submitted.

- c. For each Category of bids (DCR or Open), the Technical Bids will be evaluated as per the evaluation criteria specified in the RfS document whereafter the Financial Bids of all technically qualified bidders shall be opened. The opened Financial Bids will be arranged in ascending order of per MW VGF required. The lowest Financial Bid received will be marked L1.
- d. Selection of projects for allotment will start from L1 and go up to the level where the specified maximum MW capacity to be allocated under the chosen Category is reached. In case the last Bid is for more than the left out capacity (that may or may not be a multiple of 10MW) the allocation will be restricted to the left out capacity.
- e. In case a Bidder has submitted applications (for up to maximum 5 projects) under both categories of DCR and Open for total capacity not exceeding 100 MW in each category and qualifies for allotment under both, the allotment under each category will be made for the total capacity mentioned in the bid for that category. However, in case the total combined capacity bid under both categories exceeds 100 MW, the Bidder will indicate

upfront in their Bid their project-wise preference for allotment of that project under 'DCR' and 'Open' category. This preference should cover all the project proposals in both the categories. The projects will be allotted in strictly the same order of preference subject to available capacity in that category, till the total allotted capacity to that bidder reaches 100 MW.

- f. In case some capacity under any of the two categories is left out after allotment to successful bidders, such left out capacity will be shifted to the other category if eligible bidders are available in that category. If still some capacity is left out and total capacity of 750 MW does not get allotted, the left out capacity may be rebid or added to Batch-II projects of JNNSM Phase-II.

2.8 Implementation Arrangement

2.8.1 The scheme will be implemented through SECI in close association with NTPC Vidyut Vyapar Nigam Limited (NVVN). SECI shall issue the Request for Selection (RfS) inviting developers to submit the bids quoting their VGF requirement for setting up the Solar PV Power projects at locations of their choice, evaluate the bids received, issue Letter of Intent (LoI) to successful bidders and sign Power Purchase Agreements (PPAs) with them for purchase of the solar power, valid for a period of 25 years. The solar power purchased by SECI shall be sold to State Utilities/ Discoms/ other Bulk Consumers at a fixed tariff of Rs.5.50/kWh (Rs.4.75/kWh in case of projects availing benefit of accelerated depreciation) for 25 years (including Trading Margin of SECI @ 5 paisa/kWh). SECI shall accordingly also sign back-to-back Power Sale Agreements (PSAs) with interested State Utilities/ DISCOMs for sale of solar power to them, which shall also be valid for a period of 25 years. SECI will also hold responsibility for subsequent activities related to projects commissioning and performance monitoring & reporting on regular basis during the tenure of the projects. SECI will carry out these activities in association and close coordination with the NVVN. NVVN will also be entrusted to undertake the trading of the solar power from the projects in the initial phase till SECI is fully equipped to undertake the trading activity.

2.8.2 Prior to issuance of RfS, MNRE/SECI shall obtain confirmation from the State Utilities/ DISCOMs/ other Bulk Consumers regarding their willingness to purchase the solar power under VGF scheme @ Rs.5.50/kWh and to sign the PSAs with SECI.

2.8.3 Within 30 days of the date of issue of LoI, the PPAs between SECI and the solar power developers for purchase of power from their projects will be executed. During this period, back-to-back PSAs will also be executed by SECI with the interested State Utilities/DISCOMs/ other Bulk Consumers for sale of solar power to them.

2.8.4 In case of any delay in SECI equipping itself fully to undertake the trading activity, NVVN will undertake the same on behalf of SECI.

2.9 Bank Guarantees

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

- Earnest Money Deposit (EMD) of Rs. 10 Lakh/MW in the form of Bank Guarantee along with RfS.
- Performance Bank Guarantee of Rs. 20 Lakh/MW at the time of signing of PPA.

2.9.2 In addition to the Performance Bank Guarantee of Rs. 20 Lakh/MW to be provided at the time of signing of PPA, the Bank Guarantee towards EMD will also be converted into Performance Bank Guarantee.

2.9.3 The Project Developers are required to sign PPA with SECI in line with the Timeline given in the guidelines. In case, the Project Developer refuses to execute the PPA within the stipulated time period, the Bank Guarantees towards EMD shall be en-cashed by SECI as penalty. In case the Project is not selected, *SECI* shall release the Bank Guarantees within 15 days of the issue of LoI to selected Projects. All the Bank Guarantees shall be valid for a period of 16 months from the date of signing of PPA for the Projects.

2.10 Minimum Equity to be held by Project Promoter

2.10.1 The Company developing the project shall provide complete information in their bid against RfS about the Promoters and their shareholding in the company indicating the controlling shareholding.

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

2.10.3 After execution of PPA, the controlling shareholding (controlling shareholding shall mean more than 50% of the voting rights and paid-up share capital (including fully, compulsory and mandatory convertible Preference shares/Debentures) in the Company/Consortium 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 *SECI*.

2.11 Financial Closure/ Project Financing Arrangements

2.11.1 The Project Developer shall report tie-up of Financing Arrangements for the projects within 210 days from the date of signing Power Purchase Agreement. At this stage, the Project Developer would furnish within the aforesaid period the necessary documents to establish that the required land for project development is in clear possession of the Project Developer (minimum 1.5 ha per MW) 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.

2.11.2 In case of delay in achieving above conditions as may be applicable, *SECI* shall encash performance Bank Guarantees and shall remove the project from the list of the selected projects.

2.12 Commissioning

2.12.1 Part Commissioning:

Part commissioning of the Project shall be accepted by *SECI* subject to the condition that the minimum capacity for acceptance of part commissioning shall be 10 MW and in multiples thereof. The PPA will remain in force for a period of 25 years from the date of acceptance of respective part commissioning of the project.

2.12.2 Commissioning Schedule and Penalty for Delay in Commissioning:

The selected projects shall be commissioned within 13 months of the date of signing of PPA. In this regard, a duly constituted Committee will physically inspect and certify successful commissioning of the project. In case of failure to achieve this milestone, *SECI* shall encash the Performance Bank Guarantee (BG) in the following manner:

- a. Delay up to one month - 20% of the total Performance BG on per day basis and proportionate to the Capacity not commissioned in lots of 10 MW each.
- b. Delay of more than one month and up to three months – *SECI* will encash remaining Performance BG on per day basis and proportionate to the Capacity not commissioned in lots of 10 MW each.
- c. In case the commissioning of the project is delayed 3 months, the pre-fixed levelized tariff of Rs.5.45/kWh (Rs.4.75/kWh in case of projects availing benefit of accelerated depreciation) shall be reduced at the rate of 0.50 paise/kWh per day of delay for the delay in such remaining capacity which is not commissioned. The maximum time period allowed for commissioning of the full Project Capacity with encashment of Performance Bank Guarantee and reduction in the fixed tariff shall be limited to 24 months from the date of signing of PPA. In case, the Commissioning of the Project is delayed beyond 24 months from the date of signing of PPA, the PPA capacity shall stand reduced / amended to the Project Capacity Commissioned and the PPA for the balance Capacity will stand terminated and shall be reduced from the selected Project Capacity.

The funds generated from the encashment of the Bank Guarantees shall be deposited in a separate fund under payment security mechanism to be maintained by *SECI* under the guidance of MNRE. The decision regarding usage of this fund shall be communicated by MNRE to *SECI* separately.

2.12.3 Return of Bank Guarantees

The Performance Bank Guarantees (BGs) will be returned to the developer immediately after successful commissioning of their projects, after taking into account any penalties due to delays in commissioning as per provisions stipulated above.

2.13 Electricity Generation from Solar PV Power Projects

2.13.1 Criteria for generation:

The developers will declare the CUF of their plant at the time of commissioning and will be allowed to revise the same once within 1 year of commissioning. The declared CUF shall in no case be less than 17% over a year. They shall maintain generation so as to achieve CUF* within -15% and +10% of their declared value till the end of 10 years from COD subject to the CUF remaining over minimum of 15% and within - 20% and +10% thereafter till the end of the PPA duration of 25 years. The lower limit will, however, be relaxable by SECI to the extent of grid non-availability for evacuation which is beyond the control of the developer. The CUF will be calculated every year from 1st April of the year to 31st March next year. However, for the purpose of release of VGF, CUF will be calculated every year from the date of commissioning up to completion of 1 year from the date of commissioning. The upper limit will not be applicable for the purpose of payment of VGF.

** For example, if the declared CUF is 20%, variation allowed will be in the range of 17% to 22% only.*

2.13.2 Shortfall in minimum generation

If for any Contract Year, it is found that the developer has not been able to generate minimum energy corresponding to the value of CUF below the lower limit of CUF declared by the developer, such shortfall in performance shall make developer liable to pay the compensation provided in the PSA as payable to Discoms and shall duly pay such compensation to SECI to enable SECI to remit the amount to Discoms. This will, however, be relaxable by SECI to the extent of grid non-availability for evacuation which is beyond the control of the developer. This compensation shall be applied to the amount of shortfall in generation during the Contract Year. The amount of compensation shall be equal to the compensation payable (including RECs) by the Discoms towards non-meeting of RPOs, if such compensation is ordered by the State Commission. However, this compensation shall not be applicable in events of Force Majeure identified under PPA with SECI/ NVVN affecting supply of solar power by SPD.

2.13.3 Excess generation:

Any excess generation over and above 10% of declared CUF will be purchased by SECI/ NVVN at a tariff of Rs.3/kWh, provided SECI/ NVVN is able to get any buyer for sale of such excess generation. While the developer would be free to install DC solar field as per his

design of required output, including his requirement of auxiliary consumption, he will not be allowed to sell any excess power to any other entity other than SECI (unless refused by SECI). In case at any point of time, the peak of capacity reached is higher than the rated capacity and causes disturbance in the system at the point where power is injected, the developer will have to forego the excess generation and reduce the output to the rated capacity.

2.14 Projects Implementation Schedule

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

Sl. No.	Event	Date
1.	Approval of RfS Document by SECI Board	Zero date
2.	Issue of Request for Selection (RfS) Document (Sale of Documents)	Within 7 days from Zero date
3.	Submission of Bids (Techno-Commercial & Financial) and Opening of Techno-Commercial Bids	Within 60 days from Issue of RfS.
4.	Evaluation of Techno-Commercial Bids and Short-listing of Bidders	Within 60 days from submission of Bids
5.	Opening of Financial Bids Issue of Letter of Intent (LoIs)	Within 7 days from Shortlisting of Bidders Over a period of 15 days after opening of Financial Bids
6.	PPA Signing	Within 30 days from the date of issue of Letter of Intent
7.	Financing Arrangement	Within 210 days from the date of signing of PPA
8.	Commissioning of Projects	Within 13 months from the date of signing of PPA

SECTION-III OTHER PROVISIONS

3.1 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 required approvals and sanctions in a time bound manner so as to achieve commissioning of the Projects within the scheduled Timeline. This may include facilitation in the following areas:

- Access to Sites
- Land acquisition for the project
- *Power Evacuation facility*

3.2 Amendment to the Guidelines

Any modification to these guidelines, if necessary, shall be carried out by the Ministry of New and Renewable Energy so as to successfully commission 750 MW Solar PV Projects under VGF scheme in batch-I Phase-II within the scheduled Timeline and thereby achieve the objectives of the Jawaharlal Nehru National Solar Mission.

3.3 Power to Remove Difficulties

If any difficulty arises in giving effect to any provision of these guidelines or interpretation of the guidelines or there is a requirement to modify the guidelines for better implementation, the matter will be referred to a Committee constituted by MNRE for this purpose. Thereafter, clarifications/modifications may be issued with approval of Secretary, MNRE.

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

3.4 Payment Security Mechanism

SECI shall set up a payment security mechanism in order to ensure timely payment to the developers. This fund will have a corpus to cover 3 months payment. The money received from encashment of BGs, interest earned on this fund, incentives for early payment, the extra money coming from 10% lower tariff to developers claiming AD and the grants from Government/ NCEF will be used to build this fund. The Ministry of New and Renewable Energy will frame Rules to operate this fund.

Preliminary Estimate of Cost of Solar PV Power Project

Project Capacity:MW

Location:

Sr. No.	Particulars	Estimated Cost (Rs. in Lakh)
1.	SPV Modules	
2.	Mounting Structures	
3.	Power Conditioning Units	
4.	Cables / Inter-connects/ Switchgear/ Control Panel/ Monitoring and Control System	
5.	Power Evacuation Arrangement up to Inter-Connection Point (Cables and Transformers, etc.)	
6.	Land Acquisition	
7.	Civil and General Works	
8.	Preliminary and Pre-Operative Expenses including IDC and Contingency	
	Total Project Cost	

(Signature)

(Name of Bidder)

Technical Requirements for Grid Solar PV Power Plants

The following are some of the technical measures required to ensure quality of equipment used in grid-connected solar photovoltaic power projects:

1. SPV Modules

- 1.1 The SPV 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, SPV modules must qualify to IEC 61730 for safety qualification testing at 1000V DC or higher. The modules to be used in a highly corrosive atmosphere throughout their lifetime must qualify to IEC 61701.

2. Power Conditioners/ Inverters

The Power Conditioners/Inverters of the SPV power plants conform to the latest edition of IEC/ equivalent BIS Standards as specified below:

Efficiency Measurements	IEC 61683
Environmental Testing	IEC 60068 -2
Electromagnetic Compatibility (EMC)	IEC 61000 series -relevant parts
Electrical Safety	IEC 62109-1&2
Protection against Islanding of Grid	IEEE1547/UL 1741/ equivalent BIS Standard

3. Other Sub-systems/ Components:

Other subsystems/components used in the SPV power plants (Cables, Connectors, Junction Boxes, Surge Protection Devices, etc.) must also conform to the relevant international/national Standards for Electrical Safety besides that for Quality required for ensuring Expected Service Life and Weather Resistance. (IEC Standard for DC cables for PV systems is under development. It is recommended that in the interim, the Cables of 600-1800 Volts DC for outdoor installations should comply with the draft EN50618 for service life expectancy of 25 years).

4. Authorized Test Centres

The PV modules / Power Conditioners deployed in the power plants must have valid test certificates for their qualification as per above specified IEC/ BIS Standards by one of the NABL Accredited Test Centres in India. In case of module types like Thin Film and CPV / equipment for which such Test facilities may not exist in India at present, test certificates from reputed ILAC Member Labs abroad will be acceptable.

5. Warranty

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.

6. 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 at Standard Test Condition (1000 W/m², AM1.5, 25^o C)
- 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

Site owners would be required to maintain accessibility to the list of Module IDs along with the above parametric data for each module.

7. Performance Monitoring:

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 SECI and MNRE or any other designated agency on line and/or through a report on regular basis every month for the entire duration of PPA. In this regard they shall mandatorily also grant access to *SECI* and

MNRE or any other designated agency to the remote monitoring portal of the power plants on a 24X7 basis.

8. Safe Disposal of Solar PV Modules:

The developers will ensure that all Solar PV modules from their plant after their 'end of life' (when they become defective/ non-operational/ non-repairable) are disposed off in accordance with the "e-waste (Management and Handling) Rules, 2011" notified by the Government and as revised and amended from time to time.
