No. 30/69/2013-14/NSM(Pt.)

भारत सरकार / Government of India

नवीन और नवीकरणीय ऊर्जामंत्रालय / Ministry of New & Renewable Energy

(NSM Coord. Group)

Block NO. 14, CGO Complex
Lodi Road, New Delhi-110 003
07 th January, 2015

To
The Pay & Accounts Officer
Ministry of New and Renewable Energy
New Delhi.

Subject: Implementation of Scheme for setting up over 300 MW of Grid-Connected & Off-grid Solar PV Power Projects by Defence Establishments under Ministry of Defence and Para Military Forces (under MHA) with Viability Gap Funding (VGF) under Phase-II/III of JNNSM during 2014-15 and onwards.

Sir,

I am directed to convey sanction of the President for implementation of a Scheme for setting up over 300 MW of Grid-Connected and off-Grid Solar PV Power Projects by Defence Establishments under Ministry of Defence and Para Military Forces under Ministry of Home Affairs (MHA) with VGF support of Rs.750.00 crore under JNNSM, in 5 years period i.e. from 2014 to 2019, as per provisions of the Scheme enclosed at **Annexure**. The Scheme has a mandatory condition that all PV cells and modules used in the solar plants set up under this Scheme, will be made in India.

I am also directed to convey that the government has also given permission for right to use the Defence land by the Developers chosen by Defence Establishments by way of lease and otherwise or for self- use of the same by Defence Establishments themselves for the purpose of setting up of Solar Power Projects and sale of excess power to Distribution Companies.

2. Objective

The scheme aims to promote ecologically sustainable growth and to utilise available land/rooftop of Defence sector /para military forces for achieving energy security by installing of solar power plants as also to use the domestically manufactured equipment in order to boost indigenous production of solar cells and modules.

3. Implementation arrangements

3.1 **Applicability:** The capacity of 300 MW of Grid-Connected and off-Grid Solar PV power projects, will be set up in various Establishments of Ministry of Defence i.e. Establishments of Army, Navy, Air Force, Ordnance Factory Board, Defence Laboratories and Defence PSUs etc. Para Military Forces coming under the Ministry of Home Affairs are also covered under this scheme. The project capacity shall be at least 1 MW and the maximum capacity of the Project shall be up to 20 MW.

3.2 **Implementation method**: The aforesaid Establishments of Ministry of Defence and the Para Military Forces would identify locations for developing solar projects, anywhere in the country including border areas from time to time, during the period from 2014-15 to 2018-19.

If some land is identified along the international borders, but does not belong to Defence Ministry or its Organizations, and power generated can be partly or fully used for Defence Forces, any Defence related Organizations or Para Military Forces, such land may also be used for setting up of Solar Project under this scheme.

3.3 **Procurement systems and procedure for tendering**: Tendering for inviting solar project developers to bid for developing projects, would be done by the Defence Establishments. Tendering would be done in phases, if necessary, based on the availability of land and will start on identification of a sufficient land/roof space to support a set of projects. The MoD or the Defence Organization would be free to follow their own procurement systems or develop detailed guidelines or procedures for tendering. They may also lay down guidelines to cover security aspects related to working in Defence/Paramilitary Establishments.

3.4 The Defence Establishments may prepare, as per its own rules and requirement, tender documents, RfP, PPA etc. and may process for allocation of projects through a competitive bidding process as per the extant norms of GFR, 2005 and other CVC guidelines on the subject.

In such case, the VGF amount will be transferred to the Defence Establishment by SECI under a VGF securitization agreement, which shall be prepared by SECI.

4. Mechanism for VGF under Developer Mode & EPC Mode

The scheme envisages a provision of VGF support of Rs.750 crore for setting up of Grid-connected solar PV power projects of 300 MW aggregate capacity to be developed in either (i) Developer Mode or (ii) EPC Mode. Off-Grid Solar Applications are also included. The Defence Establishment/ Para Military Forces (MHA) are free to adopt any of the above modes or a combination of the two. The details of (i) Developer Mode or (ii) EPC Mode are given in the Scheme.

In case the project is set up in Developer Mode, the VGF would be provided with a view to make available solar power from these solar power projects at a pre-determined fixed tariff of Rs.5.50 per unit (Rs.4.75 per unit in case of projects availing benefit of accelerated depreciation) at the project boundary or inter connection point, as may be specified in the guidelines. The solar project developers will be provided VGF based on their bid. The bidders will be selected on the basis of bids for minimum VGF requirement for the project with commitment to supply solar power at fixed tariff as given above. In view of technological up-gradation and economies of scales, the upper limits of VGF will be in 3 categories as given in the enclosed Scheme. The category in which a particular project falls will be determined based on the Alternating Current (AC) Capacity of the project and on the basis of contiguity of geographical location. VGF will be released in six tranches, as per the details given in Scheme.

As regards project set up in EPC Mode, VGF will still be admissible if the contract is awarded through an open tender based on total price/cost of setting up and commissioning the project. VGF shall be released in 4 instalments based upon the actual progress of project. The last instalment of 25% of the VGF shall be released after successful commissioning of the project (CoD). In view of technological up-gradation and economies of scales, VGF will be paid at a fixed rate of 30% of the price of the project, excluding price of land and excluding O&M charges, or (i) Rs.2.5 Cr./MW, whichever is lower, for capacity upto 5 MW; (ii) Rs.2.0 Cr./MW for capacity greater than 5 MW and upto 25 MW; and (iii) Rs. 1.5 Cr./MW for capacity greater than 25 MW. In case of a project avails benefit of Accelerated Depreciation (AD), the VGF shall be limited to (i) Rs.1.5 Cr./MW, (ii) Rs.1.0 Cr./MW and (iii) Rs. 0.5

Cr./MW respectively for capacities as mentioned above. The project will then belong to the Defence Establishment and therefore there is no need to set a tariff unless the organization wants to have a separate account for power generation.

5. **Power Purchase Agreement**(PPA): Under the Developer Mode, PPA is required to be signed between the selected solar project developers and the Defence Establishments, where land is located. However, no PPA will be required under EPC Mode. The selected projects shall be commissioned within 13 months of the date of signing of PPA

The power generated through these solar plants shall be purchased/utilized by the Establishments of Ministry of Defence/Para Military Forces (MHA) or their sister establishments, at a fixed levelised tariff of Rs.5.50 per kWh for 25 years in case of developer mode and through its own system in the case of EPC mode.

6. **Role of SECI**: The SECI will be responsible for Fund Management i.e. release of VGF, on behalf of MNRE.For Fund Management, SECI will be entitled for a Management Fee @ 1% of the subsidy component. Besides handling VGF fund, SECI will also do other activities as mentioned in the Scheme. It will also be monitoring the commissioning of the solar projects and the performances post-commissioning of the projects.

7. **Domestic Content Requirement (DCR):**The entire capacity of 300 MW will be kept for bidding in phases, with DCR. Under DCR, the solar cells and modules used in the solar PV power plants must both be made in India as per specification and testing requirement fixed by MNRE. MNRE will issue guidelines covering DCR and technical requirements and other salient issues.

8. **Project Implementation Schedule** for Solar PV Projects: Total of 300 MW capacity will be added in 5 years period i.e. from 2014 to 2019.

9. In case of any operational difficulties and in order to ensure timely implementation of the scheme, MNRE will be competent to make amendments in the Scheme with approval of the Minister, MNRE without increasing the financial requirements and VGF limits.

10. The funds for implementation of the above scheme would be met from Demand No.69-Ministry of New & Renewable Energy; Major Head:2810-New & Renewable Energy; 101-Grid Interactive & Distributed Renewable Power, 01-Grid Interactive Renewable Power, 04-Solar Power, 31-Grants-in-aid General during 2014-15 (Plan).

11. This sanction issues in exercise of powers delegated to this Ministry and with the approval of competent authority and concurrence of IFD *vide* their Dy. No. IFD/1812/2014-15, dated 23rd December, 2014.

Yours faithfully,

(K.G. Suresh Kumar)
Under Secretary to the Govt. of India
Phone: 011-24360707, Extn. 1912

Encl: As above

Copy for information and necessary action to:-

1. Ministry of Defence, New Delhi, w.r.t. their letter No.374/SO(II)/D(Lands2014) dated 15.10.2014

2. Ministry of Defence, (Deptt. of Defence Production), New Delhi
3. Ministry of Home Affairs, North Block, New Delhi, w.r.t. their OM No. II/20034/297/2014-IS-II dated 10.09.2014 and OM No.19/39/2014-Judl. and PP dated 10.10.2014
4. Ministry of Power (Th.II Division) Shram Shakti Bhavan, New Delhi
5. Department of Commerce (Trade Policy Division), New Delhi w.r.t. OM No.1/16-2012-TPD dated 02.09.2014
6. Ministry of Finance (Deptt. of Exp.), North Block, New Delhi, w.r.t. OM No.58(06)/PF-II/2009 dated 25.08.2014.
7. Planning Commission, Yojna Bhawan, New Delhi, w.r.t. OM No.12026/28/2014-PET dated 20.08.2014.
8. Principal Director of Audit, Scientific Audit-II, DGACR Building. I.P. Estate, Delhi-02
9. Managing Director, SECI, 1st Floor, D-3, A Wing, Religare Building District Centre, Saket, New Delhi – 110017

Internal Distribution:

1. PS to Hon'ble Minister, NRE & PSO to Secretary, MNRE
2. All Advisers / Group Heads/ JS (TK)/JS(VJ)/ JS&FA, MNRE
3. Dir. (NIC) to upload this on the Ministry's website.
4. CA, MNRE / Consultant(NSM) / Cash Section
5. Hindi Section for Hindi version
6. Sanction folder

(K.G. Suresh Kumar)
Under Secretary to Govt. of India

Annexure

Scheme for setting up over 300 MW of Grid-Connected & Off-grid Solar PV Power Projects with Viability Gap Funding (VGF) under Phase-II/III of JNNSM.

Background

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 up to 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 300 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 100 MW with GBI support through IREDA. In the second phase, further capacity addition of 3000 MW under Central Scheme is envisaged through various schemes.

2. Status and achievement against 300 MW Capacity Grid-Connected Solar Power

A. Projects under Phase-I implemented through NVVN:

In the Phasel of the Mission, 950 MW solar power projects (excluding 84 MW selected under migration scheme) were selected in two batches (batch-I during 2010-11and 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 530 MW has been commissioned under these Batches till date. In addition, a capacity of 50.5 MW under migration scheme, 90.8 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 692.8 MW.

B. 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 Scheme (GBI). 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.

3. **Proposal**

This scheme provides Viability Gap Funding for setting up grid-connected solar PV power projects of 300 MW capacity in the country under Phase-II/III of JNNSM. The salient features of the Scheme are as under:-

i) 300 MW of solar PV power projects would be set-up on land/roof space falling under various Establishments of Ministry of Defence i.e. Establishments of Army, Navy, Air Force, Ordnance Factory Board, Defence Laboratories and Defence PSUs etc. Para Military Forces would also be considered under this scheme. The first step would be identification of land/roof space by the concerned Defence Organization/Establishment/Office. If some land is identified along the international borders, but does not belong to Defence Ministry or its Organizations, and power generated can be partly or fully used for Defence Forces, any Defence related Organizations or Para Military Forces, such land may also be used for setting up of Solar Project under this scheme.

ii) The aforesaid Establishments of Ministry of Defence would identify locations for developing solar projects, anywhere in the country including border areas from time to time, during the period from 2014-15 to 2018-19.

iii) It is proposed that tendering for inviting solar project developers to bid for developing projects, would be done by the Defence Establishments. Tendering would be done in phases, if necessary, based on the availability of land and will start on identification of a sufficient land/roof space to support a set of projects. The MoD or the Defence Organization would be free to follow their own procurement systems or develop detailed guidelines or procedures for tendering.

iv) The Defence Establishments may prepare, as per its own rules and requirement, tender documents, RfP, PPA etc. and may process for allocation of projects through a competitive bidding process as per the extant norms of GFR, 2005 and other CVC guidelines on the subject. In such case, the VGF amount will be transferred to the Defence Establishment by SECI under a VGF securitization agreement, which shall be prepared by SECI. The VGF will be handled by SECI on behalf of MNRE.

v) SECI may prepare Standard Tender Documents i.e. RfP, PPA etc. If required the Defence Organization can use this document for which SECI will not charge any fee.

vi) SECI may also do the tendering, if requested by one or more Defence Establishments. In such case the requirement of various Defence Establishments will be put together in lots and SECI will invite the tender. This may give better rates due to scale. VGF amount may then be released to the Solar Power Developer (SPD) by SECI directly on meeting performance standards.

vii) For the above stated role, SECI will charge a processing fee from Developers at the rate of sum of Rs. 2 Lakh per project for projects up to 20 MW size and Rs. 3 Lakhs per project for projects above 20 MW size.

viii) The following two modes may be used for tendering:

A. **Developer Mode**:

This is the mode under which the project is given to a developer, who makes the investment, owns the project and supplies power to the Defence Establishments. This will be possible only in cases where land can be leased or given under "Right to Use" to the Developer or where land can be provided to the developer through any arrangement as may be deemed fit.

B. **EPC Mode**:

This is applicable when project is built through EPC Contractor and investment is made by the Defence Establishment/ Para Military Forces. In certain cases the Defence Organisation may like to own the project and get it developed through an EPC contractor.

Detailed Procedure under Developer Mode:

(a) It is proposed that the solar power from these projects would be supplied at a fixed tariff of Rs.5.50 per unit for a period of 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 unit. The project developers would be responsible for getting all clearances, tying up loan, connection with grid etc. Power Purchase Agreement (PPA) would be signed between the selected solar project developers and the Defence Establishments, where land is located. The developer will sell the power to the Defence Establishments. Surplus power, if any, may be sold directly to the Discoms by the developer or the Defence Organisation may buy the entire power and sell the surplus power to Discoms at its end.

(b) It is proposed to provide a Viability Gap Funding with a view to make available solar power from these solar power projects at a pre-determined fixed tariff of Rs.5.50 per unit (Rs.4.75 per unit in case of projects availing benefit of accelerated depreciation) at the project boundary or inter connection point as may be specified in the guidelines.

(c) The solar project developers will be provided a viability gap fund based on their bid. The bidders will be selected on the basis of bids for minimum VGF requirement for the project with commitment to supply solar power at fixed tariff as given above. In view of technological up-gradation and economies of scales, the upper limits of VGF are as follows:-

Category I:	Rs.2.5 Cr./MW for project capacity upto 5 MW;
Category II:	Rs.2 Cr./MW for project capacity greater than 5 MW upto 25 MW; and
Category III :	Rs.1.5 Cr./MW for project capacity greater than 25 MW.

The category in which a particular project falls will be determined based on the Alternating Current (AC) Capacity of the project and on the basis of contiguity of geographical location.

(d) The solar project developer has to put his own equity of at least Rs.1.5 Cr./MW.

(e) It is proposed that 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 will be indicated in the guidelines) as under:-

  End of 1st Year
  End of 2nd Year
  End of 3rd Year
  End of 4th Year
  End of 5th Year

(f) 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 will be specified in the guidelines.

(g) The developers would be required to bid by offering lowest Viability Gap Fund for providing power at the above mentioned tariff. The bids would be arranged in the ascending order of per MW VGF required. Selection of the projects for allotment will start from L1 and go up to a total of required capacity.

(h) The project capacity shall be at least 1 MW and the maximum capacity of the Project shall be up to 20 MW.

(i) 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 50 MW in each tender.

(j) The beneficiaries of the solar power would be Defence Organisations (Army/Air Force/ Navy/Ordnance Factory Board/Defence PSUs), which shall execute the PPA with the selected solar project developers.

(k) The developer will sell the power to the Defence Establishments/ Para Military Forces. The Defence Organisation may buy the entire power. Surplus power, if any, may be sold to its sister establishments located anywhere in the country or to Distribution Company or third party.

Detailed Procedure under EPC Mode:

(a) In certain cases the Defence Organisation may like to own the project and get it developed through an EPC contractor. VGF will still be admissible if the ~~job~~ contract is awarded through an open tender based on total price/cost of setting up and commissioning the project. VGF shall be released in 4 instalments based upon the actual progress of project. The last instalment of 25% of the VGF shall be released after successful commissioning of the project (CoD).

(b) In view of technological up-gradation and economies of scales VGF will be paid at a fixed rate of 30% of the price of the project, excluding price of land and excluding O&M charges, or Rs.2.5 Cr./MW, whichever is lower, for capacity upto 5 MW; Rs.2.0 Cr./MW for capacity greater than 5 MW and upto 25 MW; and Rs. 1.5 Cr./MW for capacity greater than 25 MW. In case of a project avails benefit of Accelerated Depreciation, the VGF shall be limited to Rs.1.5 Cr./MW, Rs. 1.0 Cr./MW and Rs. 0.5 Cr./MW respectively for capacities as mentioned above. The project will then belong to the Defence Establishment and therefore there is no need to set a tariff unless the organization wants to have a separate account for power generation.

ix) If the project fails to generate any power continuously for any1 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 on assets equal to the value of VGF released.

x) It is proposed that SECI will be responsible for Fund Management (i.e. release of VGF) and will also be monitoring the commissioning of the solar projects and the performances post-commissioning of the projects. For Fund Management, SECI will be entitled for a Management Fee @ 1% of the Fund Handled.

xi) Some Defence Organizations may ask SECI to supervise/provide consultancy or do O&M. For this SECI may settle on a fee as it may deem fit or as may be agreed between the two parties.

4. Domestic Content Requirement (DCR)

a) The entire capacity of 300 MW will be kept for bidding in phases, 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 as per specification and testing requirement fixed by MNRE. MNRE will issue guidelines covering DCR and technical requirements and other salient issues.

b) 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 2.5 MW and in multiples thereof.

c) The selected projects shall be commissioned within 13 months of the date of signing of PPA.

d) Delay in commissioning will attract penalty as will be detailed in the guidelines.

e) The Defence Organisation may impose suitable conditions/ guidelines to ensure security while allowing developers to operate on its land.

f) Selected solar project developers may approach SECI for issuance of sanction letters for release of VGF.

5. Funds Requirement

The estimated requirement of funds is Rs.750 crores for an investment of the order of Rs.2400 crores, for setting-up of 300 MW capacity of grid-connected solar PV power projects.

6. Purchase of Renewable Energy Certificates (RECs)

It will be mandatory for the Defence Organizations or Discoms (for surplus power) to buy one non-solar REC or proportionate solar REC so as to match the expenditure on non-solar REC, for every 40,000 units of solar power purchased by them.

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