

New Scheme for Farmers for Installation of Solar Pumps and Grid Connected Solar Power Plants

1. Introduction

The Government has approved launch of new scheme for farmers for installation of solar pumps and grid connected solar power Plants, with an objective of providing financial and water security to farmers.

The scheme consists of three components:

- (i) Component-A: 10,000 MW of Decentralized Ground Mounted Grid Connected Renewable Power Plants.
- (ii) Component-B: Installation of 17.50 lakh standalone Solar Powered Agriculture Pumps.
- (iii) Component-C: Solarisation of 10 Lakh Grid-connected Solar Powered Agriculture Pumps.

All three components combined, the scheme aims to add a solar capacity of 25,750 MW by 2022. The Component-A and Component-C will be implemented on pilot mode for 1000 MW capacity and one lakh grid connected agriculture pumps respectively and thereafter, will be scale-up on success of pilot run. Component-B will be implemented in full-fledged manner.

2. Scheme Components and broad implementation framework:

(i) Component A: Setting up of 10,000 MW of Decentralized Ground/Stilt Mounted Grid Connected Solar or other Renewable Energy based Power Plants

Under this component solar or other renewable energy based power plants of capacity 500 kW to 2 MW will be setup by individual farmers/cooperatives/panchayats/Farmer Producer Organisations (FPO). However, States/Discoms may allow setting-up of solar or other renewable energy based power plants of capacity less than 500 kW in specific cases. The power plants will be preferably installed within five km radius of the sub-stations in order to avoid high cost of sub-transmission lines and losses. The Distribution companies (Discoms) will notify sub-station wise generation capacity which can be fed from such plants to the Grid through a particular sub-station.

The power generated will be purchased by Discoms at a feed-in-tariff (FiT) determined by respective State Electricity Regulatory Commission (SERC) for which PPA will be signed by Discom for a period of 25 years. In case, the aggregate capacity offered by applicants is more than notified capacity for a particular sub-station, bidding route will be followed to select power generators as per guidelines issued by MNRE and in such cases the FiT will be the ceiling tariff for bidding. MNRE will also devise a model Power Purchase Agreement.

The power projects under the scheme would be implemented on any land, including agricultural lands where solar plants may be installed in stilt fashion and with

adequate spacing between panel rows for ensuring that farming activity is not affected. The bidding may be renewable energy source agnostic, with the evaluation parameter being the tariff offered, irrespective of the renewable energy source (ground or stilt mounted solar, wind, bio-mass, waste to energy or small hydro). The farmer or other eligible bidders would be free to adopt any renewable energy source or technology while responding to the bid. However, the State Government, if they wish, can call for bids specifically only for solar plants to be installed on stilts, especially on cultivable lands, so that the farmers continue to get the opportunity to cultivate the land, apart from enjoying lease rent.

Government of India will provide a Procurement Based Incentive (PBI) to the Discoms @ 40 paise/kWh or Rs.6.60 lakhs/MW/year, whichever is lower, for buying solar/ other renewable power under this scheme. The PBI will be given to the Discoms for a period of five years from the Commercial Operation Date of the plant. Therefore, the maximum PBI to be given to a Discom will be Rs. 33 Lakh per MW.

The concerned Discom shall provide connectivity at the sub-station. The Discoms will ensure “must-run” status to the solar/ other renewable power plants installed under this scheme and will keep the feeders ‘ON’ during sunshine hours of a day. They shall act as facilitator to the beneficiaries in implementation of this scheme.

A farmer/group of farmers/ cooperatives/ Farmer Producer Organisations (FPO), in case they are not able to arrange equity required for development of the project, can opt for developing the project through developer or even through local Discom. In such a case the land owner will get lease rent as mutually agreed between the parties. The lease rent, in case a developer is engaged, may be in terms of Rs per year per unit land area or in terms of Rs per unit energy generated per unit land area. In order to ensure timely payment of lease rent, the lease rent will be paid directly to the farmers bank account by the Discom, from the payment due to the developer. MNRE will devise a standard lease agreement to facilitate the beneficiaries. However, the terms of lease Agreement may be finalised on mutual consent of concerned parties.

State Nodal Agencies (SNAs) of MNRE will coordinate with States/UTs, Discoms and farmers for implementation of the scheme. They will assist the farmers in project development activities including, formulation of DPR, PPA/EPC contracts, getting funds from financial institutions, etc. For any issues arising during selection of solar/ other renewable energy based power plants and implementation, a State level Committee under the chairmanship of Principal Secretary (Renewable Energy/Energy) will be setup by the participating State/UT and the SNA will be responsible to coordinate/organize the quarterly meetings of the State Level Committee. In addition, SNAs shall ensure publicity of the scheme and create awareness through advertisements. etc, and also monitor the implementation of the scheme. The SNA will be eligible to get service charge of Rs.0.25 Lakh per MW after commissioning of the projects.

Benefits: The scheme will open a stable and continuous source of income to the rural land owners for a period of 25 years by utilisation of their dry/uncultivable land. Further, in case cultivated fields are chosen for setting up solar power project, the

farmers could continue to grow crops as the solar panels are to be set up above a minimum height.

The proposed scheme would ensure that sufficient local solar/ other renewable energy based power is available for feeding rural load centres and agriculture pump-set loads, which require power mostly during the day time. As these power plants will be located closer to the agriculture loads or to electrical substations in a decentralized manner, it will result in reduced Transmission losses for STUs and Discoms. Moreover, the scheme will also help the Discoms to achieve the RPO target.

(ii) Component B: Installation of 17.50 Lakh Stand-alone Solar Pumps

Under this Component, individual farmers will be supported to install standalone solar pumps of capacity up to 7.5 HP for replacement of existing diesel pump sets in areas where there is no source of power for irrigation. Pumps of capacity higher than 7.5 HP may be allowed, however, the Central Financial Assistance (CFA) will be limited to the CFA applicable for pump of 7.5 HP.

Solar PV capacity in kW equal to the pump capacity in HP is allowed under the scheme. CFA of 30% of the benchmark cost or the tender cost, whichever is lower, of the stand-alone solar pump will be provided. The State Government will give a financial support of 30%; and the remaining 40% will be provided by the farmer. Bank finance may be made available for 30% of farmer's contribution, so that farmer has to initially pay only 10% of the cost.

However, in North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N Islands, CFA of 50% of the benchmark cost or the tender cost, whichever is lower, of the stand-alone solar pump will be provided. The State Government will give a financial support of 30%; and the remaining 20% will be provided by the farmer. Bank finance may be made available for 10% of farmer's contribution, so that farmer has to initially pay only 10% of the cost.

New pumps would not be covered under this component in Dark zones/black zones. However, existing standalone diesel pumps, can be converted into standalone solar pumps in these areas. Further, micro irrigation techniques will be encouraged to save water. Further, whenever the grid reaches in the off-grid area, the stand alone Solar Pumps can be connected to the grid to feed surplus power to the grid and earn extra income.

Discoms/ Agricultural Department/ Minor Irrigation Department / any other Department designated by State Government will be the implementing agencies for the component. 2% of the eligible CFA will be provided as service charges to the Implementing Agency. Implementation agency will carry out tender as per the standard bidding document and the procedure issued by MNRE. Projects will be sanctioned by MNRE once in each quarter, after approval by a Screening Committee under the chairmanship of Secretary, MNRE.

It will be mandatory for implementing agency to create remote monitoring system to monitor performance of the system post-installation.

Centralised procurement of the panels/controllers/pumps may be done by the agencies like SECI, EESL, etc., as per requirement.

Benefits: These pumps will save the expenditure incurred on diesel for running diesel pump and provide the farmers a reliable source of irrigation through solar pump apart from preventing harmful pollution from running diesel pump. In light of the long waiting list for electric grid connection, this scheme will benefit 17.5 lakh farmers over a period of four years, without adding to the grid load.

(iii) Component C: Solarisation of 10 Lakh Grid Connected Agriculture Pumps

Under this Component, individual farmers having grid connected agriculture pump will be supported to solarise pumps. Solar PV capacity up to two times of pump capacity in kW is allowed under the scheme. However, State may specify lower solar PV capacity in kW, which in any case shall be not be less than pump capacity in HP e.g. for 2 HP pump it will not be less than 2 kW. The farmer will be able to use the generated solar power to meet the irrigation needs and the excess solar power will be sold to Discom. CFA of 30% of the benchmark cost or the tender cost, whichever is lower, of the solar PV component will be provided. The State Government will give a financial support of 30%; and the remaining 40% will be provided by the farmer. Bank finance may be made available for 30% farmer's contribution, so that farmer has to initially pay only 10% of the cost.

However, in North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N Islands, CFA of 50% of the benchmark cost or the tender cost, whichever is lower, of the solar PV component will be provided. The State Government will give a financial support of 30%; and the remaining 20% will be provided by the farmer. Bank finance may be made available for 10% of farmer's contribution, so that farmer has to initially pay only 10% of the cost.

Further, the CFA will be limited to Solar PV capacity up to two times of pump capacity in kW or 15 kW, whichever is lower. Solarisation of Pumps of capacity higher than 7.5 HP may be allowed, however, the CFA will be limited to the CFA applicable for pump of 7.5 HP.

This will help to create an avenue for extra income to the farmers as they can sell surplus solar power to the grid, and for the Discom to meet their RPO targets.

Discoms /GENCO/ any other Department designated by State Government will be the implementing agencies. 2% of the eligible CFA will be provided as service charges to Implementing Agencies. Implementation agency will carry out tender as per the standard bidding document and the procedure issued by MNRE. Projects will be sanctioned by MNRE once in each quarter, after approval by a Screening Committee under the chairmanship of Secretary, MNRE.

This component will be applicable to farmers already connected to grid. Feeder-wise implementation is proposed to be carried out. All agriculture pumps in a feeder will be solarised, however, States may impose a minimum solarisation requirement for a feeder in terms of minimum % of pumps solarized on that feeder.

In case of dark zones/black zones only existing grid connected pumps will be solarised. Further, micro irrigation techniques will be encouraged to save water.

Discoms will purchase excess power from the farmer at the rate decided by the respective State/SERC. The Discoms will ensure “must-run” status to the solarised feeders and will keep such feeders ‘ON’ during sunshine hours of a day.

It will be mandatory for implementing agency to create remote monitoring system to monitor performance of the system post-installation.

States may also formulate state specific policy for grid connected solar pumps, customised to needs of the respective State, keeping the broad framework provided by MNRE intact.

Centralised procurement of the panels/controllers/pumps may be done by the agencies like SECI, EESL, etc., as per requirement.

Benefits: Farmers participating in the scheme will receive reliable daytime power. Farmers are incentivized to use less power for agriculture and feed surplus solar power in to the grid, thereby becoming efficient in terms of both energy as well as ground water usage in addition to having secondary source of income by selling surplus power to the Discom.

Discom will save on recurring deficit due to low agriculture tariff as the requirement of power for Agriculture pumps will be met by the farmers from the solar pumps and thus, instead of selling of subsidized power by Discoms to the farmers, Discoms will buy power from them at the rate to be decided by the respective State/SERC. Discom is also able to meet their Solar RPO obligation equivalent to the solar power purchased.

Detailed procedure for availing the financial assistance under the scheme and implementation guidelines will be issued by MNRE separately and uploaded on the MNRE website.