F. No. 32/645/2017-SPV Division
Government of India
Ministry of New and Renewable Energy
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Block no. 14, CGO Complex,
Lodi Road, New Delhi -110003

Date: 04 December 2020

Office Memorandum

Subject: Guidelines for Implementation of Feeder Level Solarisation under Component-C of PM-KUSUM Scheme

Vide OM of even number dated 04.11.2020, Ministry had issued scale-up and expansion of Pradhan Mantri Urja Suraksha evam Utthaan Mahabhiyaan (PM KUSUM) Scheme. Under the scaled up Scheme, a target of solarization of 7.5 lakh existing agricultural pumps has been kept through feeder level solarization under Component-C.

2. Under the above mentioned Order, it was also informed that guidelines for feeder level solarization under Component-C will be issued separately. Accordingly, in continuation of the above mentioned Order and Guidelines for PM KUSUM Scheme dated 22.07.2019 along with amendments and additions thereof, undersigned is directed to issue the Guidelines for implementation of feeder level solarisation under Component-C of PM-KUSUM Scheme.

3. This issues with approval of Competent Authority.

(Shobhit Srivastava)
Scientist-D

To

All concerned

Guidelines for Implementation of Feeder Level Solarisation under Component-C of PM-KUSUM Scheme

1. Background

Ministry had issued detailed Guidelines for implementation of Component-C of PM-KUSUM Scheme on 8 November 2019. As per provisions of the PM-KUSUM Scheme, the grid connected agriculture pumps can be solarised with central and state subsidy of 30% each and farmer's contribution of 40%. The solar capacity allowed is up to two times of the pump capacity in kW and surplus power will be purchased by DISCOM. Since this component was to be implemented on pilot mode, flexibility was given to states for using different models like net-metering, replacing pump with BLDC pump or any other innovative model as deemed fit by the states.

Based on discussions held with states it has been decided to also include feeder level solarisation under Component-C of PM-KUSUM Scheme. Accordingly, these guidelines are being issued to provide broad implementation framework for feeder level solarisation.

2. Implementation Methodology

The Distribution Company (DISCOM)/Power Department will be the implementing agency for feeder level solarisation in their respective areas. However, state Government may appoint any other expert agency to help DISCOM for tendering and other related activities of installation of solar power plant for feeder level solarisation.

Where agriculture feeders have already been separated the feeders may be solarised under the scheme. This will lead to lower cost both in terms of lower capital cost and cost of power. Feeders having major load for agriculture may also be considered for solarisation under the Scheme. The requirement of total annual power for an agriculture feeder will be assessed and a solar power plant of capacity that can cater to the requirement of annual power for that agriculture feeder can be installed either through CAPEX mode or RESCO mode, which will supply solar power to that feeder.

For example, a feeder having annual power requirement of say 10 lakh units, the power can be supplied by solar power plant of capacity around 600 kW with CUF of 19%. Higher or lower CUF, depending upon the average solar insolation available in the areas, may be considered for assessing solar power capacity.

Feeder level solar power plant may be installed to cater to the requirement of power for a single feeder or for multiple agriculture feeders emanating from a distribution sub-station (DSS) to feed power at 11 kV or at the higher voltage level side of the DSS depending upon on factors like availability of land, technical feasibility, etc., and there is no cap of the capacity of solar power plant for feeder level solarisation.

The DISCOMs may identify land near DSS, get ownership of land or its lease rights, provide connectivity at DSS and lay sub-transmission line between DSS and solar power plant.

For the purpose of calculating CFA, the cost of installation of solar power plant has been estimated as Rs. 3.5 Cr/MW. Under the Scheme solarisation of pumps of any capacity is allowed, however, in case of pumps of capacity above 7.5 HP, the CFA will be limited to solar capacity for 7.5 HP pumps.

A. Implementation under CAPEX Model

For installation of feeder level solar power plant CFA of 30% (50% in case of NE States, hilly states/UTs and Island UTs) will be provided by central Government and balance will be met through loan from NABARD/PFC/REC. Concessional financing will be available for solarisation of agriculture pumps as RBI has already included this component under priority sector lending and MoAFW has included community level solarisation under Agriculture Infrastructure Fund. The current outlay on subsidy being presently provided for supply of electricity to agriculture pumps by State Government can be used to repay the loan in five to six years after which power will be available free of cost and outflow from State Government's exchequer on account of electricity subsidy for agriculture will come to an end. On an average power for agriculture will be required only for 150 days in a year, the electricity produced from the solar power plant in the remaining days will possibly provide an additional income to the DISCOM. If this is also used to pay off the loans taken from NABARD/PFC/REC, the loan can be repaid sooner.

Advance CFA up to 40% of the total eligible CFA will be released to DISCOMs on completion of tendering process and signing of work agreement with EPC contractor selected for installation of solar power plant. Balance CFA will be released on successful commissioning of solar power plant and plant starts supplying power to agriculture feeder(s). The process of tendering and signing of work agreement with EPC contractor should normally be completed by implementing agency within six months from the date of issuance of sanction by MNRE.

The DISCOM may carry-out operation and maintenance of the solar power plant. Alternatively, the EPC contractor who install the solar power plant may also be given task for O&M of plant and supply guaranteed solar power for 25 years. Payment for O&M of solar plant can be linked with energy production. In case of failure of solar power plant to supply required solar power for the complete 25 years of project life, the MNRE may direct the DISCOM to refund the CFA amount on prorata basis. An undertaking to this effect will be submitted by DISCOM to MNRE.

B. Implementation under RESCO Model

For installation of feeder level solar power plants through RESCO model, the developers will be selected on the basis of lowest tariff offered for supply of required solar power for a period of 25 years. The developer will get CFA @ 30% of the estimated cost of installation of solar power plant i.e. Rs. 1.05 Cr/MW (30% of Rs. 3.5 Cr/MW). The solar power supplied by RESCO developer would much cheaper than present cost of power delivered at distribution sub-station and therefore, DISCOM will save the amount equal to difference between the two. In the RESCO model the burden of electricity subsidy for agriculture will be reduced to the extent of difference mentioned above and not become zero as in case of CAPEX model, where once the loan is repaid, subsidy support from state Government is no longer required.

States may choose to provide upfront subsidy in lieu of electricity subsidy being given to agriculture consumers. This upfront subsidy from state could be in the form of VGF to RESCO developer, in addition to 30% CFA, to supply power to farmers of an agriculture feeder at present subsidised rates or any other rate fixed by state Government. For example, if present subsidised rate for agriculture is Rs. 1.50/kWh, the RESCO developer will be selected on the basis of lowest VGF bidded for supply of solar power at Rs. 1.50/kWh.

CFA up to 100% of the total eligible CFA will be released to the RESCO developer through DISCOM on successful commissioning and declaration of Commercial Operation Date (COD) of solar power plant. The release of CFA to RESCO developer is subject to submission of bank guarantee equivalent to CFA amount. Bank Guarantee will be released in four lots of 25% each on successful operation of plant after 2.5 yrs, 5 yrs, 7.5 yrs and 10 yrs from CoD. For selection of RESCO developer and PPA, the Guidelines and model PPA issued by MNRE for implementation of Component-A of PM-KUSUM Scheme may be used, with suitable modifications. The maximum timeline allowed for commissioning of solar power plant by RESCO Developer will be nine months from the date of signing of PPA. The process of selection of RESCO Developer and signing of PPA should normally be completed by implementing agency within six months from the date of issuance of sanction by MNRE.

3. Feeder Separation:

Where agriculture feeders are not separated, loan for feeder separation will be available from NABARD/PFC/REC. Ministry of Power is also in process of finalising a Scheme to provide assistance for feeder separation. The savings on account of electricity subsidy on agriculture and the possible income from the surplus electricity generated by the solar power plant when it is not being used for irrigation can also be used to pay off the loan taken for feeder separation.

4. Water saving and enhancing farmers' income

The objective of Component-C of PM-KUSUM Scheme is to provide reliable day-time power to farmers, enhancing their income by purchasing surplus solar power and thus

incentivising them for saving water. In case of feeder level solarisation, farmers will get daytime reliable solar power for irrigation, but there is no provision of selling surplus solar power. Therefore, farmers can be incentivised for saving water and enhancing their income. The DISCOMs shall assess the average power requirement by farmers of an area depending upon various factors. This power requirement will be treated as their benchmark consumption. The DISCOMs shall incentivise farmers for consuming power less than benchmark consumption. Such saving of power shall be treated as surplus power injected by farmers and they will be paid by DISCOMs against this saved power at pre-determined tariff. This will be an important measure for conserving groundwater level.

5. Feeder level solarisation with enhanced capacity of solar plant

The state may choose to install feeder level solar power plant of capacity higher than capacity required for supplying power to agriculture feeder. The additional solar power generated may be used for supplying nearby rural/urban loads during day time or alternatively stored/banked for supplying power during evening hours for lighting/induction cooking and other household purposes. However, in this case CFA will be limited for solar capacity required for supplying power to the agriculture feeder.

6. Allocation of capacity and Service Charges

Under Component-C of PM-KUSUM Scheme solarisation of total 4 lakh grid connected pumps are targeted for sanction by 2020-21 and 50% of these are to be solarised through feeder level solarisation and balance 50% through individual pump solarisation. The Scheme being demand driven the capacity will be allocated to states depending upon demand raised by them. MNRE will request states to send their demand within given timeframe. The states may send their demand for individual pump solarisation or feeder level solarisation or both. The allocation of capacity will be made by Screening Committee headed by Secretary, MNRE. Implementing agency will get service charges as applicable under Scheme Guidelines.

7. System Specifications and Quality Control

All components used for installation of solar power plants shall confirm to applicable BIS/MNRE specifications and follow quality control guidelines issued by MNRE. It will be mandatory to use indigenously manufactured solar panels with indigenous solar cells and modules.

Thorough maintenance of selected agriculture feeders is required to maintain feeder availability during sunshine hours. This includes maintenance of DSS, sub-transmission/LT lines lines and distribution transformers, etc., on regular basis in a time bound manner.

8. Monitoring

It will be mandatory for DISCOMs to monitor solar power generation and performance of the solar power plant through online system. The online data will be integrated with central monitoring portal which will extract data from the State portals for monitoring of the scheme.

9. Interpretation of the Guidelines

In case of any ambiguity in interpretation of any of the provisions of these guidelines, the decision of the Ministry shall be final. The Guidelines would be reviewed by the Ministry from time to time and necessary modifications would be incorporated after getting approval of competent authority.