

To

PUNJAB STATE POWER CORPORATION LIMITED

O/o CHIEF ENGINEER/ARR&TR, Regd. office, PSEB Head Office, The Mall Patiala-147001.

Tel.No.0175-2302531, Fax No.0175-2302416, email ce-arr-tr@pspcl.in

Corporate Identity Number: U40109PB2010SGC033813 Website: www.pspcl.in

Registrar,
Punjab State Electricity Regulatory Commission
Chandigarh.

Amph
3/8/20
JA(PCB)

Memo. No. / TR-5 /966 Dated

Subject: Petition No. 07 of 2020 filed by PEDA under Section 62 of Electricity Act, 2003, Chapter VI of Conduct of Business Regulations and MYT Regulations 2014 read with other relevant provisions of the Electricity Act 2003 as well as regulations framed by this Hon'ble commission from time to time, for Determination of Levellised feed in Tariff in terms of Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan (PM-KUSUM) Scheme for Solarisation of 3900 Grid connected agriculture pumps in the State of Punjab under Component -C of the ibid scheme, for sale of surplus power generated by solar PV array of 4 KW for 3 HP capacity Pump, 7KW for 5 HP and 10 KW for 7.5 HP grid connected agriculture pumps after meeting power requirements for irrigation of agriculture land.

With respect to PSERC order dated 10.07.2020, please find enclosed 7 no. sets of affidavit on behalf of PSPCL in the subject cited petition for kind consideration of the Hon'ble Commission.

DA/ As above

B. Sharma
Chief Engineer/ARR&TR
PSPCL, Patiala

5469
28/7/2020
CC:-

✓ Punjab Energy Development Agency,
Plot No. 1 & 2, Sector 33-D, Chandigarh

Punjab Energy Dev. Agency
Chandigarh

Diary No. *1787*

Date *3/8/2020*



BEFORE THE PUNJAB STATE ELECTRICITY REGULATORY COMMISSION
CHANDIGARH

PETITION NO. 7 OF 2020

IN THE MATTER OF:

Petition under Section 62 of Electricity Act, 2003, Chapter VI of Conduct of Business Regulations and MYT Regulations 2014 read with other relevant provisions of the Electricity Act 2003 as well as regulations framed by this Hon'ble commission from time to time, for Determination of Levellised feed in Tariff in terms of Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan (PM-KUSUM) Scheme for Solarisation of 3900 Grid connected agriculture pumps in the State of Punjab under Component –C of the ibid scheme, for sale of surplus power generated by solar PV array of 4 KW for 3 HP capacity Pump, 7kw for 5 HP and 10 KW for 7.5 HP grid connected agriculture pumps after meeting power requirements for irrigation of agriculture land.

AND

IN THE MATTER OF:

Punjab Energy Development Agency,

- Petitioner

ADDITIONAL AFFIDAVIT ON BEHALF OF PUNJAB STATE POWER CORPORATION LIMITED

Er. Bhupinder Sharma S/o Late Sh. Jagan Nath Sharma aged 57 years is working as CE/ARR&TR in PSPCL having office at F4, Shakti Vihar, Patiala do solemnly affirm and state as follows:-

1. That I am as Chief Engineer/ARR & TR of Punjab State Power Corporation Ltd., the petitioner in the above matter, is duly authorized by the PSPCL to make affidavit in this behalf.
2. I am filing this affidavit pursuant to the directions of this Hon'ble Commission to place on record the details regarding the position of PSPCL to procure the power under the Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyaan (hereinafter referred to as 'PM-KUSUM') Scheme for Solarisation of 3900 Grid connected agriculture pumps in the State of Punjab under Component –C of the said scheme.
3. I say that PSPCL had given its concurrence for implementation of the PM-

6.5



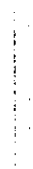
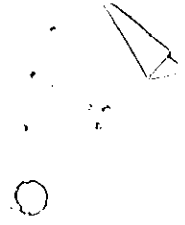
KUSUM Scheme in the Meetings held on 12.06.2019 and 20.06.2019 under the chairmanship of Principal Secretary , New and Renewable Energy Sources , Govt. of Punjab. The said Meeting was undertaken to work out the modalities for implementation of PM KUSUM scheme. The feasibility of the Scheme – Component 'C' had been approved by a Committee constituting officers of PEDA and PSPCL. A copy of the combined Minutes of the Meeting dated 12.06.2019 and 20.06.2019 are attached hereto and marked as **Annexure A**.

4. I say that PSPCL is ready to procure the power at the rate determined by the Hon'ble Commission. It is submitted that as per the latest data available, the prevalent rate of solar tariff is less than Rs.2.50 per KWhr. The Solar Energy Corporation of India's (SECI) latest auction, as on June, 2020, saw a low bid of ₹2.36/kWh. It is submitted that this Hon'ble Commission may consider the prevalent rate of Rs 2.50/KWhr as the ceiling limit for the determination of tariff. Further, it is submitted that PSPCL is willing to procure the power, subject to the condition that 100% tubewell pumps on the selected feeder shall be solarized keeping in view the operational constraints.
5. I say that as per the terms of the PM KUSUM Scheme for component-C, the State Distribution Licensees are required to purchase the excess power from the farmer at the rate decided by the respective State/State Electricity Regulatory Commission. The relevant extracts from the Guidelines notified by the Central Government on 22.07.2019 (**Annexure-B**) are as under:

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 is allowed under the scheme. However, State 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 DISCOMs.

B.S



.....
 Further, the CFA will be limited to Solar PV capacity up to two times of pump capacity in kW for pumps up to 7.5 HP. 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 in the respective State/UTs. This will help to create an avenue for extra income to the farmers, and for the DISCOMs to meet their RPO targets. The solar power fed in to the grid and solar power utilized by farmer both will be accounted for fulfillment of solar RPO by the DISCOM.

.....
 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.

The power procured by the Distribution Licensee will enable the Distribution Licensee to meet their Renewable Purchase Obligation, as notified by their respective State Commissions.

6. I say that as regards the identification of areas from which PSPCL is willing to procure the Power, PSPCL has already submitted a list of 313 feeders to PEDAF for solarisation of agriculture tubewells under component-C in safe ground water blocks. Out of these feeders, PEDAF will segregate the feeders which will be solarised. A copy of the 313 Feeders identified by PSPCL are attached hereto and marked as Annexure C.

VERIFICATION:

I, the deponent above named do hereby verify that the contents of my above affidavit are based on the records of PSPCL maintained in the ordinary course and believed by me to be true, no part of it is false and nothing material has been concealed there from.

Verified at Patiala on this 27th day of July 2020.

B. Sharma
 DEPONENT

Chief Engineer/A.R.R.&T.
 PSPCL PATIALA

B. Sharma
 DEPONENT

Chief Engineer/A.R.R.&T.
 PSPCL PATIALA





Dy. No. 1296 ISPS/DG
PUNJAB
ENERGY DEVELOPMENT
AGENCY
 (A Punjab Govt. Undertaking)

LETTH Design Annexure-A (11) 4
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No. : 9562-69
 Dated : 24/7/19

(e/w/c) se/SAO
 5/8/19

1. Chairman cum Managing Director, Punjab State Power Corporation Ltd. The Mall, Patiala- 147001,
2. Chief Engineer, Hydel, Designs, Shed No. A-4, Shakti Vihar, PSPCL Patiala
3. Chief Engineer, TA & I, Shed No. B-3, Shakti Vihar, PSPCL Patiala
4. S E / IPC, Thermal Designs, Shakti Vihar, PSPCL Patiala
5. Addl. SE, DSM, Shed No. B-3, Shakti Vihar, PSPCL Patiala
6. OSD, Power Reforms, Room No. 11, Water Resources building Sector 18-B, Chandigarh

SEW
 2/8/19

CMD (Buss)
 31/7/19
 (e)PSO

DIR/Gen.

तिलदेवाल/महदेवाल		SEW
प्राथमिक डिजाइन/सहायक डिजाइन	Th. Design & TA	
मुख	प्राथमिक	
द्वितीय श्रेणी डिजाइन	द्वेष	
मौखिक/लिखित प्रस्तुत		

Subject: Minutes of the meeting held under the Chairmanship of Principal Secretary, New and Renewable Energy Sources, Govt. of Punjab on 12.06.2019 for Implementation of Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyna (PM-KUSUM) scheme and subsequent minutes of the meeting held with PSPCL on 20.06.2019.

Sir,

A meeting under the Chairmanship of Principal Secretary, New and Renewable Energy Sources, Govt. of Punjab was held on dt. 12.06.2019 to work out the modalities for implementation of Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyna (PM-KUSUM) scheme, launched by Ministry of New and Renewable Energy, Govt. of India. The minutes of this meeting are enclosed herewith for initiating necessary action for implementation and achievement of targets fixed under different Components of the scheme.

Thanking you,

ASE/PC-I	
ASE/PC-II	
ASE/PC-III	
PA to SE/PC	
SE/PC PSPCL, Patiala	

Yours faithfully,

 General Manager

Encls. : As above

- Co.: 1. PS to Principal Secretary, NRES, Govt. of Punjab, Secretariat-1, Chandigarh
 2. PS to Chief Executive Punjab Energy Development Agency, Chandigarh

SOLAR PASSIVE COMPLEX

PLOT NO. 1/2, SECTOR 33-D, CHANDIGARH (U.T.) - 160 034. Tel. : 0172-2663328, 2663382
 Fax : 0172-2662865 E-mail : peda@spa@yahoo.co.in Website : http://www.peda.gov.in

FORWARDS A SUSTAINABLE ENERGY FUTURE

Minutes of the meeting held under the Chairmanship of Principal Secretary, New and Renewable Energy Sources, Govt. of Punjab on 12.06.2019 for Implementation of Kisan Urja Suraksha evam Utthaan Mahabhiyna (KUSUM) scheme and subsequent minutes of the meeting held with PSPCL on 20.06.2019.

A meeting under the Chairmanship of Principal Secretary, New and Renewable Energy Sources, Govt. of Punjab was held on dt. 12.06.2019 to work out the modalities for implementation of Kisan Urja Suraksha evam Utthaan Mahabhiyna (KUSUM) scheme, launched by Ministry of New and Renewable Energy, Govt. of India. The following were present:-

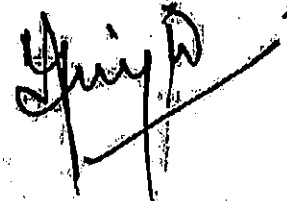
PEDA

1. Sh. N.P.S.Randhawa, Chief Executive, PEDA
2. Sh. M.P Singh, GM, PEDA

PSPCL

1. Sh. H.S Saluja, Chief Engineer, Hydel, Design, PSPCL
2. Sh. Inderjit Singh, Chief Engineer, TA&I, PSPCL
3. Sh. Manjit Singh SE, IPC, PSPCL
4. Sh. Narinder Mehta, OSD, Power Reforms
5. Sh. Sandeep Allpura, Addl. SE, DSM, PSPCL

At the outset, Chief Executive, PEDA while welcoming the officers of PSPCL in the meeting informed that Ministry of New and Renewable Energy, Govt. of India has launched Kisan Urja Suraksha evam Utthaan Mahabhiyna (KUSUM) scheme to promote the use of solar energy in agriculture sector to increase the income of the farmers and to save the conventional fuels & environment. As detailed in the agenda note, KUSUM scheme has three components. Under Component - A, Solar power plants of capacity 500Kw to 2MW are to be setup by the farmers, developers, panchayats and co-operative societies and MNRE, GOI will provide an incentive of Rs. 0.40/kwh to PSPCL on purchase of solar power at the Feed In Tariff (FIT) to be notified by PSERC. Under Component - B, stand alone off-grid agriculture solar pumps upto capacity 7.5 HP shall be setup by the farmers with the funding pattern of (GOI:GOP: Benf. = 30:30:40) and Under Component- C, grid connected agriculture pumps upto capacity 7.5 HP shall be solarised under the funding pattern of (GOI:GOP: Benf. = 30:30:40). Excess power under component C shall be purchased by PSPCL.



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Chief Executive, PEDA informed that Govt. of Punjab has taken a major decision to solarise the agriculture power and the Principal Secretary, New and Renewable Energy Sources, Govt. of Punjab said that KUSUM scheme is very important and beneficial for the farmers, State & PSPCL and discussed in detail the different methodologies for implementation of all the three components with the officers of PEDA and PSPCL. During detailed deliberations, Sh. M.P Singh, GM, PEDA informed that MNRE, GOI has fixed the following major targets for the country uptill 2021-22.

- 1. Under component – A (Solar power plants 500Kw to 2MW) = 10,000 MW
- 2. Under Component – B (Off-grid solar pumps) = 17.50 Lacs
- 3. Under component – C (Grid connected solar pumps) = 10 Lacs

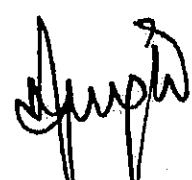
GM, PEDA further Informed that PEDA has proposed the following targets for the State to be executed during the next three years uptill 2021-22 which may be sent to MNRE, GOI for approval.

- 1. Under component – A (Solar power plants 500Kw to 2MW) (5%) = 500 MW
- 2. Under Component – B (Off-grid solar pumps) (5%) = 87500 Nos.
- 3. Under component – C (Grid connected solar pumps) (5%) = 50000 Nos.

Component-A :- After detailed deliberations, a target of 500MW capacity solar power plants was fixed, for which concurrence was given by the officers of PSPCL present in the meeting. PSNRE said that these power plants shall be set up by the Gram Panchayats, Farmer Producer Organisations and Co-operative Societies for which reverse tariff based bidding shall be carried out on the Feed In Tariff (FIT) to be notified by PSERC and purchase cost of PSPCL shall reduce to Rs. 2.50/kwh to 2.60kwh after availing of MNRE, GOI incentive of Rs. 0.40/kwh if Feed In Tariff (FIT) is taken as Rs. 3/kwh. This shall help PSPCL in meeting the solar RPO shortfall of 700MUs also. The year wise targets and income to PSPCL from MNRE, GOI incentive shall be as under:-

1 MW produces = 15,77,000 units / annum
(Table-A)

Sr. No.	F.Y	Plant Capacity (MW)	Units produced per annum (MUs)	Per annum MNRE,GOI incentive @ 0.40/kwh (Rs. in Crs.)	Total 5 years incentive to PSPCL (Rs. in Crs.)
1	2019-20	100	157	6.31	31.55
2	2020-21	150	236	9.46	47.30
3	2021-22	250	394	15.77	78.85
	Total	500			157.70



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Component-B (Stand alone off-grid solar pumps):- It was decided that 18,000 pumps shall be set up as already conveyed to MNRE, GOI by PEDA under funding pattern (GOI:GOP:Benf 30:30:40) for which requirements of funds from GOI, GOP and Farmers shall be as under :-

**Solar PV capacity for 7.5HP pump = 7.5 Kw
Rate per pump = 4.50 lakhs
Yearly requirement of funds (18,000 units) :-**

(Table-B)

(Rs. In Crs)

Sr. No.	F.Y	Target of Pumps (Nos.)	Total Cost (Approx) (Rs.)	GOI share (Rs.) (30%)	GOP share (Rs.) (30%)	Beneficiary/ Farmer share (Rs.) (40%)
1	2019-20	5000	225	67.50	67.50	90.00
2	2020-21	6000	270	81.00	81.00	108
3	2021-22	7000	315	94.50	94.50	126
	Total	18000	810	243	243	324

Component-C (Grid connected solar Pumps):- It was decided that 50,000 grid connected pumps shall be solarised subject to that the scheme is economically viable and beneficial for farmers, GOP and PSPCL. New pumps which are in the waiting list of PSPCL shall be solarised under this component, however the existing grid connected pumps can be solarised subject to the willingness of the concerned farmers. The excess solar power of these pumps shall be exported to the grid and sold to PSPCL. A committee comprising of Sh. MP Singh, GM, PEDA, Sh. Naninder Mahta, OSD, Power reforms and Sh. Sandeep Alipuria, Addl. SE, DSM, PSPCL was constituted to carry out the feasibility analysis of this component for which the proposed year wise requirement of funds from GOI, GOP and Farmers under funding pattern (GOI:GOP:Benf 30:30:40) shall be as under:-

**Solar PV capacity for 7.5HP pump = 10 Kw
Rate per pump = 5 lakhs
Yearly requirement of funds (50,000 units):-**

(Table-C)

(Rs. In Crs)

Sr. No.	F.Y	Target of Pumps (Nos.)	Total Cost (Approx) (Rs.)	GOI share (Rs.) (30%)	GOP share (Rs.) (30%)	Beneficiary/ Farmer share (Rs.) (40%)
1	2019-20	10000	500	150	150	200
2	2020-21	15000	750	225	225	300
3	2021-22	25000	1250	375	375	500
	Total	50000	2500	750	750	1000

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Accordingly a meeting of this committee was convened on dtd. 20.06.2019 in PEDA office and the detailed deliberations were carried out on the techno-commercial analysis prepared by PEDA on component-C (Annexure-A). The salient features of techno-commercial analysis for a single 7.5 HP grid connected solar pump is as under:-

• Pump set capacity	= 7.5 HP
• Solar PV array capacity	= 10Kw
• Annual energy generation	= 15770 kwh
• Annual energy consumption per pump	= 7500 kwh
• Power Sale to grid by the farmers	= 8270 kwh
• Sale tariff	= Rs. 2.50 / kwh
• Tariff of Agriculture power	= Rs. 5.28 / kwh
• Total cost of pump set (7.5HP)	= Rs 5.00 lacs
• MNRE,GOI share (30%)	= Rs. 1.50 Lac
• GOP share (30%)	= Rs. 1.50 Lac
• Farmer Share / Investment (40%)	= Rs. 2.00 Lac
• Payback Period of GOP (NABARD financing)	= 5.25 years
• Payback period of farmer share	= 10.75 years

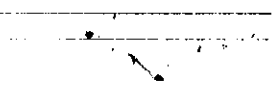
This grid-connected solar pumping program shall be implemented on 11KV AP feeder wise in the State and these feeders will have to be kept energized during day time for export of surplus power from the solar pumps. The technical issues will require further discussions at implementation phase with PSPCL.

- **Benefit to farmer** = After payback period of 10.75 years, the farmer earns additional income of Rs. 20,600/annum for next 14.25 years.
- **Benefit to GOP** = After payback period of 5.25 years, Annual AP subsidy saving of Rs. 40 Crs. for the next 19.75 years on solarisation of 10,000 grid-connected pumps during 1st year consuming 75 MUs annually based on current AP tariff of Rs. 5.28/kwh.
- **Benefit to PSPCL** = Power purchase at much lower rate of Rs. 2.50/kwh at 11KV as compared to Solar Power now being purchased by PSPCL @ Rs. 2.66/kwh from outside the State at the border on 400/220KV.

The committee observed that the above proposal is economically viable and beneficial for the Farmers, GOP and PSPGL as the farmers earn income of Rs. 20,600 / annum from sale of surplus power to PSPCL and AP subsidy burden on GOP reduces after payback period of 5.25 years and PSPCL gets power at much lower rate of Rs. 2.50/kw at 11Kv reducing the T&D losses. The officers of PSPCL gave their concurrence for implementation of the scheme and decided that PEDA may send the targets to MRNE, GOI for approval.

The Meeting ended with a vote of thanks to the chair.





F. No. 32/645/2017-SPV Division
Government of India
Ministry of New and Renewable Energy

Block-14, CGO Complex,
Lodhi Road, New Delhi
Dated: 22 July, 2019

Office Memorandum

Subject: Guidelines for implementation of Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan Scheme:

This refers Ministry's OM of even number dated 8.3.2019 vide which sanction was issued for launch of New Scheme for Farmers covering following three Components:

- i. Component A: 10,000 MW of Decentralized Ground Mounted Grid Connected Renewable Power Plants of individual plant size up to 2 MW.
 - ii. Component B: Installation of 17.50 lakh standalone Solar Powered Agriculture Pumps of individual pump capacity up to 7.5 HP.
 - iii. Component C: Solarisation of 10 Lakh Grid-connected Agriculture Pumps of individual pump capacity up to 7.5 HP.
2. The Scheme will be called as Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM KUSUM) Scheme. The operational Guidelines for implementation of the PM KUSUM Scheme are enclosed.
3. This issues with the approval of Competent Authority.

Enclosed: As above.

To
All Concern


(J. K. Jethani)
Scientist-E

Ministry of New and Renewable Energy

Guidelines for Implementation of Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM KUSUM) Scheme

1. Background

As a part of Intended Nationally Determined Contributions (INDCs), India has committed to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030.

The Cabinet had approved scaling-up of solar power target from 20,000 MW of Grid Connected Solar power Projects to 1,00,000 MW by 2022.

While Large Scale Solar power generation projects are being installed to achieve the ambitious target of 100 GW of Solar Power generation by 2022, it has been planned to simultaneously develop decentralized Solar energy and other renewable energy generation Plants of capacity up to 2 MW which could be connected directly to existing 33/11 kV or 66/11 kV or 110/11 kV sub-stations of Distribution Company, thus saving in transmission system requirement apart from T&D losses. Such plants near these sub-stations may be developed, preferably by farmers, giving them an opportunity to increase their income by utilising their barren and uncultivable land for solar or other renewable energy based power plants. Cultivable land may also be used if the Solar plants are set up on stilts where crops can be grown below the stilts and sell RE power to DISCOMs.

Besides, developing decentralized renewable power, it is planned to replace Agriculture Diesel pumps with Solar Water pumps and Solarise Grid connected Agriculture pumps. At present, over 30 million agricultural pumps are installed in India, out of which nearly 10 million pumps are diesel based. The Distribution Companies (DISCOMs) are not in a position to energize these pumps through grid connection as seen from the long waiting lists with such Distribution Companies. Hence there is a need to provide energy to these pumps through solar energy. Also, over 20 million grid-connected agriculture water pumps installed in the country consume more than 17 percent of total annual electricity consumption of the country. Solarization of the same can reduce dependence of these pumps on conventional sources of energy supplied by DISCOMs and thus reducing their burden of subsidy on agriculture consumption of Electricity. This will also provide additional source of income to farmers who will be in a position to sell the surplus power to DISCOMs.

The new Scheme has provision for the decentralised renewable energy plants, Solar agriculture water pumps and solarisation of existing Grid connected Agriculture pumps.

2. Approval of the New Scheme for Farmers

The Government of India has launched New Scheme for Farmers with following components:

- i. Component-A: Setting up of 10,000 MW of Decentralized Ground/ Stilt Mounted Grid Connected Solar or other Renewable Energy based Power Plants;
- ii. Component-B: Installation of 17.50 Lakh Stand-alone Solar Agriculture Pumps; and

iii. Component-C: Solarisation of 10 Lakh Grid Connected Agriculture Pumps.

The Component-A and Component-C will be implemented initially on pilot mode for 1000 MW capacity and one lakh grid connected agriculture pumps respectively and Component-B will be implemented in full-fledged manner with total Central Government support of Rs. 19,036.5 Crore.

After successful implementation of pilot project of Components A and C, the same shall be scaled up with necessary modifications based on the learning from the pilot phase with total Central Government support of ₹ 15,385.5 Crores.

All three components of the scheme aim to add Solar capacity of 25,750 MW by 2022 with the total Central Financial Support of ₹ 34,422 crore.

3. Implementation mechanism:

These guidelines have been formulated to provide broad implementation framework of the Scheme.

1. 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 (REPP) of capacity 500 kW to 2 MW will be setup by individual farmers/ group of farmers/ cooperatives/ panchayats/ Farmer Producer Organisations (FPO)/Water User associations (WUA) hereinafter called Renewable Power Generator (RPG). 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 REPP will be preferably installed within five km radius of the sub-stations in order to avoid high cost of sub-transmission lines and to reduce transmission losses.

The Distribution companies (DISCOMs) will notify sub-station wise surplus capacity which can be fed from such RE power plants to the Grid and shall invite applications from interested beneficiaries for setting up the renewable energy plants. The renewable power generated will be purchased by DISCOMs at a pre-fixed levelised tariff. In case, the aggregate capacity offered by Applicants is more than notified capacity for a particular sub-station, bidding route will be followed by DISCOMs to select Renewable Power generator and in such cases the pre-fixed levelised tariff will be the ceiling tariff for bidding. Selection of bidders will be based on the lowest tariff offered in the ascending order as quoted by the bidders in the closed bid or e-reverse auction as the case may be. A model PPA (Power Purchase Agreement) to be executed between RPG and DISCOMs has been prepared by MNRE and attached at Annexure-I. The duration of PPA will be 25 years from Commercial Operation Date (COD) of the project. The total energy purchased from these RE plants will be accounted for fulfillment of RPO by the DISCOM.

In case the farmers/ group of farmers/ cooperatives/ panchayats/ Farmer Producer Organisations (FPO)/ Water User associations (WUA) etc. are not able to arrange equity required for setting up the REPP, they can opt for developing the REPP through developer(s) or even through local DISCOM, which will be considered as RPG in this case. In such a case, the land owner will get lease rent as mutually agreed between the parties. The lease rent may be in terms of Rs per year per acre of land or in terms of Rs per unit energy generated per acre

of land area. The farmer(s) may opt for payment of lease rent directly in their bank account by the DISCOM, from the payment due to the developer. A model Land Lease Agreement to facilitate the beneficiaries has been prepared by MNRE and is attached at Annexure-II. However, the terms of Land Lease Agreement may be finalised on mutual consent of concerned parties.

The REPP under the scheme would be implemented primarily on Barren / uncultivable land. Agricultural land is also permitted under the scheme provided that solar plants are installed in stilt fashion (i.e. raised structure for installation of Solar panels) and with adequate spacing between panel rows for ensuring that farming activity is not affected. The RPG would be free to adopt any renewable energy source or technology while responding to the bid. However, in case of cultivable land with solar plants, the same may be installed on stilts, so that the farmers continue to cultivate the land, apart from getting the benefit of lease rent. In such a case DISCOM may also float bids (in case of specific substations) where setting up of solar projects on stilts may be mandatorily required, and bids for energy tariff invited accordingly.

A. Selection and Implementation of Decentralised Renewable Energy Power Plants

a. Notification of sub-station wise generation capacity

DISCOM shall assess and notify RE generation capacity that can be injected in to all 33/11 kV or 66/11 kV or 110/11 kV sub-station of rural areas and place such notification on its website for information of all stakeholders. To facilitate farmers willing to lease out their land for development of RE plants near above notified substation(s), as per provisions of this scheme, DISCOM may also place list of such farmers on their website. However, the leasing of land of any farmers will be a bi-partite agreement between the farmer and the developer and DISCOM will not be held responsible for failure in getting the land leased out to a developer. To meet additional demand DISCOM will augment the capacity of sub-station under IPDS or any other scheme.

b. Expression of Interest (EoI) for Short-listing of RPG

DISCOM or any agency authorized by the DISCOM shall invite 33/11 kV or 66/11 kV or 110/11 kV sub-station wise EoI from RPG to participate in selection process for development of decentralised renewable power plants. The RPG shall submit their interest against the EoI as per the schedule notified by DISCOM. An RPG will not be allowed to apply for more than one renewable power plant for a particular 33/11 kV sub-station. The EoI of an RPG will also be disqualified if it is found that its proprietor/partner/director/member has also filed EoI as proprietor/partner/director/member for another RPG for the same sub-station.

The DISCOM or any agency authorized by the DISCOM may request to submit non-refundable processing fee from the interested RPGs, which in no case shall be higher than Rs. 5000 per MW or part thereof of the capacity applied for.

In order to ensure only quality systems are installed, prevailing MNRE/BIS specifications and quality control orders applicable for solar modules, inverters, BoS and other equipment shall be followed.

In case of REPP being developed by a developer, the Net-Worth of the developer should not be less than Rs. 1.00 Crore per MW (of the capacity applied). This shall not be applicable for

farmers cooperative or panchayats or Farmer Producer Organisations (FPO) /Water User associations (WUA) or farmers setting up REPP in their own lands.

c. Selection of REPP

In case the total aggregate capacity of eligible applications received for a particular sub-station is less than or equal to the capacity notified for connectivity at the sub-station, LoA will be awarded to all eligible applicants for procurement of renewable power at a pre-fixed levelised tariff.

In case the total aggregate capacity of eligible application received for a particular sub-station is more than the capacity notified for connectivity at the sub-station, then DISCOM or any agency authorized by the DISCOM shall invite Bids from all these applicants. All eligible applicants will have to submit tariff bids within a prescribed time. Selection of bidders will be based on the lowest tariff offered in the ascending order as quoted by the bidders in the closed bid or e-reverse auction as the case may be. LoA will be awarded to all successful bidders.

d. Connectivity with the sub-station

REPP of capacity up to 2 MW may be connected at 11 kV side of sub-station and the selected RPG will be responsible for laying of dedicated 11 kV line from REPP to sub-station, construction of bay and related switchgear at sub-station where the plant is connected to the grid and metering is done. The DISCOM will facilitate the RPG in getting right of way for laying of 11 kV line. Alternatively, RPG can get constructed the 11 kV lines through DISCOM by paying the applicable cost and other charges. RPG will be responsible for maintaining this dedicated 11 kV line. In case more than one bidders are awarded projects to be connected to same Sub-station, they shall be permitted to co-ordinate with each other for setting up common transmission line for feeding to Sub-Station if they so desire and with the approval of DISCOM. However, in North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N Islands, where States/UTs allows RE plants of capacity less than 500 kW the plant may be connected through LT line subject to technical feasibility and approval by DISCOM.

The RPG shall comply grid connectivity and other regulations as applicable.

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

The RPG is required to obtain necessary clearances as required for setting up the REPP.

f. Power Purchase Agreement (PPA)

A copy of standard Power Purchase Agreement to be executed between the DISCOM and the RPG shall be provided by DISCOM along with invitation for submission of EoI. The model PPA agreement shall be as provided by MNRE (Copy enclosed). Within two months of the date of issue of Letter of Award (LoA) by DISCOM or any agency authorized by the DISCOM, the Power Purchase Agreement (PPA) will have to be executed by RPG. The PPA shall be for a period of 25 years from the date of COD. The DISCOM will be obliged to buy the entire power from RPG within the contract capacity. However, the RPG is required to achieve a minimum CUF of 15% on annual basis during the PPA period. However, in case of low Solar radiation zones, minimum CUF can be revised by concerned DISCOM. The RPG will be free to operate the plant after expiry of the 25 years of PPA period if other conditions like land

lease, etc., permits. However, any extension of the PPA period beyond 25 years shall be through mutual agreements between the RPG and DISCOM. As a payment security measure DISCOM will have to maintain LC and Escrow Arrangement as defined in the PPA.

g. Bank Guarantees

The RPG shall provide the following Bank Guarantees to DISCOM as follows:

- Earnest Money Deposit (EMD) of Rs. 1 Lakh/MW in the form of Bank Guarantee along with EoI.
- Performance Bank Guarantee (PBG) of Rs. 5 Lakh/MW within 30 days from date of issue of Letter of Award.

The Bank Guarantees against EMD shall be returned to the selected RPG on submission of valid PBGs. The selected RPGs are required to sign PPA with the DISCOM in line with the timeline given in the Guidelines. In case, the selected RPG fails to execute the PPA within the stipulated time period, the Bank Guarantee equivalent to EMD shall be en-cashed by DISCOM as penalty. In case any bidder is not selected, DISCOM shall release the EMD within 15 days of the date of issue of LoA to selected RPG(s). The PBGs shall be valid for a period of 12 months from the date of issue of LoA for the REPP. The PBG will be returned to the RPG immediately after successful commissioning of solar power plant, after taking into account any penalties due to delay in commissioning as per provisions stipulated in the Guidelines.

h. Commissioning

The selected RPG shall commission the solar power plant within nine months from date of issuance of LoA. The RPG may commission the REPP during this period of nine months and the DISCOM is obliged to purchase power from that commissioned REPP any time after the issuance of LoA. A duly constituted Committee of DISCOM officials will physically inspect the Plant in not more than 03 days from the date of receiving a call from the RPG and certify successful commissioning of the plant. In case any RPG fails to achieve this milestone, DISCOM shall encash the Performance Bank Guarantee (PBG) in the following manner:

- a. Delay up to two months - The PBG on per day basis and proportionate to the balance capacity not commissioned.
- b. In case the commissioning of the solar power plant is delayed over two months, the PPA capacity shall stand reduced / amended to the Project capacity commissioned at the end of 11th month from date of issuance of Letter of Award.

In case of delays of plant commissioning due to the reasons beyond the control of the RPG, DISCOM after having been satisfied with documentary evidences produced by the RPG for the purpose, can extend the time for commissioning date without any financial implications to the RPG.

i. Shortfall in minimum generation

During PPA, if for any year, it is found that the RPG has not been able to generate minimum energy corresponding to CUF of 15% or as prescribed by DISCOMs; such shortfall in performance shall make RPG liable to pay the compensation as provided in the PPA to the DISCOM. This will, however be relaxable to the extent of grid non-availability for evacuation, which is beyond the control of the RPG. Further, this compensation shall not be applicable in

events of Force Majeure identified under PPA with Discom affecting supply of solar power by RPG.

j. Commercial Operation Date (COD)

The Commercial Operation Date (COD) shall be considered as the actual date of commissioning of the solar power plant as declared by the Commissioning Committee.

k. Release of PBI to DISCOM

DISCOM would be eligible to get PBI @ Rs. 0.40 per unit purchased or Rs. 6.6 lakh per MW of capacity installed, whichever is less, for a period of five years from the COD. However, to avail the PBI, DISCOM shall submit following documents after completion of one year from the COD and every year thereafter till five years:

- Timely payment of monthly lease rent, if applicable, to the land owner of the project.
- Monthly units purchased from the plant and corresponding payment made to the project developer.

Applicable PBI would be released to the DISCOM after submission of these documents by DISCOM to MNRE.

B. Roles and responsibilities of stakeholders:

(i) Ministry of New and Renewable Energy:

MNRE shall allocate initial capacity of 1000 MW for Pilot Project to DISCOMs based on their demand and readiness for implementation. Pilot projects will be continuously monitored during implementation and also on completion to evaluate their success and a detailed report will be prepared for recommending further scaling up of the capacity under this component. Such evaluation may be done internally or through external agency as per decision of the MNRE.

Ministry will issue Model PPA and model Lease Agreement for implementation of the scheme.

MNRE will provide 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 total PBI that shall be payable to DISCOMs will be Rs. 33 Lakh per MW.

(ii) DISCOMs:

The DISCOMs shall have to send their demand for sanction under the scheme along with details on their readiness to implement the component A of the scheme.

The concerned DISCOM shall declare the renewable power capacity that can be connected to a 33/11 kV sub-station and carry-out the procedure for selection of RPG. On selection of RPG, DISCOMs shall issue the LoA and sign PPA with RPG. DISCOMs will provide connectivity at the sub-station to the selected RPG. 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.

In case, RPG has taken land from a farmer/group of farmers on lease for the project, the amount of monthly lease rent would be paid by the DISCOMs to the lessor directly in his/her bank account before 5th day of the month following the month for which the lease rent is due. In such a case, the lease rent paid by the DISCOM will be deducted from monthly payment due to the RPG.

(iii) State Nodal Agency (SNA):

State Nodal Agency (SNA) 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 settlement of any issues arising during selection of solar/ other renewable energy based power plants and their implementation, a State level Committee under the chairmanship of Principal Secretary (Renewable Energy/Energy) will be setup by the participating State/UT and SNA of that State 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.

(iv) Renewable Power Generator (RPG):

Individual farmers/ group of farmers/ cooperatives/ panchayats/ Farmer Producer Organisations (FPO) /Water User associations (WUA) or projects developer would be the RPG. They have to participate in the selection process to be carried out by DISCOMS. In case of selection, they have to sign PPA and install the plant as per provisions of these guidelines and applicable rules and regulations.

II. Component B: Installation of 17.50 Lakh Stand-alone Solar Pumps

Under this Component, individual farmers will be supported to install standalone solar Agriculture pumps of capacity up to 7.5 HP for replacement of existing diesel Agriculture pumps / irrigation systems in off-grid areas, where grid supply is not available. Installation of new pumps shall also be permitted under this scheme except in dark zone areas. 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. Water User Associations and community/cluster based irrigation system will also be covered under this component. However, priority would be given to small and marginal farmers. In order to minimize the water usage for irrigation purpose, preference will be given to the farmers using Micro irrigation systems or covered under Micro irrigation schemes or who opt for micro irrigation system. The size of pump would be selected on the basis of water table in the area, land covered and quantity of water required for irrigation.

Solar PV capacity in kW for the pump capacity in HP will be allowed as per MNRE specifications under the scheme It will be mandatory to use indigenously manufactured solar panels with indigenous solar cells and modules. Further, the motor-pump-set, controller and balance of system should also be manufactured indigenously. The vendor has to declare the list of imported components used in the manufacturing of solar water pumping system.

CFA of 30% of the benchmark cost or the tender cost, whichever is lower, of the stand-alone solar Agriculture pump will be provided. The State Government will give a subsidy of 30%; and the remaining 40% will be provided by the farmer. Bank finance may be made available for farmer's contribution, so that farmer has to initially pay only 10% of the cost and remaining up to 30% of the cost as loan. In case the State Government provides subsidy more than 30%, the beneficiary share will reduce accordingly.

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 subsidy of 30%; and the remaining 20% will be provided by the farmer. Bank finance may be made available for farmer's contribution, so that farmer has to initially pay only 10% of the cost and remaining up to 10% of the cost as loan. In case the State Government provides subsidy more than 30%, the beneficiary share will reduce accordingly.

New Solar Agriculture 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 provided they use micro irrigation techniques to save water.

Possibilities would be explored by implementing agencies for convergence of present scheme with schemes on promotion of micro irrigation system and replacement of agriculture pumps with energy efficient pumps and they may work out the modalities in coordination with respective Ministries/Departments.

Further, whenever the grid reaches in the off-grid area, the stand alone Solar Agriculture Pumps can be connected to the grid to feed surplus power depending on grid capacity. DISCOMs may purchase this surplus power from the farmer at the rate decided by the respective State/SFRC.

DISCOMs/ Agricultural Department/ Minor Irrigation Department / any other Department designated by State Government will be the implementing agencies for this component. 2% of the eligible CFA will be provided as service charges in totality to all the agencies involved in implementation including the designated State Implementing Agency. Part of service charges (to be decided by MNRE) shall be given to the central agency for centralised tendering. Additionally, some part of the service charge may also be retained by MNRE for nation-wide centralized IEC activities.

a. Allocation and procurement of pumps

State-wise allocation of solar pumps will be issued by MNRE once in a year or as and when required, after approval by a Screening Committee under the chairmanship of Secretary, MNRE. Much before the start of every financial year during the Scheme tenure, MNRE will call for submission of demand from the implementation agencies. Based on overall target for the year and the demand received from implementation agencies, MNRE will allocate quantity of pumps to the implementation agencies in the States. On acceptance of the allocated quantity by the implementation agencies and submission of detailed proposal as per MNRE format, within a given time period, final sanction will be issued by MNRE. MNRE will have the discretion to amend the sanction any time of the year after ascertaining the pace of progress in any particular state, or as per requirements of the scheme.

Implementing agencies will submit proposals through online portal to MNRE for approval. Offline proposals will not be accepted, unless MNRE has given a general exemption from the requirement of online submission to any agency for any specific period of time.

Proposals for new installations will only be considered by the Screening Committee. Proposals wherein the systems have already been installed/ under installation will not be considered for approval under the Programme by the Screening Committee.

There will be centralized tendering of solar water pumping system through Central PSUs. These CPSUs will carry out tendering process as per Guidelines and standards & specifications issued by MNRE. Any deviation shall normally be not permissible except in specific cases with the approval of Secretary, MNRE.

For centralized tendering the designated CPSUs may come out region-wise/State-wise tenders, however, their role will be limited to selection of bidders and discovery of rates. To ensure quality and post installation services only manufacturers of solar water pumps or controllers or manufacturers of solar panels would be allowed to participate in the bidding process. Normally, three bidders would be selected and they have to match L1 rates and the quantity allocated to those who agree to match the L1 rates they would be 50%, 30%, and 20% of the total tender quantity respectively in the ascending order of rates quoted by them. Number of bidders selected may vary depending upon the tender quantity. The selection of beneficiaries and implementation of scheme would be the responsibility of the State Implementation Agency. Cluster based approach would be used for allocation of districts to the selected bidders to optimize the resources and ensure quality services made available to the farmer. As far as possible contiguous districts would be allotted to the successful bidders, with the total requirements of pumps in the allocated area matching the quantity allotted to them.

Installation of 17.5 lakh Stand-alone Solar Water Agriculture Pumping Systems will create solar PV capacity of over 8000 MW. Since pumps are generally used for 150 days in a year, this capacity can be optimally utilized by using Universal Solar Pump Controller (USPC), through which farmer can use solar power for other activities like operating chaff cutter, floor mill, cold storage, drier, battery charges, etc., and increase his income. Option would be given to the farmer to opt for USPC and additional cost of solar PV pumping system with USPC would be discovered by the tendering agency. The entire additional cost for solar pumping system with USPC would be borne by the farmer. States/UTs may bear this additional cost to facilitate use of solar energy for other activities and increasing the income of farmers.

In all cases, the successful bidder shall provide AMC for five years from the date of installation, real time monitoring, helpline, district level service centres and comply standards of performance in dealing with complaints/redressal mechanism.

The Implementation Agency would also be responsible for carrying out publicity of the scheme so as to increase awareness amongst potential beneficiaries. For this purpose, apart from their own publicity content, they shall also be guided by advice of MNRE on this matter.

b. Installation timeline and Penalties

Projects for installation of solar Agriculture pumps systems shall be completed within 12 months from the date of sanction by MNRE. However, for North Eastern States including Sikkim, Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Lakshadweep and A&N Islands

this time limit will be 15 months from the date of sanction. Extension in project completion timelines, up to a maximum period of three months, will be considered at the level of Group Head in MNRE and upto 6 months at the level of Secretary in MNRE on submission of valid reasons by the implementing agency. However, such extension will attract reduction in service charges to implementing agency as under:

- a. 10% reduction in applicable service charges for delay of more than one month in completion of project.
- b. Further reduction of 10% of service charges for delay of more than two month and up to three months.
- c. Further reduction of 10% of service charges for delay of more than three month and up to six months
- d. No service charges for delay in completion of more than six months.

No extension will be granted beyond six months and only the systems which are installed in all respects and commissioned within stipulated time period will be considered for release of CFA.

c. Release of funds

Funds up to 40% of the applicable CFA for the sanctioned quantity would be released as advance to the implementing agency only after placement of letter of award(s) to the selected vendors. The implementing agencies may pass on this fund to the selected vendors in different stages on achievement of various milestones as per terms and conditions of letter of award(s). Second installment up to 30% of the applicable CFA would be released on submission of UCs and SoE for the first release. The balance eligible CFA along with applicable service charges would be released on acceptance of the Project Completion Report in the prescribed format, Utilization Certificates as per GFR and other related documents by the Ministry.

d. Monitoring and maintenance

Selected vendors shall be responsible for design, supply, installation and commissioning of solar agriculture pumps. Vendors will mandatorily provide AMC for a period of 5 years from the date of commissioning of the systems including insurance coverage for the installed systems against natural calamities and theft. AMC will include inspection by Vendor at least once in a quarter and submission of quarterly inspection report of the installed pumps as per prescribed format. To ensure timely maintenance of the systems the vendor shall have one authorized service centre in each operational district and a helpline in local language in each operational State. Helpline number shall be indicated on the pump/ controller at suitable location easily visible to the user.

All solar Agriculture pumps sanctioned under the Programme shall be provided with remote monitoring system by the vendor. It will be mandatory to submit performance data of solar power plant online to MNRE in the manner and format prescribed by MNRE.

Monitoring of the Scheme and its implementation will be carried out during the period of implementation of the Scheme as is given below:

- i. The implementing agency would be responsible for monitoring parameters such as end-use verification and compilation of statistical information.

- ii. Implementing agencies will submit monthly progress report for the sanctioned projects.
- iii. Funds may be released by implementing agency to the vendor on submission of bank guarantee equivalent to 10% of the cost of systems installed by that vendor for a period of five years. Alternatively, BG may be provided initially for a period of one year which may be extended on year to year basis thereafter.
- iv. The Ministry officials or designated agency may inspect the ongoing installation or installed plants. In case the installed systems are not as per standards, non-functional on account of poor quality of installation, or non-compliance of AMC, the Ministry reserves the right to blacklist the vendor. Blacklisting may inter-alia include the following:
 - a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects.
 - b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted.

e. Responsibilities of Implementation Agency

The Implementing Agencies will be responsible for the following activities:

- i. Demand aggregation for solar Agriculture pumps through online portal.
- ii. Prepare proposal and submit to MNRE for sanction
- iii. Oversee installation of systems.
- iv. Inspection of installed systems and online submission of completion reports to MNRE.
- v. Submission of utilization certificates and audited statement of expenditure through EAT module and disbursement of MNRE CFA.
- vi. Online submission of monthly and quarterly progress reports.
- vii. Ensure project completion within the given timelines and compliance of MNRE Guidelines and Standards.
- viii. Online and offline maintenance for records.
- ix. Real time monitoring through dedicated web-portal
- x. Performance monitoring of installed system through third party
- xi. Ensure compliance of AMC and training of locals by the vendors.
- xii. Carrying out publicity of the scheme so as to increase awareness, for which purpose advice of MNRE may also be adopted apart from its own publicity.
- xiii. Any other activity to ensure successful implementation of the programme.

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 DISCOMs. Water User Associations and community/cluster based irrigation system will also be covered under this component. However, priority would be given to small and marginal farmers. In order to minimize the water usage for irrigation purpose, preference will be given to the farmers using Micro irrigation systems or covered under Micro irrigation schemes or who opt for Micro irrigation systems.

Possibilities would be explored by implementing agencies for convergence of present scheme with schemes on promotion of micro irrigation system and replacement of agriculture pumps with energy efficient pumps and they may work out the modalities in coordination with respective Ministries/Departments.

It will be mandatory to use indigenously manufactured solar panels with indigenous solar cells and modules. Further, the balance of system should also be manufactured indigenously. The vendor has to declare the list of imported components used in the solarisation system.

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 subsidy of 30%; and the remaining 40% will be provided by the farmer. Bank finance may be made available for farmer's contribution, so that farmer has to initially pay only 10% of the cost and remaining up to 30% of the cost as loan. In case the State Government provides subsidy more than 30%, the beneficiary share will reduce accordingly.

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 subsidy of 30%; and the remaining 20% will be provided by the farmer. Bank finance may be made available for farmer's contribution, so that farmer has to initially pay only 10% of the cost and remaining up to 10% of the cost as loan. In case the State Government provides subsidy more than 30%, the beneficiary share will reduce accordingly.

Further, the CFA will be limited to Solar PV capacity up to two times of pump capacity in kW for pumps up to 7.5 HP. 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 in the respective State/UTs. This will help to create an avenue for extra income to the farmers, and for the DISCOMs to meet their RPO targets. The solar power fed in to the grid and solar power utilized by farmer both will be accounted for fulfillment of solar RPO by the DISCOM.

DISCOM may adopt any of the modalities for solarisation of pumps viz, (i) Net-metering: in this case the agriculture pump will continue to run at rated capacity taking power from solar panels and balance power from grid, if required, and in case solar power generation is higher than required by pump, the additional solar power would be fed to the grid; (ii) Pump to run on solar power only: in this case the pump will run from the solar power as in case of stand-alone solar pump and no power will be drawn from the grid for operation of pump. In case solar power generation is higher than required by pump, the additional solar power would be fed to the grid.

DISCOMs /GENCO/ any other Department designated by State Government will be the implementing agencies. 2% of the eligible CFA will be provided as total service charges to all agencies implementing the scheme including the designated State Implementing Agencies. In case of centralised tendering, some percentage/fixed amount out of service charges (to be decided by MNRE) shall be given to the central agency. MNRE may also retain a certain amount from service charge for nation-wide centralised IEC activities.

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 solarized provided they use micro irrigation techniques to save water.

Possibilities would be explored by implementing agencies for convergence of present scheme with schemes on promotion of micro irrigation system and replacement of agriculture pumps with energy efficient pumps and they may work out the modalities in coordination with respective Ministries/Departments.

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.

a. Allocation of solarisation capacity and procurement

State-wise allocation for solarisation of pumps will be issued by MNRE once in a year, after approval by a Screening Committee under the chairmanship of Secretary, MNRE. In the beginning of every financial year during the Scheme tenure, MNRE will call for submission of feeder-wise demand for solarization. Based on overall target for the year and the demand received from implementation agencies, MNRE will allocate solarization capacity to the implementation agencies in the States. On acceptance of the allocated quantity by the implementation agencies and submission of detailed proposal as per MNRE format, with in a given time, final sanction will be issued by MNRE.

As per approval, the component is to be implemented on pilot mode for initial one lakh grid connected agriculture pumps and accordingly, initially this capacity will be allocated by MNRE to implementing agencies based on their demand and readiness for implementation of the component. Pilot projects will be continuously monitored during implementation and also on completion to evaluate the success of pilot run and a detailed report will be prepared for recommending further scaling up of the capacity under this component. Such evaluation may be done internally or through external agency as per decision of the MNRE.

Implementing agencies will submit proposals through online portal to MNRE for approval. Offline proposals will not be accepted, unless MNRE has given a general exemption from the requirement of online submission for any specific period of time.

Proposals for new installations will only be considered by the Screening Committee. Proposals wherein the pumps are already solarized prior to sanction of MNRE will not be considered for approval under the Scheme by the Screening Committee.

MNRE may specify either a centralized tendering of solarisation system through Central PSUs or by the State Implementation Agencies. These CPSUs or State Implementation agencies will carry out tendering process as per the Guidelines, standards and specifications issued by MNRE. Any deviation shall normally be not permissible except in specific cases with the approval of Secretary, MNRE

In case of centralized procurement the designated CPSUs may come out with region-wise/State-wise tenders, however, their role will be limited to selection of bidders. The selection of beneficiaries and implementation of scheme would be the responsibility of the State Implementation Agency.

In all cases, the bids shall require the successful bidder to provide for AMC for five years from the date of installation, helpline, district level service centres and comply standards of performance in dealing with complaints.

The Implementation Agency would also be responsible for carrying out publicity of the scheme so as to increase awareness amongst potential beneficiaries. For this purpose, apart from their own publicity content, they shall also be guided by advice of MNRE on this matter.

b. Installation timeline and Penalties

Projects for solarisation of pumping systems shall be completed within 12 months from the date of sanction by MNRE. However, for North Eastern States including Sikkim, Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Lakshadweep and A&N Islands this time limit will be 15 months from the date of sanction. Extension in project completion timelines, up to a maximum period of three months, will be considered at the level of Group Head in MNRE and upto 6 months at the level of Secretary in MNRE on submission of valid reasons by the implementing agency. However, such extension will attract reduction in service charges to implementing agency as under:

- a. 10% reduction in applicable service charges for delay of more than one month in completion of project.
- b. Further reduction of 10% of service charges for delay of more than two month and up to three months.
- c. Further reduction of 10% of service charges for delay of more than three month and up to six months
- d. No service charges for delay in completion of more than six months.

No extension will be granted beyond six months and only the systems which are installed in all respects and commissioned within stipulated time period will be considered for release of CFA.

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The implementing agencies after submitting proposal to MNRE may choose to start the preparatory activities including tendering process. However, the Letter of Award/Purchase Order shall be placed to the selected vendor(s) only after the issue of sanction letter by MNRE. Further, MNRE will not be responsible for any liabilities arising out of a situation where the proposal is eventually rejected.

c. Release of funds

Funds up to 40% of the applicable CFA for the sanctioned quantity would be released as advance to the implementing agency only after placement of letter of award(s) to the selected vendors. The implementing agencies may pass on this fund to the selected vendors in different stages on achievement of various milestones as per terms and conditions of letter of award(s). Second installment up to 30% of the applicable CFA would be released on submission of UCs and SoE for the first release. The balance eligible CFA along with applicable service charges would be released on acceptance of the Project Completion Report in the prescribed format, Utilization Certificates as per GFR and other related documents by the Ministry.

d. Monitoring and maintenance

Selected vendors shall be responsible for all aspects of solarisation viz., design, supply, installation and commissioning. Vendors will mandatorily provide AMC for a period of 5 years from the date of commissioning of the systems including insurance coverage for the installed systems against natural calamities and theft. AMC will include submission of quarterly inspection report of the installation as per prescribed format. To ensure timely maintenance of the systems the vendor shall have one authorised service centre in each operational district and a helpline in local language in each operational State.

Under the Programme along with solarisation, the vendor shall also provide a remote monitoring system. It will be mandatory to submit quarterly maintenance report along with performance data of solar power plant online to MNRE in a manner and format prescribed by MNRE.

Monitoring of the Scheme and its implementation will be carried out during the period of implementation of the Scheme as is given below:

- i. The implementing agency would be responsible for monitoring parameters such as end-use verification and compilation of statistical information.
- ii. Implementing agencies will submit monthly progress report for the sanctioned projects.
- iii. Funds may be released by implementing agency to the vendor on submission of bank guarantee equivalent to 10% of the cost of systems installed by that vendor for a period of five years. Alternatively, BG may be provided initially for a period of two years which may be extended on year to year basis thereafter.
- iv. The Ministry officials or designated agency may inspect the ongoing installation or installed plants. In case the installed systems are not as per standards, non-functional on account of poor quality of installation, or non-compliance of AMC, the Ministry reserves the right to blacklist the vendor. Blacklisting may inter-alia include the following:

- a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects.
- b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted.

e. Responsibilities of Implementation Agency

The Implementing Agencies will be responsible for the following activities:

- i. Issue additional instructions/ conditions such as minimum solarisation level of feeder.
- ii. Issue connectivity standards/regulations, if required, and facilitate connection to the grid.
- iii. Selection of feeder for solarisation and demand aggregation for solarisation of pumps.
- iv. Prepare proposal and submit to MNRE for sanction
- v. Conduct tendering process as per MNRE guidelines
- vi. Oversee installation of systems.
- vii. Inspection of installed systems and online submission of completion reports to MNRE.
- viii. Disbursement of MNRE CFA and submission of utilization certificates and audited statement of expenditure through EAT module.
- ix. Online submission of monthly and quarterly progress reports.
- x. Ensure project completion within the given timelines and compliance of MNRE Guidelines and Standards.
- xi. Online and offline maintenance for records.
- xii. Real time monitoring through dedicated web-portal
- xiii. Performance monitoring of installed system through third party
- xiv. Ensure compliance of AMC and training of locals by the vendors.
- xv. Carrying out publicity of the scheme so as to increase awareness, for which purpose advice of MNRE may also be adopted apart from its own publicity.
- xvi. Any other activity to ensure successful implementation of the programme.

4. Quality Assurance and Evaluation Mechanism

Systems installed under this Programme should meet technical specification and construction standards as specified by BIS and MNRE from time to time. Non-compliance will be taken seriously to the extent of blacklisting of the vendor, in the same manner as specified, apart from taking action under any other law in force. In case of centralized tendering the CPSUs will be responsible for performance evaluation of the selected vendors. Evaluation of pilot implementation of Component-A and Component-C will be carried out through third party selected for this purpose. In order to ensure, the scheme meets expected outcomes continues evaluation of scheme would be undertaken and mid-course correction, as required, shall be implemented.

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5. 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 Minister, NRE.

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