राष्ट्रीय कृषि और ग्रामीण विकास बैंक

पुनर्वित्त विभाग
प्रधान कार्यालय : बीकेसी, बान्द्रा (पू), मुम्बई - 400 051
टेलि : +91 22 2652 4926 • फैक्स : +91 22 2653 0090
ई-मेल : dor@nabard.org • वेबसाईट : www.nabard.org

NABARD

National Bank for Agriculture and Rural Development

Department of Refinance
Head Office : BKC, Bandra (E), Mumbai - 400 051
Tel. : +91 22 2652 4926 • Fax : +91 22 2653 0090
E-mail : dor@nabard.org • Website : www.nabard.org

संदर्भ सं.राबैं.डीओआर.जीएसएस./3755 / सोलर -1(बी) / 2014-15

परिपत्र सं.252/डीओआर-जीएसएस-60/2014
17 दिसंबर 2014

अध्यक्ष/ प्रबंध निदेशक
सभी वाणिज्य बैंक
सभी क्षेत्रीय ग्रामीण बैंक
राज्य सहकारी बैंक
राज्य सहकारी कृषि और ग्रामीण विकास बैंक

प्रिय महोदय

सिंचाई प्रयोजन के लिए सोलर फोटोवोल्टिक वाटर पंपिंग सिस्टमों के संवर्धन के लिए नव और नवीकरणीय ऊर्जा मंत्रालय (एमएनआरई), भारत सरकार की योजना

कृपया दिनांक 23 जुलाई, 2014 के हमारे परिपत्र सं.131/ डीओआर-जीएसएस-41/ 2014 का संदर्भ लें जो सिंचाई प्रयोजनों के लिए 10,000 सोलर फोटोवोल्टिक वाटर पंपिंग प्रणाली योजना को बढ़ावा देने के लिए है. अब एमएनआरई, भारत सरकार ने संशोधित मानदण्डों के साथ प्रति वर्ष 30,000 सोलर पंपिंग यूनिटों को सहायता प्रदान करने के लिए नई योजना आरंभ की है. जैसा कि इस परिपत्र के साथ संलग्न दिशानिर्देशों में उल्लेख किया गया है, यह योजना 03 नवम्बर, 2014 से प्रभावी है. पहले के योजना इस नई योजना के साथ विलय कर दिया है।

Ref.No.NB.DoR.GSS/3755/Solar-1(B) Pumpsets/ /2014-15

Circular No. 252/DoR-GSS- 60 /2014
17 December 2014

Chairman/Managing Director
All Commercial Banks/ Regional Rural Banks/State Cooperative Banks
State Cooperative Agricultural Rural Development Banks

Dear Sir

The Scheme of Ministry of New and Renewable Energy, GoI for promoting solar photovoltaic water pumping systems for irrigation purpose

Please refer to our Circular No.131/DoR-GSS-41/2014, dated 23 July 2014 on the scheme for promoting 10,000 solar photovoltaic water pumping systems for irrigation purpose. Now MNRE, GoI has launched a new scheme to support 30000 solar pumping units per year with revised parameters which is effective from 3 November 2014 as explained in the guidelines annexed. The earlier scheme is merged with this new scheme.

2. The scheme is credit-linked and the capital subsidy is back-ended. NABARD will play the role of subsidy channelizing agency under the scheme. Release of

2. यह ऋण से जुड़ी हुई पश्च दाय पूंजी सब्सिडी युक्त योजना है. नाबार्ड इस योजना के अंतर्गत चैनलाइजिंग एजेंसी की भूमिका निभाएगा. सब्सिडी जारी करना एमएनआरई, भारत सरकार से निधियों की उपलब्धता के अधीन होगा.	subsidy is subject to availability of funds from MNRE, GoI.
3. जिन परियोजनाओं के लिए 3 नवंबर 2014 अथवा उसके बाद बैंक ऋण मंजूर किया जाता है, वे इस योजना के अंतर्गत सब्सिडी हेतु पात्र होंगी.	3. Projects for which bank loan is sanctioned on or after 3rd November 2014 will be eligible for subsidy under the scheme.
4. इन इकाइयों के लिए 2014-15 हेतु राज्य-वार अनंतिम आबंटन अनुबंध I में दिए जा रहे हैं.	4. The state-wise tentative allocation of these units for 2014-15 are indicated in Annexure-I
5. इस योजना के अंतर्गत सभी वाणिज्य बैंकों, क्षेग्रा बैंकों, राज्य और जिला मध्यवर्ती सहकारी बैंकों, राज्य सहकारी कृषि और ग्रामीण विकास बैंकों (एससीएआरडीबीज़) और नाबार्ड द्वारा (सीधे उधार के अंतर्गत) वित्तपोषित परियोजनाएं सब्सिडी प्राप्त करने हेतु पात्र होंगी.	5. Under this scheme, projects financed by all Commercial Banks, RRBs, State and District Central Cooperative Banks, State Cooperative Agricultural Rural Development Banks (SCARDBs) as also NABARD (under direct lending) will be eligible to receive subsidy.
6. इस योजना के अंतर्गत उन्हीं सोलर सिस्टमों हेतु सब्सिडी उपलब्ध होगी जो एमएनआरई द्वारा तैयार सूची के निर्माताओं/ उद्यमियों से प्राप्त किए जाएंगे. सोलर वाटर पंपिंग कार्यक्रम के लिए इम्पैनल्ड निर्माताओं/ उद्यमियों की सूची एमएनआरई की वेबसाइट पर उपलब्ध है और इसे एमएनआई द्वारा समय-समय पर अपडेट किया जा सकता है.	6. Subsidy under the scheme is available only for solar systems that are procured from MNRE empanelled manufacturers/ entrepreneurs. The list of empanelled manufacturers/ entrepreneurs for solar water pumping programme is available on MNRE website and it may undergo updation from time to time by MNRE.
7. योजना के कार्यान्वयन के लिए कृपया इसकी सूचना अपनी सभी शाखाओं को दें.	7. This may please be brought to the notice of all your branches for implementation of the scheme.
8. राज्य सहकारी बैंक कृपया उक्त योजना के बारे में सभी जिला मध्यवर्ती सहकारी बैंकों को	8. The State Co-operative Banks may please advise all the District Central Cooperative Banks on the above Scheme.

सूचित करें. इसी तरह रासकृग्रावि बैंक इसके बारे में अपनी सम्बद्ध पी.सी.ए.आर.डी.बी को सूचित करें. कृपया पावती दें. भवदीय (एस के बंसल) मुख्य महाप्रबंधक संलग्न-यथोक्त	Similarly SCARDBs may bring this to the notice of their affiliated PCARDBs. Please acknowledge receipt. Yours faithfully (S K Bansal) Chief General Manager Encl : As above

OPERATIONAL GUIDELINES

GUIDELINES FOR CAPITAL SUBSIDY SCHEME OF GOVERNMENT OF INDIA FOR PROMOTING SOLAR PHOTOVOLTAIC (SPV) WATER PUMPING SYSTEMS FOR IRRIGATION PURPOSE

1. Objectives

1.1 Due to lack of grid-connected electricity in many parts of the country, a large number of diesel pump sets are being used for the purpose of irrigation. The operating cost of diesel pump sets is increasing day by day. The Solar Photovoltaic Water Pumping Systems can easily meet the irrigation requirements of land holdings for small and marginal farmers. These systems would help farmers to avoid travelling long distances for procuring and transporting diesel as also increasing the cropping intensity. Hence, Govt. of India has launched a programme for promoting 30000 solar pumping systems per year in the country for the purpose of irrigation. State wise targets envisaged under the scheme is indicated at **Annexure I.**

1.2 The scheme involves provision of loans by Commercial Banks, RRBs, State and District Central Cooperative Banks, SCARDBs and NABARD (under direct lending) for installation of Solar PV Pumping systems for the purpose of irrigation and capital subsidy will be provided for the same.

2. Implementation Period

The scheme is effective from 3 November 2014. Accordingly, loans sanctioned by agencies as indicated at 1.2 above from 3 November 2014 are eligible for subsidy.

3. Technical Specifications and maximum Admissible Subsidy

3.1 A SPV water pumping system consists of PV array, a DC/AC surface mounted/submersible/floating motor pump set, electronics, if any, interconnect cables and an 'on-off' switch. PV array is mounted on a suitable structure with provision of tracking. Electronics could include Maximum Power Point Tracker (MPPT), Inverter and Control/Protections. Technical Specifications for solar water pumping systems are given in **Annexure II, (II A to II D).**

3.2 The complete SPV water pumping system will have to qualify the specifications laid down by MNRE from time to time that is notified on MNRE website: www.mnre.gov.in.

3.3 Solar pumping system upto 10 HP are eligible for subsidy under the scheme. The applicable subsidy structure is indicated in **Annexure III.**

3.4 Only manufacturers/entrepreneurs empanelled by MNRE, GoI (displayed in website of MNRE, GoI at www.mnre.gov.in) can participate in the scheme. The empanelled manufacturer/entrepreneur will raise the invoices for the supplied products. The invoices generated by their dealers will not be eligible for subsidy. Further, the manufacturer has to give an undertaking (in the prescribed format - **Annexure IV**) with the invoice that systems offered meet the technical standards / requirements specified by MNRE, GoI.

3.5 MNRE will undertake revision in the rate/quantum of subsidy from time to time based on the feedback received from NABARD, banks and manufacturers.

4. Location of the unit

The installation of the Solar Photovoltaic Water Pumping Systems is for the purpose of irrigation. The units can be located in rural or urban areas.

5. Pattern of Assistance

5.1 The pattern of assistance will be in the form of capital subsidy at rates indicated in Annexure-III.

5.2 Additional assistance for the same project from State Governments in the form of capital subsidy, interest subvention etc. is allowed. However state Governments are required to directly enter into suitable arrangement with financing banks for such types of additional assistance.

5.3 Release of subsidy is subject to the norms as indicated at paragraph 3 above.

5.4 The subsidy will be the same for all categories of borrowers throughout the country.

6. Margin

6.1 Banks have to ensure that beneficiary contributes a minimum margin of 20% of the Total Financial Outlay (TFO). If the margin is less than 20% of the TFO, the project will not be eligible for assistance under the scheme.

The Total Financial Outlay(TFO) is inclusive of installation, commissioning, transportation, insurance, 5 year operation and maintenance charges and taxes wherever applicable.

7. Security

Banks may follow RBI guidelines in this regard.

8. Insurance

Banks should ensure that the units are insured. The insurance premium may also be included in the TFO.

9. Eligible Institutions

Under the scheme, projects financed by all Commercial Banks, RRBs, State and District Central Cooperative Banks, SCARDBs as also NABARD (under direct lending) will be eligible to receive subsidy.

10. Eligible Borrowers

Individuals, group of individuals, SHGs, JLGs, NGOs, Farmers' Clubs and Farmers Producers Organisation will be eligible for subsidy. However, Private/Public Limited Companies/ Corporates are not eligible.

11. Release of subsidy

11.1 The eligible borrowers shall apply to the banks for sanction of loan for the project. The bank shall appraise the project as per the norms and if found eligible, sanction the loan excluding the margin, subject to technical feasibility and financial viability.

11.2 Based on the field visit and after satisfactory installation of the unit, the bank shall arrange to make payment directly to the supplier.

11.3 After sanction of the loan including subsidy and after disbursement of loan, the bank shall approach NABARD for capital subsidy in the specified format (**Annexure V**).

NABARD will sanction and release subsidy subject to the admissibility of the claim and availability of funds from Government of India.

11.4 As in the case of other Govt. Sponsored Schemes, the subsidy would be credited to the "Subsidy Reserve Fund Account" of the borrower. No interest shall be charged by the bank on the subsidy component. Subsidy will be back ended. Hence it is adjusted against final instalments provided the borrower has repaid the remaining instalments.

11.5 There would be a minimum lock in period of 3 years and hence, if the loan is repaid before three years, the borrower will not be eligible for subsidy.

11.6 MNRE, GoI would place funds in advance with NABARD for release of subsidy to Banks.

12. Interest Rate

The loans extended by the banks would carry the rate of interest as per RBI / bank norms.

13. Repayment period

Repayment period will be for 10 years.

14. Misutilization of subsidy and NPA

In case the unit is found to be incomplete or the subsidy is misutilized, Bank shall arrange to recall the subsidy and refund the same to NABARD. In the event of loans becoming NPA, beneficiary will not be eligible for subsidy and the same will have to be refunded to NABARD.

15. Utilization Certificate

Banks have to submit the consolidated utilization certificates for capital subsidy in the format indicated in **Annexure VI**. Banks have to submit the utilization certificate to NABARD within 3 months from the date of receipt of subsidy.

16. Data / Information

Although the rate of subsidy is uniform for all categories of borrowers, banks may maintain separate data relating to loans disbursed to SC/ST/women/Minority Community, physically handicapped, etc. Banks will maintain the beneficiary list with complete address and contact details and list would be put on Banks's website with capacity of installed system and total cost of pump.

17. Monitoring

The progress under the scheme will be reviewed by NABARD Regional Offices at State Level on quarterly basis and by NABARD Head Office/MNRE at National Level on regular basis. MNRE, GoI/NABARD may also undertake visits to the units on sample basis for assessing quality of implementation of the scheme.

18. Refinance

Loans disbursed under the Scheme will be eligible for refinance as per refinance policy of NABARD.

Annexure-I

The Scheme of Ministry of New and Renewable Energy, GoI for promoting solar photovoltaic water pumping systems for irrigation purpose

Tentative Targets : 2014-15

Sr	Name of the State	Target (Physical Units)
1	Andaman & Nicobar Islands	60
2	Andhra Pradesh	3000
3	Assam	750
4	Bihar	1350
5	Chhattisgarh	600
6	Gujarat	600
7	Goa	30
8	Haryana	900
9	Himachal Pradesh	75
10	Jharkhand	150
11	Karnataka	1200
12	Kerala	600
13	Madhya Pradesh	850
14	Maharashtra	600
15	Odisha	750
16	Punjab	2000
17	Rajasthan	4800
18	Tamil Nadu	2400
19	Uttar Pradesh	6600
20	Uttarakhand	750
21	West Bengal	1500
22	Sikkim	30
23	Nagaland	30
24	Tripura	150
25	Arunachal Pradesh	30
26	Meghalaya	30
27	Manipur	45
28	Mizoram	30
29	Jammu & Kashmir	90
	Total	**30000**

Note: The targets for the above states for the year 2014-15 may undergo reallocation during the period of implementation based on the achievements.

Annexure-II

The Scheme of Ministry of New and Renewable Energy, GoI for promoting solar photovoltaic water pumping systems for irrigation purpose

SOLAR PHOTOVOLTAIC WATER PUMPING SYSTEMS - Technical specifications

I. INTRODUCTION

A solar photovoltaic (SPV) water pumping system consists of:

- PV array :
  a. Capacity in the range of 200 Watt to 5 KWp.
  b. Should be mounted on a suitable structure with a provision of tracking the sun
- Motor Pump Set (Surface or submersible) :
  - D.C. Motor Pump Set (with Brushes or Brush less D.C.)

  OR
  - A.C. Induction Motor Pump Set with a suitable Inverter
- Electronics:
  - Maximum Power Point Tracker (MPPT)
  - Controls / Protections.
- Interconnect Cables and "On-Off" switch.

II. PERFORMANCE SPECIFICATIONS AND REQUIREMENTS (DUTY CYCLE)

Solar PV Water Pumps with PV array capacity in the range of 200 Watt to 5 KWp could be installed on a suitable bore-well, open well, Water Reservoir, Water stream, etc.

Under the "Average Daily Solar Radiation" condition of 7.15 KWh/ sq.m. on the surface of PV array (i.e. coplanar with the PV Modules), the minimum water output from a Solar PV Water Pumping System at different "Total Dynamic Heads" should be as specified below.

For D.C. Motor Pump Set with Brushes or Brush Less D.C.(B.L.D.C.):

(i) 100 liters of water per watt peak of PV array, from a Total Dynamic Head of 10 metres (Suction head, if applicable, minimum of 7 metres) and with the shut off head being at least 12 metres.

(ii) 55 liters of water per watt peak of PV array, from a Total Dynamic Head of 20 metres (Suction head, if applicable, up to a maximum of 7 metres) and with the shut off head being at least 25 metres.

(iii) 35 liters of water per watt peak of PV array, from a Total Dynamic Head of 30 metres and the shut off head being at least 45 metres.

(iv) 21 liters of water per watt peak of PV array, from a Total Dynamic Head of 50 metres and the shut off head being at least 70 metres.

(v) 14 liters of water per watt peak of PV array, from a Total Dynamic Head of 70 metres and the shut off head being at least 100 metres.

The actual duration of pumping of water on a particular day and the quantity of

water pumped could vary depending on the solar intensity, location, season, etc.

Indicative performance specifications for the Shallow and Deep well SPV Water Pumping Systems are given in the Annexure IIA and IIB.

For A.C. Induction Motor Pump Set with a suitable Inverter :

(i) 90 liters of water per watt peak of PV array, from a Total Dynamic Head of 10 metres (Suction head, if applicable, minimum of 7 metres) and with the shut off head being at least 12 metres.

(ii) 50 liters of water per watt peak of PV array, from a Total Dynamic Head of 20 metres (Suction head, if applicable, up to a maximum of 7 metres) and with the shut off head being at least 25 metres.

(iii)32 liters of water per watt peak of PV array, from a Total Dynamic Head of 30 metres and the shut off head being at least 45 metres.

(iv) 19 liters of water per watt peak of PV array, from a Total Dynamic Head of 50 metres and the shut off head being at least 70 metres.

(v) 13 liters of water per watt peak of PV array, from a Total Dynamic Head of 70 metres and the shut off head being at least 100 metres

The actual duration of pumping of water on a particular day and the quantity of water pumped could vary depending on the solar intensity, location, season, etc.

Indicative performance specifications for the Shallow and Deep well SPV Water Pumping Systems are given in the Annexure IIC and IID.

III. PV ARRAY

The SPV water pumping system should be operated with a PV array capacity in the range of 200 Watts peak to 5000 Watts peak, measured under Standard Test Conditions (STC). Sufficient number of modules in series and parallel could be used to obtain the required PV array power output. The power output of individual PV modules used in the PV array, under STC, should be a minimum of 74 Watts peak, with adequate provision for measurement tolerances. Use of PV modules with higher power output is preferred.

Indigenously produced PV module (s) containing mono/ multi crystalline silicon solar cells should be used in the PV array for the SPV Water Pumping systems.

- Modules supplied with the SPV water pumping systems should have certificate as per IEC 61215 specifications or equivalent National or International Standards.
- Modules must qualify to IEC 61730 Part I and II for safety qualification testing.
- The efficiency of the PV modules should be minimum 14% and fill factor should be more than 70%.
- The terminal box on the module should have a provision for "Opening" for replacing the cable, if required.
- There should be a Name Plate fixed inside the module which will give:
  c. Name of the Manufacturer or Distinctive Logo.

d. Model Number
e. Serial Number
f. Year of manufacture

IV. MOTOR PUMP-SET

The SPV water pumping systems may use any of the following types of motor pump sets:

1. Surface mounted motor pump-set
2. Submersible motor pump set
3. Floating motor pump set
4. Any other type of motor pump set after approval from Test Centers of the Ministry.

The "**Motor Pump Set" should have a capacity in the range of 0.2 HP to 5 HP** and should have the following features:

- The mono block DC/AC centrifugal motor pump set has its driving unit and impeller mounted on a common shaft, thereby giving it a perfect alignment. The pump should be provided with specially developed mechanical seals which ensure zero leakage.
- The motor is of 1-5 HP having spring loaded carbon brushes in case of D.C. Motor Pump Sets. The suction and delivery head will depend on the site specific condition of the field.
- Submersible pumps could also be used according to the technical need of the particular case.
- The suction/ delivery pipe (GI/HDPE), electric cables, floating assembly, civil work and other fittings required to install the system.
- The following details should be marked indelibly on the motor pump set:
  a) Name of the Manufacturer or Distinctive Logo.
  b) Model Number.
  c) Serial Number.

V. MOUNTING STRUCTURES and TRACKING SYSTEM

The PV modules should be mounted on metallic structures of adequate strength and appropriate design, which can withstand load of modules and high wind velocities up to 150 km per hour. The support structure used in the pumping system should be hot dip galvanized iron with minimum 80 micron thickness.

To enhance the performance of SPV water pumping systems, manual or passive or auto tracking system **must** be used. For manual tracking, arrangement for seasonal tilt angle adjustment and three times manual tracking in a day should be provided.

VI. ELECTRONICS AND PROTECTIONS

- Maximum Power Point Tracker (MPPT) should be included to optimally use the Solar panel and maximize the water discharge.
- Inverter could be used, if required, to operate an A.C. Pump.
- Adequate protections should be incorporated against dry operation of motor pump set, lightning, hails and storms. Full protection against open circuit, accidental short circuit and reverse polarity should be provided.

VII. ON/OFF SWITCH

A good reliable switch suitable for DC / AC use is to be provided with the motor pump set. Sufficient length of cable should be provided for inter-connection between the PV array and the motor pump set.

VIII. PERFORMANCE SPECIFICATIONS AND WARRANTY

Solar PV Water Pumps with PV module capacity in the range of 200 Watt to 5 KWp may be installed on a suitable bore-well / open well / Water Reservoir / Water stream etc. Indicative Performance Specifications for the Shallow and Deep well SPV Water Pumping Systems are given in the Annexure IIA to IID.

The PV Modules must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. The whole system including submersible/ surface pumps shall be warranted for 5 years. Required Spares for trouble free operation during the Warranty period should be provided along with the system.

IX. OPERATION AND MAINTENANCE MANUAL

An Operation and Maintenance Manual, in English and the local language, should be provided with the solar PV pumping system. The Manual should have information about solar energy, photovoltaic, modules, DC/AC motor pump set, tracking system, mounting structures, electronics and switches. It should also have clear instructions about mounting of PV module, DO's and DONT's and on regular maintenance and Trouble Shooting of the pumping system. Name and address of the person or Centre to be contacted in case of failure or complaint should also be provided. A warranty card for the modules and the motor pump set should also be provided to the beneficiary.

X. NOTES

i. Wherever the "Water table" or the level of water in the reservoir or the water source (e.g. Diggie) from which the water is to be pumped, is within 10 metres depth, "Surface Motor Pump sets" should be preferred.

ii. The type of pump set used must match the total dynamic head requirement of the site (i.e. the location at which it is installed). Moreover, it should be appropriately tested and certified by the authorized test centres of the Ministry to meet the performance and water discharge norms specified in section II above.

iii. The beneficiary may select an appropriate Model (i. e. Capacity of PV Array and Type of Motor Pump Set) as per site requirement.

iv. These are the specification for pumps upto 5 HP only, if any supplier wants to supply pump above 5HP-10HP. He must get a test report from MNRE accredited test labs according suppliers specifications.

ANNEXURE II A

Indicative Technical Specifications of Shallow Well (Surface) Solar Pumping Systems With D.C. Motor Pump Set with Brushes or Brush Less D.C.(B.L.D.C.)

Description	Model-I	Model-II	Model-III
PV array	900 Wp	1800 Wp	2700 Wp
Motor capacity	1 HP	2 HP	3 HP
Shut Off Dynamic Head	12 metres	15 metres	25metres
Module mounting structure	MS hot dipped galvanised, at least three times manual tracking facilities	MS hot dipped galvanised, at least three times manual tracking facilities	MS hot dipped galvanised, at least three times manual tracking facilities
Water Output*	90,000 litres per day from a total head of 10 metres	180,000 litres per day from a total head of 10 metres	148,000 litres per day from a total head of 20 metres

* Water output figures are on a clear sunny day with three times tracking of SPV panel, under the "Average Daily Solar Radiation" condition of **7.15 KWh/ sq.m. on the** surface **of PV array (i.e. coplanar with the PV Modules).**

Notes:

1. Suction head, if applicable, minimum 7 metres.
2. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause II. (i.e. performance specifications and requirements) specified earlier.
3. If submersible pumps are used in lieu of surface pumps, the water output must match that of the surface pumps as specified in this table.

Annexure IIB

Indicative Technical Specifications of Solar Deep well (submersible) Pumping Systems: With D.C. Motor Pump Set with Brushes or Brush Less D.C.(B.L.D.C.)

Description	Model I	Model II	Model III	Model IV
PV array	1200 Wp	1800 Wp	3000 Wp	4800 Wp
Motor pump set type	Submersible with electronic controller	Submersible with electronic controller	Submersible with electronic controller	Submersible with electronic controller
Max. total dynamic head	45 Metres	45 metres	70 Metres	70 Metres
Module mounting structure	MS hot dipped galvanised, three times manual tracking facilities	MS hot dipped galvanised, three times manual tracking facilities	MS hot dipped galvanised, three times manual tracking facilities	MS hot dipped galvanised, three times manual tracking facilities
Water Output*	42,000 Litres per day from a total head of 30 mtrs	63,000 litres per day from a total head of 30 mtrs	63,000 litres per day from a total head of 50 mtrs	1,00,000 litres per day from a total head of 50 mtrs

* Water output figures are on a clear sunny day with three times tracking of SPV panel, under the "Average Daily Solar Radiation" condition of **7.15 KWh/ sq.m. on the** surface **of PV array (i.e. coplanar with the PV Modules).**

Notes:

1. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause II. (i.e. performance specifications and requirements) specified earlier.

2. If surface pumps are used in lieu of submersible pumps, the water output must match that of the submersible pumps as specified in this table.

ANNEXURE IIC

Indicative Technical Specifications of Shallow Well (Surface) Solar Pumping Systems With A.C. Induction Motor Pump Set and a suitable Inverter:

Description	Model-I	Model-II	Model-III
PV array	900 Wp	1800 Wp	2700 Wp
Motor capacity	1 HP	2 HP	3 HP
Shut Off Dynamic Head	12 metres	15 metres	25 metres
Module mounting structure	MS hot dipped galvanised, at least three times manual tracking facilities	MS hot dipped galvanised, at least three times manual tracking facilities	MS hot dipped galvanised, at least three times manual tracking facilities
Water Output*	81,000 litres per day from a total head of 10 metres	162,000 litres per day from a total head of 10 metres	135,000 litres per day from a total head of 20 metres

* Water output figures are on a clear sunny day with three times tracking of SPV panel, under the "Average Daily Solar Radiation" condition of 7.15 KWh/ sq.m. on the surface of PV array (i.e. coplanar with the PV Modules).

Notes:

1. Suction head, if applicable,should be minimum 7 metres.
2. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause II. (i.e. performance specifications and requirements) specified earlier.
3. If submersible pumps are used in lieu of surface pumps, the water output must match that of the surface pumps as specified in this table.

Annexure II D

Indicative Technical Specifications of Solar Deep well (submersible) Pumping Systems: With A.C. Induction Motor Pump Set and a suitable Inverter:

Description	Model I	Model II	Model III	Model IV
PV array	1200 Wp	1800 Wp	3000 Wp	4800 Wp
Motor pump set type	Submersible with electronic controller	Submersible with electronic controller	Submersible with electronic controller	Submersible with electronic controller
Max. total dynamic head	45 Metres	45 metres	70 Metres	70 Metres
Module mounting structure	MS hot dipped galvanised, three times manual tracking facilities	MS hot dipped galvanised, three times manual tracking facilities	MS hot dipped galvanised, three times manual tracking facilities	MS hot dipped galvanised, three times manual tracking facilities
Water Output*	38,000 Litres per day from a total head of 30 mtrs	57,000 litres per day from a total head of 30 mtrs	57,000 litres per day from a total head of 50 mtrs	91,000 litres per day from a total head of 50 mtrs

* Water output figures are on a clear sunny day with three times tracking of SPV panel, under the "Average Daily Solar Radiation" condition of **7.15 KWh/ sq.m. on the** surface **of PV array (i.e. coplanar with the PV Modules).**

Notes:

1. For higher or lower head / PV capacity, or in between various models; water output could be decided as per the clause II. (i.e. performance specifications and requirements) specified earlier.

2. If surface pumps are used in lieu of submersible pumps, the water output must match that of the submersible pumps as specified in this table.

Annexure-III

The Scheme of Ministry of New and Renewable Energy, GoI for promoting solar photovoltaic water pumping systems for irrigation purpose

- Pattern of Capital subsidy

Sr	SPV System	Capacity	Maximum subsidy (` Per HP)
1	DC Pumps	Upto 2 HP	57600
		>2 HP to 5 HP	54000
2	AC Pumps	Upto 2 HP	50400
		>2 HP to 5 HP	43200
3. For pumps >5HP-10 HP, subsidy amount is fixed at Rs.194,400/- per pump			

Note :

1. Minimum solar PV Capacity per HP of Motor- pump set is 900 Wp (e.g. for a two HP Motor- pump set, Minimum solar PV Capacity is 1800 Wp and so on).

2. All components and sub systems of the plant should conform to the "Minimal Technical Requirements / Standards" specified by MNRE, for SPV systems / plants.

3. The Capital Subsidy is applicable on the System cost inclusive of installation, commissioning, transportation, insurance, 5 year maintenance and taxes wherever applicable.

Annexure-IV

The Scheme of Ministry of New and Renewable Energy, GoI for promoting solar photovoltaic water pumping systems for irrigation purpose

(On the letterhead of the empanelled manufacturer / entrepreneur)

PROFORMA FOR DECLARATION BY THE AGENCY

SUPPLYING THE SOLAR PV WATER PUMPING SYSTEMS

It is certified that I/we have read the guidelines issued by the Ministry of New and Renewable Energy, Govt. of India / NABARD and the related provisions/terms and conditions for supplying / installing the solar PV water pumping systems under the scheme of Ministry of New and Renewable Energy, GoI and I/we agree to abide by these guidelines and related terms and conditions.

I/we confirm that the proposed solar PV water pumping system(s) for which subsidy is being claimed have not been installed/supplied earlier.

A detailed site survey has been done/or will be undertaken to identify the beneficiary before actual supply and installation takes place.

This is to certify that the various components of the SPV water pumping systems will conform to the Relevant Standards, as specified by MNRE, GoI.

Copy of test certificate for pumping system approved by MNRE accredited test lab is enclosed. Copies of the Relevant IEC/ BIS Certificates are enclosed.

We have complied with the terms and conditions stipulated by the financing bank / NABARD / MNRE under the scheme. We agree to furnish additional information, if any, required by the bank, NABARD / MNRE as and when requested.

Signature _____
Name & Designation of
Authorized Signatory

Address of the Manufacturer/Entrepreneur
Seal
Place:
Date:

ANNEXURE V

The Scheme of Ministry of New and Renewable Energy, GoI for promoting solar photovoltaic water pumping systems for irrigation purpose - Subsidy Claim format (to be used by the financing Bank)

1. Name of the Bank:
2. District: .....
3. State:.....
4. Bank Loan :
   (a) Period of sanction - from: ..... to:.....
   (b) Period of disbursement - from: ..... to: .....

Sr.	Particulars	Solar Pumping system with DC pumps			Solar Pumping system with AC pumps			Total
		Up to 2 HP	> 2 HP to 5 HP	> 5 HP to 10 HP	Up to 2 HP	> 2 HP to 5 HP	> 5 HP to 10 HP	
1	Individuals							
2	Groups							
of 1	Category of individuals							
1a	- SC							
1b	- ST							
1c	- OBC							
1d	- Minority Community							
1e	- Physically Handicapped							
Of 1+ 2	No. of Females (out of the total)							
	Total cost							
4	Capital Subsidy eligible (₹.)							
5	Loan Amount excluding capital subsidy (₹.)							
6	Margin Money (₹.)							

Manufacturer/Entrepreneur-wise details of the above claims:

Sr	Name of the Manufacturer/ Entrepreneur	HP of Pumpset	Nos of Systems	Total cost (₹.)

Certified that:

1. The project(s) has/have been appraised and found to be technically feasible and financially viable.

2. All the terms and conditions stipulated under the scheme by MNRE and NABARD are complied with.

3. We have not applied earlier for capital subsidy covered under this claim.

4. We agree to credit the subsidy amount on receipt of the same from NABARD, to the Subsidy Reserve Fund Account of Beneficiary, only after a spot visit and finding that the installation is functioning satisfactorily.

5. We have obtained manufacturer's/entrepreneur's undertaking with the invoice that the system offered meets the Technical requirements/standards of the MNRE guidelines.

6. The loan being extended has a minimum lock in period of 3 years from the date of disbursement of the first instalment of the loan.

7. We agree to refund the capital subsidy to NABARD, if the installation is not complete / if the subsidy is found misutilised/accounts become NPA.

8. Capital subsidy amount of ₹..... (Rupees .....) may be released to our bank.

(Signature of the authorized officer of the Bank)
Date and Seal of the Bank

ANNEXURE VI

The **Scheme of Ministry** of New and Renewable Energy, **GoI for** promoting solar photovoltaic water pumping systems for irrigation purpose

Format of Utilization Certificate

(For the use of financing bank to be submitted to the Regional Office of NABARD)

1. Name of the Bank:

2. Subsidy received from NABARD (Date & Amount): Units: Date: Amount:₹.

3. Subsidy utilised: Units: Amount: ₹.

This is to certify that the amount of capital subsidy received from NABARD has been fully utilised as per the terms and conditions of the project/MNRE/NABARD and as per the guidelines of the scheme.

Place:

Date:

(_____)

Seal & Signature of Authorised Signatory
(Financing bank)
