

F.No. W-11044/02/2012-Water-II
Government of India
Ministry of Drinking Water and Sanitation

Parvavaran Bhawan
CG O Complex , Lodhi Road,
New Delhi – 110003

Dated : 14.10.2014

To
The State Secretaries/ Principal Secretaries
In-charge of Rural Water Supply/PHED of all States.

Subject: -SOLAR ENGERGY BASED DUAL PUMP PIPED WATER SUPPLY SCHEME – REG.

Sir/Madam,

The Government of India is focusing on provision of piped water supply in rural areas in the 12th Five Year Plan Period. It is seen that the drinking water supply infrastructure in tribal and inaccessible habitations are not functional due to non-availability of electricity and thus, extra efforts need to be made to improve piped water coverage in these areas.

2. The Government of India has implemented successfully an innovative scheme in IAP districts in 2013-14 in which a single phased 1 Hp Solar Energy based submersible pump is installed in a high yielding bore-well which already has a hand pump. Water pumped from the system can be stored in an elevated tank and water is provided to each house through tap connections. Each of these schemes can meet the drinking water needs of about 250 persons. The main features of this system are that electric supply is not required, batteries are not required and household tap connections can be provided. Each scheme cost about Rs. 4.90 lakh (Rs. 1.8 lakh for the solar panels, pump and related infrastructure and Rs. 3.10 lakhs for average cost of the OHR and distribution network), excluding the bore well and water treatment cost. It has been found to be useful in tackling drinking water problems of remote non-electrified and small hamlets/habitations.

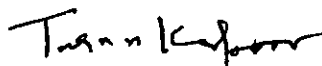
3. This Ministry had proposed to the Ministry of New & Renewable Energy (MNRE) for partial funding of a project to cover 20000 solar pumping systems in habitations (with population between 150 and 250) in the country during the Financial Year 2014-15 as per the Union Budget announcements. The remaining cost is to be borne from the NRDWP (Central + State share) as explained in Para 6 of Annexure-I. The salient features of the scheme for operationalising the project are also given therein.

4. The list of States to be covered under this scheme is enclosed (Annexure –II) along with state-wise targets. Thus, the States are requested to identify habitations and submit a consolidated project report for approval and release of funds to State Level Scheme Sanctioning Committee (SLSSC) under intimation to the Ministry. A representative of MNRE at State Level may be invited to SLSSC for participation.

5. The Ministry of New & Renewable Energy has agreed to put their Nodal Agencies – State Renewable Energy Development Agency as a technical support organization to PHED/Water Supply Board/Nigam for identifying habitations in the preparation and implementation of this project in all States. The State official who will handle the project and the district level Engineers of your State should be taken for an exposure visit to project sites within State or other States where in the earlier scheme has been implemented successfully.

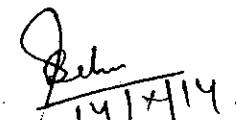
6. This scheme should be implemented further with all sincerity.

Encl. : As above.


(Tarun Kapoor)

JOINT SECRETARY

Ministry of New and Renewable Energy


14/11/14
(Satyabrata Sahu)

JOINT SECRETARY

Ministry of Drinking Water and Sanitation

Copy to:

Chief Executive, State Renewable Energy Development Agencies of all States

SOLAR ENERGY BASED DUAL PUMP PIPED WATER SUPPLY SCHEME

A) SALIENT FEATURES

- i) The scheme is based on an existing of new bore well/tube well. Traditional manual hand pumps installed on such bore wells cannot draw water from depths of more than 120 feet. Therefore they are of no use once the water level goes below this depth, which happens in many areas in the summer months. Secondly, drawing water in this way required manual efforts and the output is less.
- ii) In the new scheme, water is drawn from the bore well by two methods. In addition to the traditional hand pump method, an additional pump which can be run on solar or conventional electricity is installed by using a specially designed water chamber. The use of solar energy based water pumps is especially useful in areas with non-availability or erratic availability of electric power.
- iii) The scheme is based on prefabricated/readymade material and can be installed in a short time span of only 1-3 days. The scheme works even in cloudy/rainy weather with normal efficiency.
- iv) A water tank/ESR of appropriate capacity is installed from which water can be further distributed to houses through individual connections or through stand posts.
- v) The scheme is especially recommended for far flung habitations where one time low or zero maintenance solution is needed
- vi) The scheme costs about Rs.5.10 lakh excluding the cost of bore well.

B) STEPS TO ROLL OUR THE PROJECT.

1. Identification of habitations.

Habitations which are totally dependent on hand pump installed Bore well/Tube well shall be identified.

Priorities may be as below:-

- Habitations not yet electrified
- Habitations which are electrified but power supply is not in regular supply.
- Tribal/SC/ST dominated habitations and IAP Districts,
- Remote habitations.
- Schools

2. Identification of Source.

Identify the bore well/tube well in these habitations which have yields, not less than 2000 liters per hour on the basis of available records.

3. Quality and yield testing of Bore well/Tube well

Test the quality of water of this Bore well/Tube well. If the water is potable then the yield is to be confirmed by conducting Yield Test following the standard procedure. The yield Testing should be carried out under the supervision of Junior/ Asstt. Engineer in the presence of Village Panchayat Chief

4. Preparation of Scheme.

On the basis of water quality and yield, the plan and estimates of the scheme to be made by AE. He should decide the location of solar unit-

- It should not be located under a tree or in shadow area.
- It should have space for fencing for protection.
- It should have proper foundation as the steel structure of solar panel has to withstand wind of upto 200 km/hr. velocities. Hence it should not be located on exposed rocks.

Storage tank

- It should not be far away from source to minimize rising mains.
- It should be located such as to give adequate distribution by gravity to cover the entire habitation.
- It should have proper foundation within 2 m depth.

Distribution System

Plan for house to house tap connections should be prepared.

5. Technical and Administrative sanctions

Technical sanction to be accorded by competent Engineer. Depending up on technical sanction, administrative sanction to be accorded by the competent authority.

6. Proposed Release of grants

On the basis of administrative sanctions, grants should be released to the executing agency by the Ministry of Drinking Water & Sanitation and Ministry of New & Renewable Energy (MNRE) on the following basis:-

| | | |
|--|---|-------------------------------|
| The Unit cost estimated (2012 price) | - | Rs. 4.90 lakh |
| i) Solar panel and pumping system cost | - | Rs. 1.8 lakh |
| MNRE: | | |
| (a) For General category States and J&K, HP and Uttarakhand | - | Rs. 43,200/- (DC Pump) |
| | - | Rs. 37,800/- (AC pump) |

(b) For NE Region States : Rs. 47,520/- (DC pump)
Rs. 41,580/- (AC pump)

MDWS:

- ii) NRDWP (Sustainability) - Balance amount requirement for solar panel and pumping system cost (on 100:0 basis)
- iii) Pipelines, storage and other civil works- Rs. 3.10 lakh (NRDWP coverage component on 50:50 basis and for North- Eastern States and J&K States on 90:10 basis)

The costs of bore well/tube well, water treatment are not included here.

* The actual cost of the project may vary after tender at State Level hence tender should be invited afresh for this scheme.

7. IEC Workshops

To explain the technology/training and procedure to the Scheme implementing Engineers, Workshops should be organized at District headquarters. Demonstration of Dual pump installation and solar panel installation should be organized for them

ANNEXURE-II**DISTRIBUTION OF SOLAR ENERGY BASED DUAL PUMP PIPED WATER SUPPLY SCHEMES**

| S.No. | State | Total Target |
|--------------|-------------------|---------------------|
| 1 | ANDHRA PRADESH | 1000 |
| 2 | BIHAR | 1500 |
| 3 | CHATTISGARH | 2000 |
| 4 | GOA | 200 |
| 5 | GUJARAT | 500 |
| 6 | HARYANA | 300 |
| 7 | HIMACHAL PRADESH | 200 |
| 8 | JAMMU AND KASHMIR | 100 |
| 9 | JHARKHAND | 2000 |
| 10 | KARNATAKA | 500 |
| 11 | KERALA | 200 |
| 12 | MADHYA PRADESH | 1500 |
| 13 | MAHARASHTRA | 1000 |
| 14 | ODISHA | 2000 |
| 15 | PUNJAB | 300 |
| 16 | RAJASTHAN | 2000 |
| 17 | TAMIL NADU | 500 |
| 18 | TELANGANA | 1000 |
| 19 | UTTAR PRADESH | 1500 |
| 20 | UTTARAKHAND | 200 |
| 21 | WEST BENGAL | 500 |
| 22 | ARUNACHAL PRADESH | 100 |
| 23 | ASSAM | 300 |
| 24 | MANIPUR | 100 |
| 25 | MEGHALAYA | 100 |
| 26 | MIZORAM | 100 |
| 27 | NAGALAND | 100 |
| 28 | SIKKIM | 100 |
| 29 | TRIPURA | 100 |
| Total | | 20000 |