WAAREE SOLAR SUBMERSIBLE PUMPS

Capacity	PV Array	Motor Type	Flow as per MNRE standards (LPD) on duty head			
			30m	50m	70m	100m
1 HP	1200 Wp	AC	42000	-	-	-
		DC	45600	-	-	-
2 HP	1800 Wp	AC	63000	-	-	-
		DC	68400	-	-	-
3 HP	3000 Wp	AC	105000	63000	42000	-
		DC	114000	69000	45000	-
5 HP	4800 Wp	AC	-	100800	67200	43200
		DC	-	110400	72000	50400
7.5 HP	6750 Wp	AC	-	141750	94500	60750
		DC	-	155250	101250	70875
10 HP	9000 Wp	AC	-	189000	126000	81000
		DC	-	207000	135000	94500

Data Required for Pump Selection

- Type of pump (surface, open well, submersible)
- Bore depth and diameter
- Static water level
- Daily water discharge requirement
- Location/site details

Applications

- Agriculture
- Drinking Water
- Residential Apartment / Bungalows
- Hotels, Resorts
- Salt farming

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WAAREE®
One *with the* Sun

SOLAR WATER PUMPS

India's leading water pumping solution provider

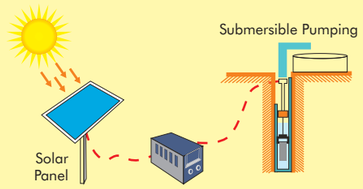
INTRODUCTION : SOLAR PUMP

A solar pump uses power derived from sunlight that is converted into electrical power by Solar Photo Voltaic (SPV) modules, which give higher power output in the afternoons and lower power output in the early morning and evening. As a result, solar pump works on varying power input and gives varying water output at a given pump duty head. The most important parameters to select a solar pump are: how much water is needed daily, at what pump duty head, and at which location. The location is important because solar energy varies from region to region, and sizing of solar panels depends on the capacity of solar pumps and also solar radiation of that region.

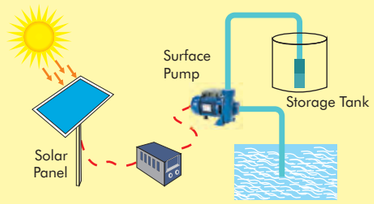
WAAREE SOLAR WATER PUMPING SYSTEM

We have come up with solar water pumping solutions that utilize the energy of the sun to supply water.
Major Components of Solar Pumping System:

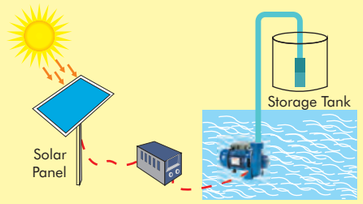
1. Solar pump and motor set.
2. Solar water pump controller
3. Solar PV Modules.
4. Structure (for fixing PV modules).
5. Pipes and cables.
6. Foundation set (consisting of foundation bolts, structure, anti-theft nut bolts and civil construction material-cement, sand, stones .etc.)
7. Earthing and lighting arresters



Borewell Submersible Pump



Surface Pump



Openwell Submersible Pump

TECHNICAL DATA

- Available from 0.5 HP to 50 HP AC, 50 Hz induction motors as standard, which works on variable frequency according to variable sun intensity.
- Also available for DC category motors
- Rated Power : 0.37 KW to 38 kW
- Motor Efficiency: 80% to 96%.
- Motor Speed: 900 to 3600 rpm.
- Enclosure: IP54/IP68.
- Head Range: UPTO 350 m.
- Flow Rate: Depend on Duty Head and Capacity
- Solar Pumpset are available in 4" and 6" diameter

WAAREE SOLAR PUMP RANGE

	Head (M)	Discharge (Litre per day)	HP Rating
Borewell Submersible Pump	30-100	As per MNRE guidelines	0.5 to 50
Openwell Submersible Pump	10-30		0.5 to 10
Surface Pump	10-30		0.5 to 10

***PUMPS ARE AVAILABLE IN AC AND DC VERSION**

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WAAREE SOLAR WATER PUMP CONTROLLER

Waaree Solar water pumping controller can implement the control of the whole system operation, which drives the pump by converting DC power produced by the PV array to AC power. Controller can adjust the output frequency according to the solar irradiation intensity in real time to implement the MPPT (maximum power point tracking).
The advantages of solar water controller is that it can run easily & efficiently on both solar (DC power) & grid (conventional AC power - optional), giving very high discharge for maximum time.

TECHNICAL DETAILS FOR SUBMERSIBLE AND SURFACE PUMP SOLAR CONTROLLER

Technical Data	For 1HP Pump	For 2HP Pump	For 3HP Pump	For 5HP Pump	For 7.5HP Pump	For 10HP Pump
Minimum Input Power (As per MNRE Guideline)	1200 WP	1800 WP	3000 WP	4800 WP	6750 WP	9000 WP
Max. Input DC Voltage	410 Vdc		800 Vdc			
Recommended MPPT Voltage	150 - 360 Vdc		300 - 750 Vdc			
MPPT Efficiency	99%					
Applicable Motor Output power	0.75kW/1HP	1.5kW/2HP	2.2kW/3HP	3.7kW/5HP	5.5kW/7.5HP	7.5kW/10HP
Rated Output Voltage	DEPENDS UPON CAPACITY					
Output Current	DEPENDS UPON CAPACITY					

Note: - For higher capacity pump above 10 HP controllers specification will vary according to pump motor ratings.

ADDITIONAL FEATURES OF WAAREE SOLAR PUMP CONTROLLER :-

System	Max. Efficiency	97-98%
	Ingress Protection	IP 54 (Also Available in IP 65)
	Environmental Temp.	-10°C to 45°C
	Cooling Method	Air/Fan Cooling
	Display	LCD
Protection	Dry Run Protection	**Available**
	Over voltage, Low Voltage, Phase loss	
	Over voltage, Short Circuit, open Circuit	
	Reverse Polarity Protection	

REMOTE MONITORING SYSTEM (RMS)

With the help of our GSM based remote monitoring module user can monitor and control his system remotely from all over the world just with the help of internet.