

## SolarInvert Energy Solutions

# Baghdad Solar Water Pump Recommendation



## Overview

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How do you design a solar water pumping system?

When designing a solar pumping system, the designer must match the individual components together. A solar water pumping system consists of three major components: the solar array, pump controller and electric water pump (motor and pump) as shown in Figure 1.

How to choose a solar water pumping system?

The type of solar water pumping system: borehole/well (submerged), floating or surface will depend on the water source. If the source is a borehole (proposed or existing) or deep well, then a submersible pump that fits the borehole or well should be selected. If the water source is a river, then a surface pump should usually be selected.

What is the Design Month for a solar water pumping system?

Based on a tilt angle of 18 degrees, the lowest ratio is 0.438 so June will be the design month. If this is finalised as the design month, the solar water pumping system must then be selected based on an irradiation of 4.38kWh/m<sup>2</sup> and the required flow of 10 m<sup>3</sup> or 10000 litres (2,642 gallons). angle. This is shown in Table 12.

What considerations should be considered when designing a solar powered water system?

the design of a solar powered water system. The other water quality consideration is when the source has a characteristic that would be corrosive to the pump, motor, and/or other components of the water conveyance system.

What is the design demand for a solar powered water system?

The chosen design demand will form the basis of the design of the rest of the system. It is critical to the success of a completed solar powered water system

that the design demand be clearly stated and agreed upon by all parties involved in the planning and future ownership of the system, including documentation of the agreement.

Should 13000 litres (3434 gallons) be used for solar water pumping?

So, should 13m<sup>3</sup> or 13000 litres (3434 gallons) @ irradiation of 5.4kWh/m<sup>2</sup> be used for selecting a solar water pumping system or should 10 m<sup>3</sup> (or 2642 gallons) @ irradiation of 4.38 kWh/m<sup>2</sup> be used?

In reality both could be used and it is possible that the same system would be selected for both. If this is the case, then the array

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## Design of Solar Powered Water Pumping System for

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## Water pumps

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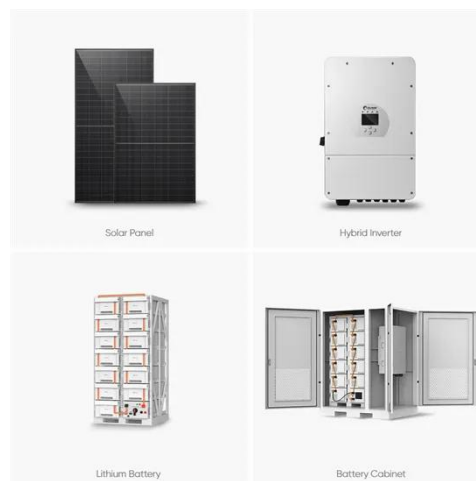
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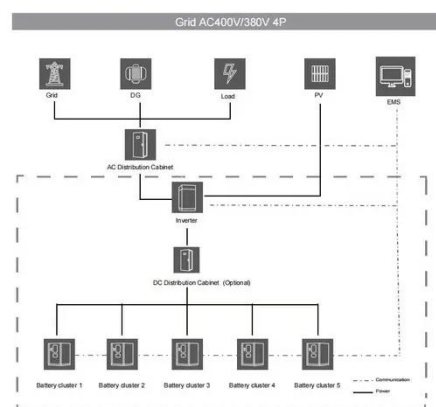
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