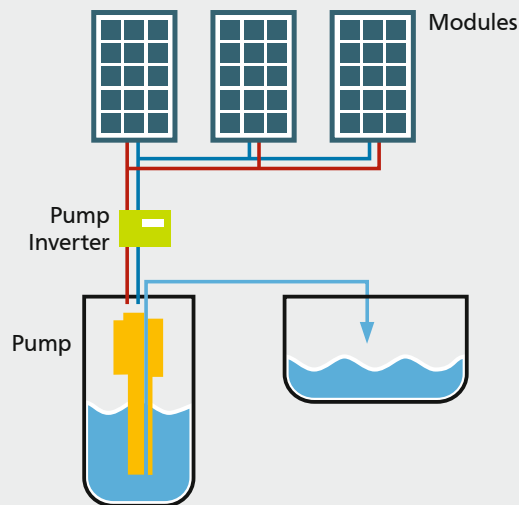


# Fact Sheet

## Photovoltaic Pumping Systems



# Off-Grid Pumping System



## How does it work?

The output of a daytime solar pumping system varies during the daytime according to the levels of array. For Sahara countries close to the equator, the solar array produces the most power on solar midday, beginning by sunrise at six o'clock in the morning and ending at sunset in the evening .

In addition to battery free solar pumping stations with solar array, support structures, junction box, control unit and pumping unit, Phaesun also provide some accessories and options:

- Borehole plates and heads, ranging from 1" ¼ to 3", made from galvanised or stainless steel
- 1" ¼ to 3" rising main made from galvanised steel, stainless steel, HD-PE or flexible pipes
- Water tanks of up to 50.000 litres made with PE, steel or concrete
- Pipes and fitting for water distribution
- Water treatment units
- Standard water tapstands and fee for service water distribution units.



# Off-Grid Pumping Solutions

## The Off-Grid Experts

Solar Photovoltaic (PV) energy is key to cost effective Off-Grid power systems. Phaesun are THE international experts for Off-Grid PV systems. This also includes powering of Off-Grid pumping systems. Phaesun have an in-depth understanding of these systems making us your valued partner for provision of solar powered water pumping systems. Our expert Off-Grid PV technical teams have extensive experience and expertise in designing tailor-made Off-Grid PV systems for remote areas. The Phaesun product range is selected specifically for the electrification of rural areas and comprises products from the worlds leading and most innovative manufacturers for Off-Grid PV components.

## Flexibility

Solar pumping systems are flexible and modular and can be designed according to water demand or aquifer limitations. Some systems can work in hybrid configurations with other power supplies such as wind, generator or mains power.

## Potential and possibilities

The ability to provide continuous power in any environment makes solar systems perfect for water pumping in remote areas. Systems of any size and any type from a small pumping system for garden ponds up to a water supply for several villages Off-Grid PV systems are the best long term solution with the best cost-performance ratio. The solar systems can be designed to pump up to more than 300.000 liters per day at lower heads to smaller water quantities at higher heads up to 300 metres (range diagram).

## Reliability

- Up-front purchase of 25 years of fuel guarding against price and availability fluctuations (25 year power warranty on the solar array)
- Avoids the need to regularly transport bulky and heavy fuel to inaccessible remote locations
- Vastly reduced running and O&M costs
- Unmanned automatic operation
- Energy available on demand during daylight hours, not dependent upon generator starting and stopping
- Modular and scaleable systems to suit water demand or aquifer characteristics
- Environmental benefits (clean and silent)

## Clean, silent and reliable

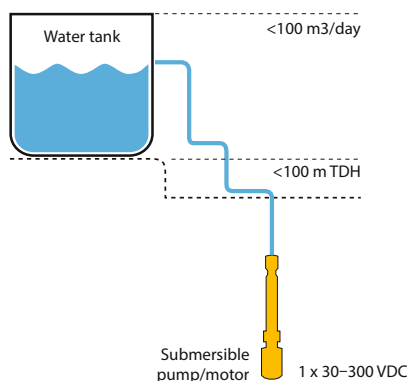
Our solar systems are very dependable and have low maintenance requirements. The submersible pumps are from world renowned suppliers and identical to those powered by mains or generator power with all stainless steel parts. Solar power systems do not have moving parts to break like generators. They also work silently, with no noise or air pollution. The perfect renewable solution for water pumping systems.

## Quality

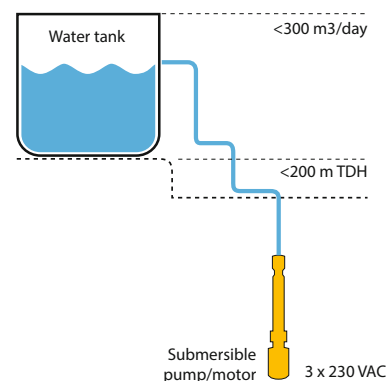
Due to our high-quality manufacturers of solar modules, electronics, solar pumps and installation materials, we can offer you a solar power system that meets the highest quality requirements. This guarantees the highest reliability of the system and the pumping components. Because of the expertise and experience of our team, we can support you from project planning to system design and to the implementation in all technical and project management aspects.

## Range Diagram

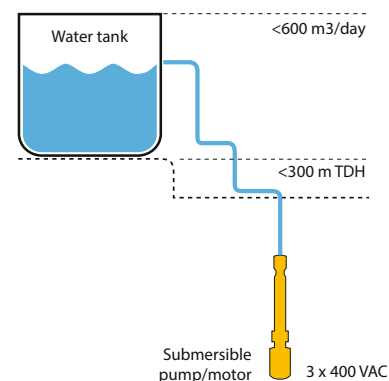
### Phaesun Pumping Small



### Phaesun Pumping Medium



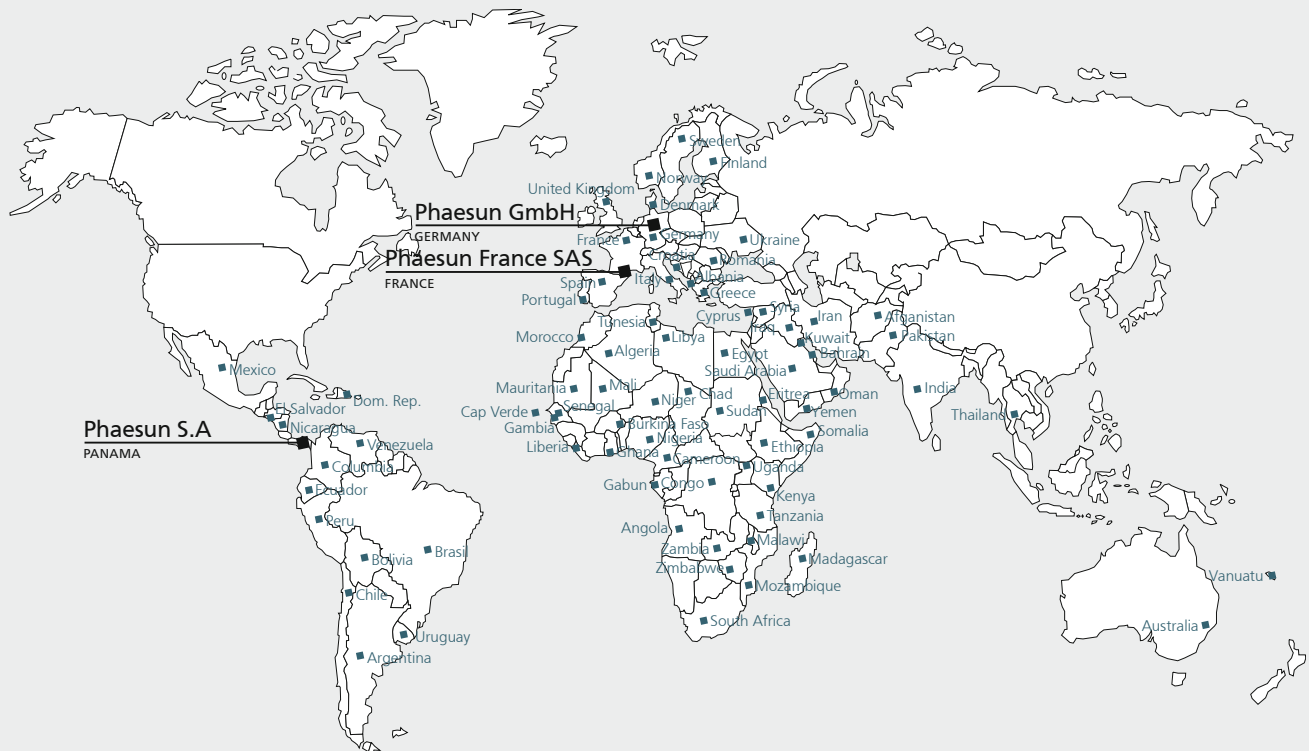
### Phaesun Pumping Large







## Around the world:

Through the members of the Phaesun Group and our network of associated companies we have successfully supplied and managed hundreds of sustainable energy projects in more than 60 countries worldwide.



Phaesun's range of integrated services includes complete customized Off-Grid systems in the field of rural electrification, health care, telecommunications, education and water supply. We also have an extensive range of pre-configured kits. When designing our solar systems we always focus on ease of installation, minimal maintenance and long operating life. Systems are designed around readily available components, energy efficient loads, appliances and equipment. Local sourcing is our priority whenever it is possible.

-  Countries in which Phaesun has successfully realised projects
-  Phaesun and associated companies

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Winner of:

