

Project Name: **Shoul Farm (Irrigation and Residential) Project - Morocco**

<b>Company:</b>	Installed by Heliantha Solar (Distributor Cleanergy Maroc)
<b>Location:</b>	Morocco
<b>Project Date:</b>	November, 2020
<b>Main Contact:</b>	Soufiane Margoum Sales Engineer,
<b>Application:</b>	Residential and Irrigation/Farming
<b>Customer Type:</b>	End user residence and crop irrigation
<b>Phocos Product:</b>	<b>Any-Grid PSW-H Hybrid Inverter</b>
<b>Quantity:</b>	3 Units

## Project Description/ Key Details

There were multiple challenges this business owner/homeowner wanted to resolve. First, the public utility had extremely high electricity prices. They were tired of paying constantly increasing, monthly electricity bills for their home and agricultural business. Second, this family lived in a rural area outside of town, so the electricity the utility provided to their location was not always delivered at the intended voltage (voltage dropped at times from 220 VAC to 120 VAC). When this voltage drop occurred, this customer was not able to run all the equipment and appliances they wanted to. This significant limitation impacted daily life for the family, and efficient business operation. This is a common situation in this region for rural customers. This family sought out an energy solution to fix both issues with a solar system investment.

## Solution/ Results

**Heliantha Solar** listened to this customer's frustrations and provided a strategic design and expert installation to meet the defined goals with **3 Phocos Hybrid Inverters** integrated into a 9.6 kW ground mounted, solar system solution (three-phase). The design incorporated solar, utility, and storage, using the PSW-H inverter prioritization to optimize energy usage in the most efficient and cost-effective way for this consumer with no interruptions. This programming feature of the Phocos hybrid inverter allows for customization at each installation site. For some customers who do a 2-stage installation (investing in solar storage later), the PSW-H is flexible to allow for that. **Heliantha Solar** confirmed surges are not a problem with the PSW-H product, unlike other hybrid units they have experienced in the past. Energy storage at this site consisted of 4 each, 200Ah 12Vdc batteries connect in series, secured in a galvanized, metal housing container.

Now installed, this customer is experiencing an 80% reduction in avoided utility costs, which complies with their primary goal of lowering monthly overhead. With the storage solution, this project will result in a 5-year ROI (or a 3-year ROI without batteries factored into the calculation). Beyond this sizable monthly savings, this home and farm now have reliable energy. The consumer is no longer forced to endure voltage drop complications, allowing the family to run various home appliances (air conditioner, a refrigerator, two TV's, LED lighting, washing machine, etc.) as well as the farm equipment and water pumps, at will. This end-user now has energy independence, ensuring more productivity and efficiency for their agricultural business, but also more comfort for the family in the home.

An unexpected bonus, this solar array acted as a small carport, offering shaded parking for the customer's vehicles.

***" We proposed the Phocos Any-Grid PSW-H to the end user because we trust the brand name, and because it is one of few hybrid inverters in the market that provides great features, real power rating, and reliability."***

— Soufiane Margoum, Sales Engineer

**80% reduction**

avoided utility costs

**5 year ROI**

with batteries (or 3 year ROI w/out storage), comparing the unreliable utility grid with the new solar system energy production

## Featured Product:



**Any-Grid  
PSW-H-5kW-230/48V**