

Marly Case Story

Place: Sudan – Shandi - Africa

Project: Solar Pivot Irrigation System

Product: Marly Borehole 12” pump model E12A/4R-147 Kw

In north Sudan in 2017 a very advanced irrigation system has been built to provide water to an agriculture plants located in Shandi close to the Nile river.

The water is sucked from a deep well by a Marly borehole pump, which is electrically supplied by a solar photovoltaic panels system.



Marly borehole pumps have been used to feed an agriculture irrigation system of 250.000 m² surface. The pump has been supplied with a sophisticate electrical solar panels system capable to produce up to 244Kw/h at 300Amp.

This solar eco-friendly energy production system contributes to save 52.800 Lt/year of diesel fuel .

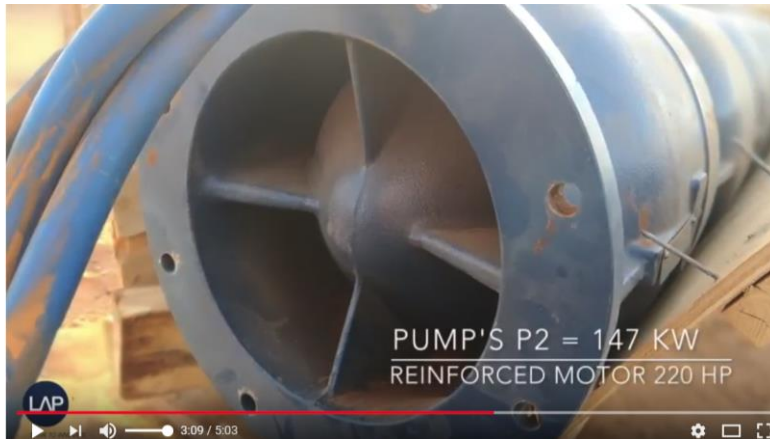
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Marly has supplied a 12" size borehole pump to be used to boost the water from the master well to the Pivot irrigation system.

The feeding well size is 14" with a total depth of 100m, while the water table level was found at 90m.

Due to the peculiarity of the energy supply source the Marly pump was properly selected in order to grant the best hydraulic efficiency solution (79% hydraulic efficiency and 88% motor efficiency).

The supplied Marly pump model is E12A/4 equipped with a 4 semi-axial impellers type stages. Delivered flow is 270 m³/h at 9 Bar pressure and hydraulic efficiency of 79%.



Moreover thanks to the special materials used for pump impellers, diffusers and bearings bushings, this pump is able to manage a very high quantity of sand as it is shown in the start-up phase picture here on the bottom picture (pumped water is yellow coloured due to the high sand content).



The 10" borehole electric motor model 10I 200 of 147Kw is a "water cooled" type, rewind stator with special insulation class PE2+PA wire.

The motor thrust-bearing was reinforced so to grant a long life to the pump set and to improve the motor efficiency by reducing the bearing mechanical dragging.

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In the picture here below we can appreciate the irrigation pivot system, its efficient work that grants the water distribution to the farmed fields with a total water flow of 40.000m³ per day provided by the 12" Marly borehole pump.

