



## Remote monitoring for two solar pumping systems in Ethiopia

### Background

Elfinesh e.V. is a Swiss association and supports the people in the Gurage region in Ethiopia with its activities. Among other things, the association supports a school and has installed a solar system to supply the school with electricity.

In addition, the association provides drinking water at two locations through solar pumps for the school and the local community. About 8,000 people benefit from this drinking water system. EcoPhi was assigned to remotely monitor the systems.



### Key facts

- ✓ 220 km from the capital Addis Ababa
- ✓ Two solar-powered pumps
- ✓ Systems in operation since 2018
- ✓ 8'000 residents at two locations benefit from the water supply
- ✓ 2 x Grundfos pumps
- ✓ 2 x RSI controllers





## What EcoPhi does

EcoPhi is responsible for remote monitoring on site at both locations. Two box systems were installed here, which are able to track the controllers as well as additional sensor data. In addition to the data from the Grundfos RSI controllers, the level in the water storage tanks is also recorded.

The installation of the remote monitoring systems was carried out by a technician from EcoPhi's network.

The plant data is transmitted via the mobile data network as well as stored locally.

EcoPhi monitors the plants, generates reports and is available for general consultations.



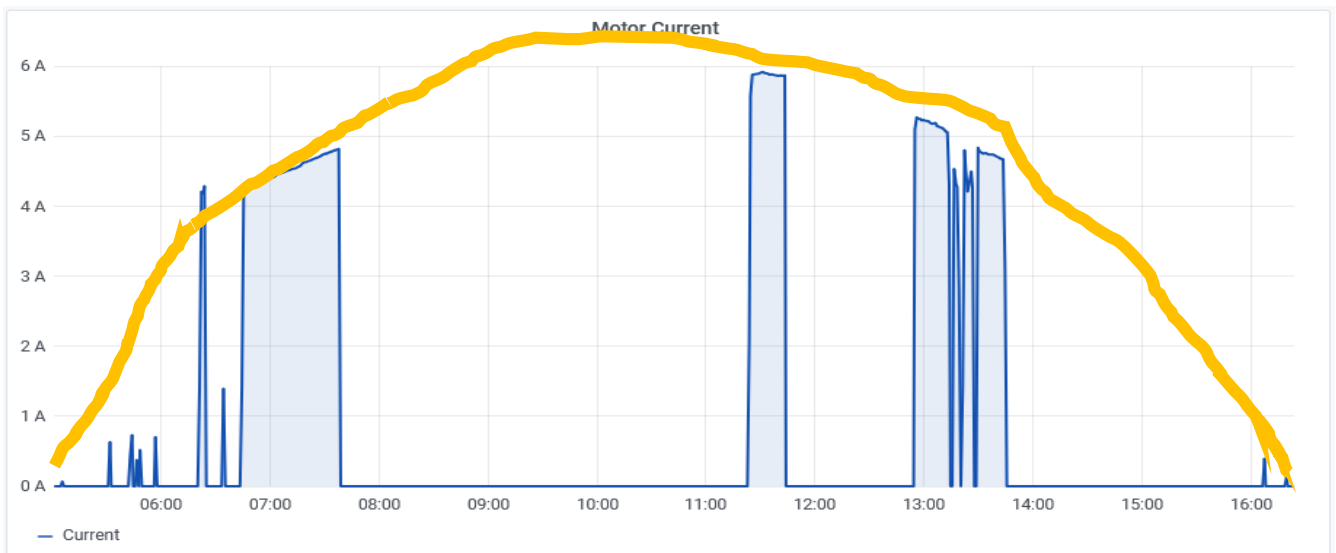


## How did the service help

The pumping system is not delivering enough water according to the users on site. The initial assumption was that this was due to insufficient pumping/solar power. More powerful pumps or more solar surface would be associated with high costs.

Remote monitoring allows the usage of the system to be determined continuously. This revealed that unused potential exists. By installing a larger water storage tank and adjusting the water output times, the performance of the plants can be improved at low cost.

Through the consulting services, the customer is in regular communication with the contact person at EcoPhi, who can also answer general questions and provide independent advice on these and other systems.



This figure shows the pump motor current trend over one day, which is representing most of the days. The graph shows that the pump is irregularly running. Depending on the irradiation, the pump power is regulated accordingly. Significantly more pumping capacity would be possible, so that more water could be supplied overall. An increase in the water storage tank and adjusted times of use can already be sufficient to pump enough water.



# EcoPhi

Renewables Engineering

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