

LODWAR WATER SLASHES COSTS BY A THIRD BY INVESTING IN SOLAR

Lodwar Water Services Company (LOWASCO) has partnered with leading water and energy solutions provider, Davis and Shirliff, and the Japanese Aid Agency (JICA), in a Sh16m project to install solar hybrid borehole pumping systems in three of its seven borehole fields in Lodwar, which will lower the cost of water supply by 33 per cent and improve reliability.

The exorbitant cost of electricity has kept the cost of supplying water in the area high, with LOWASCO spending Sh45 to supply each cubic meter of water while charging its clients just Sh33 per cubic meter – consequently incurring a loss of Sh12 per cubic meter supplied. The boreholes will now pump water using solar energy by day and switch over to mains power by night, when the demand for mains power is at its lowest. Until now, water from the boreholes has been pumped solely with mains electricity, which was not only unreliable, but also extremely expensive.

Through the installation of the solar hybrid borehole pumping system, the water service provider will now incur a cost of Sh30 for each cubic metre of water.

“Supplying water to Lodwar had been costly due to the large amount of electricity used in pumping water from the boreholes. We wanted to keep the tariffs low and as such it was imperative that we found solutions to lower our costs to under Sh33 per cubic metre to at least break even,” said Rtd. Col. John Esekoni, LOWASCO Managing Director.

With the desert town of Lodwar receiving an average 9.6 hours of sunshine a day, higher than most towns in Kenya, according to the Kenya Meteorological Department, drastically lowering the reliance of the three boreholes on mains power through the use of solar energy was deemed a viable alternative in improving water supply to the business hub of Turkana County.

To achieve this, Davis and Shirliff installed 94 solar panels on one borehole and 144 solar panels on each of the other two and added hybrid generators, so that each borehole supplies between 125 and 250 cubic metres of water a day.

The installations feature a remote monitoring mechanism that measures the rate of flow of water, current consumption and available radiation. This is vital for the timely repair and regular maintenance of the systems so that they operate at their full capacity where they pump 675 cubic metres of water daily.

“Each pumping system is fitted with a tracking system so that we can keep tabs on the performance of the solar hybrid pumping systems. We can, therefore, run the diagnostics necessary to keep them at optimum performance by facilitating timely post-installation support,” said Anthony Karunguru, Davis and Shirliff’s senior technician for the Lodwar project.

Turkana County has been the focus of concerted investment due to the recent oil exploration in the county. Lodwar, the business hub of the region, has seen sizeable growth in the hospitality and trade sectors, as a spillover effect, increasing the need for a reliable and affordable water supply to meet the demands by businesses.

With the installation of the solar hybrid borehole pumping systems having facilitated the maintenance of water tariffs at Sh33 per cubic meter, LOWASCO now plans to convert its remaining four boreholes to hybrid pumping systems to further improve the reliability of water services in the town.

Davis and Shirtliff has previously undertaken similar installations in Wajir, Isiolo, Machakos and Moyale counties. The five-week project in Lodwar has, however, been a different kind of experience for the Davis and Shirtliff team, which had to hire four protection officers as escorts from Kainuk to Lokichar and onwards to Lodwar, with visitors highly susceptible to attacks by gangs in Turkana County.

Transporting essential parts of the pumping system proved to be complex. “It would take three days for equipment to arrive from Nairobi, 684km away, due to the poor road network. At one point, we had to airlift a motor from Nairobi due to the urgency with which it was required and its delicate nature” said Mr. Karunguru.

The role of the project in transforming lives, however, weighed more on the team, seeing the triple project eventually successfully delivered.

Davis and Shirtliff Limited is a Kenyan multinational, operating through a network of Kenyan branches and regional subsidiaries in Uganda, Tanzania, Zambia, Rwanda, Ethiopia, South Sudan, Somalia, Burundi and DRC. Founded in Kenya in 1946, it is the leading supplier of water-related and alternative energy equipment in East Africa.