



Case Study

Safe drinking water for communities in Egypt

 **MARINE**

KATADYN GROUP
SWITZERLAND

Project: Mobile, solar-powered units to provide safe drinking water to remote desert communities

Customer: Desert Research Center (Cairo)
Dr. Hosam Shawky

Product: Spectra Watermakers LB-1800M

Date: 2019

Project description

Reverse osmosis watermakers are an ideal solution for water sources with variable salinity, as they perform effectively with fresh, brackish or seawater. Power use was a top concern, as electricity in these areas is often limited or inconsistent and fuel costs can be prohibitive in remote areas. Solar power was the obvious choice, but conventional reverse osmosis Watermakers require a large amount of power to operate their pumps. The other challenge in this instance was support and maintenance, so highly complicated, fragile systems that require extensive training were not viable options in the rugged desert conditions where the population's technical education is limited.

The solution was the construction of two mobile units that utilize three energy efficient Spectra LB-1800M Watermakers, paired with a rotating solar array. These durable systems will deliver fresh, safe water from virtually all water sources and are completely self-sufficient on solar power. The LB-1800 can deliver over 6,800 liters of water per day and utilizes as low as 2.5 watts to produce a liter of water, depending on salinity.

Each mobile system can produce over 20,000 liters of water when running at full capacity. This level of efficiency is significantly higher than competing systems and makes remote solar operation possible. Utilizing three units as opposed to a single larger system ensures that water production continues if an individual system needs maintenance or repair. The two systems have operated on each of their original reverse osmosis membranes since their deployment in 2013 and 2016. Local technicians have been trained to operate and maintain the systems. Initially, Dr. Shawky's team would check in daily to make sure the Watermakers were functioning well, but now the technicians are self-sufficient and only make contact every 6 months. Quality of life has improved for residents of these areas with the arrival of consistent fresh water and the systems operate nearly 24 hours per day.

Product

Dr. Shawky and his colleagues at the Desert Research Institute had been looking for water purification solutions for the growing populations in the Northwestern Coastal Zone, Western Desert and Red Sea Coast in Egypt. These areas have groundwater that varies from slightly brackish to highly saline. Communities in these regions have depended on rainwater collection and trucking in outside water for survival. In desert areas, rainwater is scarce to nonexistent so alternative options are needed.



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Summary

The LB-1800M has proven to be an excellent off-grid water solution when paired with solar power, and the Desert Research Center is considering these systems for future deployment.

About the Katadyn Group

The Katadyn Group is a global corporate group specialized in the area of self-sufficient nutrition and drinking water supply. Its brands include Katadyn, Trek'n Eat, AlpineAire Foods, Optimus, Pharmavoyage, Micropur, Certisil, Steripen and Spectra Watermakers. With this broad brand portfolio, the group provides products and solutions for the outdoor and marine industries as well as for industrial and municipal needs. Its diverse product palette ranges from freeze-dried specialty meals and outdoor cooking gear to mobile and land-based water desalination systems and specialized disinfection systems for the industry. Indeed, humanitarian aid organizations and the military for years have been regular customers of the Swiss group of companies. With headquarters in Kempthal the Katadyn Group employs about 200 people at its subsidiaries in Europe, Asia and the United States.

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