



“THIS IS ONE OF THE MOST IMPORTANT PROJECTS BY THE MINISTRY OF PUBLIC WORKS AND IS THE FIRST OF ITS KIND WHERE SOLAR ENERGY WAS USED FOR STREET LIGHTING.”

Mohammad Hashique, Hydroturf Energy

Solar Street Lighting

Fujairah, United Arab Emirates

System specifications:

Batteries: (808) Trojan deep-cycle 8D VRLA batteries

Solar Modules: (404) 245W Incon solar modules

Lights: (404) 160W LED Incon lights

Charge Controllers: (404) Phocos charge controllers

Mounting: (404) light poles

Monitoring System: OEC monitoring system

Wadi Sidr is one of the most remote areas in the Fujairah province of the United Arab Emirates (UAE). Its rocky and mountainous terrain has kept high-capacity electric lines from reaching this region. Driving on these mountainous roads at night with no lights can be treacherous, and until recently, street lighting was not possible since the electric grid did not extend to this area.

In August 2011, a solar street lighting project was installed along a 11.8 km area in Wadi Sidr, drastically improving safety conditions on these roads. The installation of the street lights not only improved visibility at night, it brought area lighting to more than 800 homes that are situated along the road. Companies Hydroturf International LLC and Incon designed and installed 404 stand-alone photovoltaic, pole-mounted street lights.

Hydroturf supplied 808 Trojan deep-cycle batteries for the project and assisted with the system design. Founded in 1995, Hydroturf offers high-quality products and services for desalination, irrigation, landscaping, turfcare, machinery, golf, and batteries to the growing Middle Eastern region. Incon, the major contractor for the project, was founded in 1978, and is the leading

developer and manufacturer of intelligent online monitors for the power utility, hydroelectric and industrial markets.

Each street light in this project consists of one 245W polycrystalline photovoltaic module, one 160W LED light, a charge controller and two Trojan deep-cycle 8D VRLA batteries. Trojan batteries were chosen for this project due to their reputation for high-quality and durability. In addition, Hydroturf's technical assistance, knowledge of renewable energy applications, and a wide range of Trojan batteries in stock also contributed to the selection of Trojan batteries for this project.

Trojan's deep-cycle VRLA batteries are maintenance-free and deliver superior energy in demanding renewable energy applications. Engineered for rugged durability, outstanding performance and long battery life, Trojan's VRLA batteries include a proprietary electrolyte formulation that delivers consistent performance and dramatically long cycle life. The heavy-duty grids lock active material onto the grid network to efficiently deliver more concentrated energy to the terminals. Premium grade double-insulated separators allow maximum charge flow between the plates for optimum performance.

The street lights include a state-of-the-art monitoring system which allows the lights to be monitored from a mobile phone. The OEC monitoring system uses software to control the brightness and timing of the lights from anywhere in the UAE.

The project installation in the mountainous area of Fujairah presented several challenges. Digging through the rocks in the ground was a laborious process and ambient temperature reached more than 120F (50C) in August. Establishing the optimal angle for the tilt of solar panels among the

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mountains was complex, and transporting the light poles and other heavy equipment on the interior mountain roads was very challenging.

The solar street lighting project is an initiative in line with the direction of the UAE and Abu Dhabi governments towards the implementation of sustainable renewable energy projects. These types of projects contribute to the reduction of carbon emissions and lessen the environmental impact on the surrounding areas. This pilot project will support studies and experiments in the field of solar lighting. The successful Wadi Sidr project serves as an example of how the use of solar street lighting in a remote area can be used in similar road projects where conventional grid electricity is too costly.



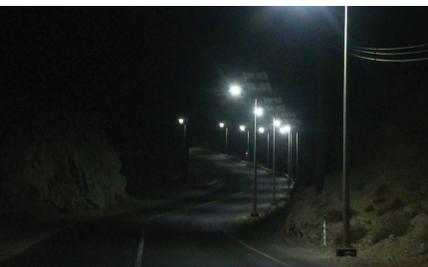
The Wadi Sidr solar street lighting system demonstrates the significant cost savings of operating solar street lights compared to the high cost of conventional electricity. While there were no government incentives for this project, the UAE government is working on a plan to implement subsidies for renewable energy strategies, which would make applications like this one even more affordable.

For more information:

Trojan Battery:
www.trojanbattery.com

Hydroturf International:
www.hydroturfinternational.com

Incon:
www.incon.com



Trojan batteries are available worldwide.
We offer outstanding technical support, provided by full-time application engineers.
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