NEXTracker
A Flex Company

Case Study:

Jordan

Solar Tracking Boosts Healthcare & Tourism Industries in Middle East

Project Facts

Size: 7 MW at two sites:
Kempinski Ishtar Hotel (5 MW) and
Khalidi Medical Center (2.1 MW)

Developer: Mustakbal Clean Tech

EPC: Enerparc

Self-Powered Tracker Rows:
200 rows (5 MW system) and
90 rows (2.1 MW system)

Modules: 6,700 modules (KMC) and
15,800 modules (Kempinski Hotel)

Project Overview

To meet the Middle East's growing electricity needs, solar power plants are increasingly coming online in the MENA region (Middle East North Africa). Jordan—with its ancient treasures and beautiful resorts—is a nation highly reliant on tourism. Generating affordable, reliable, and clean electricity is crucial; it's anticipated that close to 400 MW of solar energy projects will be deployed in 2017; and 75% will be for single-axis tracking ground mount solar projects.[1]

NEXTracker was selected by developer Mustakbal Clean Tech to deploy seven megawatts of its award-winning NX Horizon™ tracker in Jordan, for the Kempinski Hotel and Al Khalidi Medical Center (KMC). These distributed generation (DG) solar power plants are located in the Jordanian desert – 200 miles from Kempinski, and 60 miles from KMC, respectively. Both the hotel and hospital own parcels in the Jordanian desert and will produce 21,000 MWh of solar generated electricity annually-enough electricity to power close to 2,200 homes (in U.S.).

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Challenge: Designing for Rough Terrain and Variable Climate

Historically, Jordan has had to import approximately 97% of its energy needs, at a cost of close to 18% of GDP. Fortunately, the Middle East is a geographic region blessed with plentiful sun; Jordan enjoys approximately 330 days of sunshine a year. Its treasures, notably the Dead Sea and Petra, draw thousands of tourists from around the world each year. Yet Jordan's climate is variable: there are high winds, sandstorms and snow storms. These unique conditions can cause problems for linked row tracker systems which have sensitive exposed components and could result in additional operations and maintenance (O&M) time and costs. Adding to these weather challenges, there are construction constraints presented by the hilly terrain and topography (soil, sand, rocks). These constraints can be problematic when it comes to project construction.

Solution: NEXTracker SPT Offers Maximum Energy Yield

NX Horizon self-powered tracker is delivering substantial cost savings for these Jordanian customers. Owing to NEXTracker's design flexibility and engineering, all moving parts of the tracker system, such as the motor and slew gear, are enclosed and elevated above the ground. During high wind events, a stow mode is initiated, further protecting the system. As a result, the system is shielded from the sand, dust, and wind that are prevalent in the region. When the solar arrays require cleaning, NX Horizon's independent, self-powered rows allow for fast and easy maintenance: five times faster than linked row systems. Joining the growing number of solar arrays in the Middle East, these two new Jordan solar projects are a shining exemplar for other nations in the region, illustrating how countries new to photovoltaics can benefit—both from an economic and environmental standpoint—from the further deployment of clean renewable energy.

EPC Enerparc stages installation for Khalidi Medical Center solar plant

"NEXTracker's outstanding solar tracking solutions are enabling us to optimize our commercial solar deployments for critical commercial projects in Jordan. The technology is ideal for the desert environments so common in the Middle East. We look forward to extending our partnership with NEXTracker, as their tracking solutions are superior – and their experience and customer service is unparalleled."

Dr. Ala Qubain
CEO

mustakbal. clean tech

[1] Greentech Media, "The Global PV Tracker Landscape," pg. 55, October 2016.