ABB's solar solution in Jordan cuts costs for refrigeration company

Fully sealed, dust proof, maintenance free solution

The trio inverters have an extended temperature range.

Al Burj Stores, a company in Jordan that provides refrigeration for fast-moving perishable goods recently connected a 420 kWp PV system on the roof of its new warehouse to the local electricity grid. The PV plant, outfitted with ABB inverters is expected to offset 77% of the current electric consumption at the facilities by generating 714,000 kWh per year.

The PV system will power warehouse operations while feeding excess electricity back into the local utility, resulting in credits that will help Al Burj reduce its energy bill. Seventeen ABB Trio solar grid-tie inverters convert the direct current from the solar panels to alternating current needed to run the warehouse or be fed back into the grid.

The optimum fit of the TRIO comes from its construction characteristics:

- Fully sealed, dust proof enclosure
- Extended temperature range with natural convection cooling without fan exposed to sand and dust
- Maintenance free

The distributed architecture of the plant with 17 string inverter coupled with the dual input of the TRIO offers granularity of control increasing the immunity of the plant to the negative effect of panel aging and uneven dust accumulation on panels. Similarly, the multi inverter architecture maximize the uptime by reducing the impact of accidental damage to any component of the plant.

An additional benefit is offered by the detachable and configurable string combiner compartment included in the TRIO, used in Jordan avoids the need for external AC and DC switch gears and protection panels.

The roof has thus been transformed into a clean, efficient and predictable power plant that will help Al Burj avoid emitting 850 tons of carbon dioxide emissions per year.

The Jordan national strategy seeks to diversify energy sources, setting a 10 per cent renewable energy contribution to the total energy mix by 2020.

Al Burj's site is one of the first FMCG cold store warehouses in Jordan to benefit from a solar PV project, a development that's been driven by Jordan's plentiful sunlight and favorable policies that support investments in renewables. (Jordan, with more than 300 sunny days a year, has excellent potential for solar energy generation) Al Burj is also relying on the Internet of Things, Services and People to keep track of energy from the PV installation, with ABB's web-based PV plant monitoring solution that allows customers to manage the plant by enabling remote monitoring and analysis of system status, performance and energy production.

"Our business of operating cold stores is an energy-intensive operation," said Wael Shokerat, CEO, Al Burj Stores. "This project will significantly contribute to a reduction in our annual electricity expenditure. It will also be a sound investment for our company due to the expected quick recovery of the initial investment thanks to favorable renewable energy policies enacted by the local government."

The PV system was installed by Mustakbal Clean Tech, a solar specialist firm that specializes in turnkey implementation and integration in the Middle East and North Africa.