



Qatar set for new solar projects

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There are plenty of opportunities for solar applications in the infrastructure being built in Qatar to host the FIFA 2022 World Cup, Omran al-Kuwari, a leading Qatari technocrat, has told Gulf Times.

"Rooftop and building-integrated solar systems in stadiums and other support buildings, and air-conditioning for stadiums are just two of them," stated al-Kuwari, the CEO of GreenGulf, a Qatar-based clean technology advisory and investment firm.

Currently engaged in establishing the country's first Solar Test Facility (STF) at Qatar Science & Technology Park (QSTP) in association with Chevron Qatar, GreenGulf was involved in drafting the sustainability chapters of Qatar's Bid Book for 2022.

"Training sites and team residences using solar thermal technologies and large-scale grid-tied solar power plants to offset electricity use from the utility

Work is progressing fast for the Solar Test Facility at QSTP.

INSET: Omran al-Kuwari: the CEO of GreenGulf

grid are among the options," al-Kuwari explained.

Gulf Times had reported exclusively last month about an initiative by GreenGulf and Chevron Qatar to set up at the STF, solar car park shades that use electricity-generating PV panels as cover for parking lots.

"Qatar could introduce a 100% emissions-free transportation system using electric cars and buses with a network of solar-powered charging stations," the GreenGulf CEO said.

On-site solar water desalination and purification systems for sporting venues and team facilities are among the other options. Waste treatment and waste-to-energy systems for clean and efficient operation of sporting venues are also proposed.

The relevance of solar applications is on the rise given that the demand for power in the Middle East is projected to grow at more than 7% per year over the next decade. "Qatar has already shown one of the fastest yearly growth rates in energy demand in the world at 13.4%," al-Kuwari observed.

Pointing out that at the moment Qatar relies on natural gas for more than 75% of its energy needs and the rest on oil, he asserted it made sense to develop solar technologies when taking into account the opportunity costs of using oil and gas in Qatar versus exporting it to support major industries that are dependent on fuel.

"Solar energy is a viable option to diversify Qatar's sources of energy due to the amount of solar irradiance we receive as well as the initiatives shown by key institutions to support its growth."

Referring to the existing electricity tariffs in the GCC countries, al-Kuwari maintained that end-consumers paid only less than half of the actual cost, due to government subsidies.

The five-year STF project, scheduled to start testing this summer is meant to identify the best-suited solar technologies for Qatar and the region, given that dust, heat, humidity and limited availability of water and land are the key challenges.

Giving more information about the STF, the GreenGulf CEO said the first phase would consist of PV technologies - including fixed PV, single-axis tracked PV, dual-axis tracked PV, and Concentrated PV.

"The second phase will demonstrate solar thermal technologies like parabolic troughs and linear Fresnel, as well as their applications in solar cooling and solar desalination."

The STF will be experimenting with different cleaning cycles for its solar technologies as well as testing various anti-dust coatings on solar panels to study the issue of dust accumulation, a problem that is specific to the region.

Asked about the impact of heat on PV panels, Chevron Qatar president Carl A Atallah pointed out that efficiency dropped somewhat as temperature rose.

"But from our experience with Chevron's test sites in the US, we know that some kinds of panels are less sensitive than others," he explained.

If thin-film and concentrating PV technologies generally hold their efficiency better in hot conditions, crystalline silicon panels are usually more efficient to begin with.

"The key thing is to do side-by-side tests in the actual region where the panels will be used, and this is what we are doing in collaboration with GreenGulf at the STF at QSTP," Atallah added.

Boost for clean technology

It was in 2009 that the GreenGulf CEO Omran al-Kuwari proposed to QSTP the idea of establishing a Solar Test Facility. In March that year, the project was announced under the patronage of HH Sheikha Moza bint Nasser, chairperson of the Qatar Foundation. GreenGulf's Corporate Research Agreement with QSTP was also signed in 2009 to move the project forward. In 2010, GreenGulf and Chevron signed a Joint Study Agreement to jointly develop and operate the STF. The GreenGulf CEO described the upcoming

and Chevron signed a joint study agreement to jointly develop and operate the STN. The GreenCam CEO described the upcoming facility as an important component in Qatar's vision to encourage the use of clean technology across the region. "It allows us to test new and emerging solar technologies in order to understand their suitability for the Middle East environment and generate unique Intellectual Property to support the marketability of solar technology applications across the region," he added.

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