

The Rise of Solar Rooftop in the UAE

The UAE's solar industry has been carefully tuning in to the latest developments in Abu Dhabi and Dubai's rooftop programmes. But with no signs of feed-in-tariffs, PV manufacturers and installers are bracing themselves for net metering.

Dubai first contemplated a solar rooftop scheme **back in 2011**, when Dubai Electricity and Water Authority (DEWA) said that a study would be necessary to launch such a scheme in the emirate. It was only this year that the first study on technical specifications was completed, and soon after, DEWA had hired a consultant to work on the regulations.

"We have established the regulatory framework, policies and technical capabilities at DEWA and the Regulatory Supervisory Bureau (RSB)," Waleed Salman, executive vice president of Strategy & Business Development at DEWA, told the Saudi Arabia Solar Industry Association (SASIA).

"I expect the government to issue a legislation that allows all government and private buildings as well as industrial facilities to connect their PV installations to the grid."

Comprehensive details will be provided in the regulatory law that will be issued within a few weeks, according to Salman, and property owners would have to apply at DEWA, as RSB handles larger projects.

"We've been working internally on putting together the guidelines, standards and expertise. We are now ready at DEWA but awaiting the law to be finalized," says Salman, adding that some companies have already submitted their applications.

FiTs vs net metering

The framework will also include a solar incentive that is yet to be revealed, although local industry players are expecting a net metering scheme rather than feed-in-tariffs (FiT), as suggested during the solar rooftop gathering that was held last week by the Middle East Solar Industry Association.

Ayham Mkalalati, business development manager at Enviromena, explained that the feasibility of such a mechanism would depend on several factors.

"In terms of the connection of the net metering, it will depend on how it's going to work and whether it will be daily or month-by-month. For example, I can size my system such that in the winter months, I overproduce and feed the grid with the excess power, but will the policy allow me to claim back that excess in the summer months, when I'm not generating enough to cover my load?," he questioned.

"These dynamics could change the picture of how we see the net metering. I think without FiTs, on a net metering basis, you're limiting your customers to mainly industrial and maybe a few commercial," noted Mkalalati.

Net metering has undeniably been successful in many worldwide markets. Italy, for instance, after ceasing FiTs for all new PV projects from July 2013, has just raised the limit for net metering in the country from 200 kW to 500 kW per installation, in attempt to boost the rooftop PV sector.

Similarly, the U.S. state of Massachusetts raised the net metering cap last August for local governments as well as private sector installations. These solar markets, however, are relatively mature and have previously employed FiTs or solar energy credits, while as emerging markets in the MENA still need that initial push to get the industry started.

"You want to create an environment where the population is buying into solar and keen on installing the technology on their rooftops. If you look at European countries, what really kicked off the solar markets was the FiTs," says Ingolf Dorn, management consultant at Poyry, whose energy consulting business was commissioned by K.A.CARE in 2010 to assist in the preparation of a renewable energy action plan.

Abu Dhabi: self-regulating licenses

Abu Dhabi has similar plans to roll out a solar rooftop programme. After monitoring the performance of projects totalling 2.3 MW over the last two years, the Regulation and Supervision Bureau was tasked with proposing a framework for a 500 MW solar rooftop scheme.

"Abu Dhabi has always supported solar rooftop and this continues; however, unlike other jurisdictions, the emirate does not currently offer a Feed-in-Tariff or any other form of financial incentive," Saif Saeed Al Qubaisi, acting director general at the RSB, told SASIA. He added that there were no plans to introduce incentives for solar panel installations.

Today's scenario largely differs from the 2010 solar rooftop program initiated by Abu Dhabi Distribution Company (ADDC). Although the original plan also targeted 500 MW of installations, it promised an initial rebate and ongoing annual energy payments for system owners, who were required to inject the produced electricity into ADDC's grid.

Despite the absence of incentives, Al Qubaisi stresses that Abu Dhabi has been able to develop a good understanding of solar rooftop as a result of the various projects and installations that exist in the emirate. This understanding comprises aspects such as installation costs, operation and maintenance costs, and optimal cleaning regimes for the local environment.

Unlike the case in Dubai, rooftop projects in Abu Dhabi would have to go through the RSB, which has established a regulatory framework with the Abu Dhabi Distribution Company and Al Ain Distribution Company to allow for the private installation and generation of electricity using PV. The framework includes a special Self-Regulating License and an inspection programme for all would-be self-generators.

"The generation of electricity is a regulated activity under the law, therefore all solar PV installations on residential and commercial premises require a licence issued by RSB," says Al Qubaisi. "Anyone who complies with the installation requirements and Electricity Wring Regulations is currently able to install solar PV on their rooftop, so there is no restriction in terms of residential or commercial".

Asked on whether there were any limitations, Al Qubaisi highlighted that on individual rooftops, the maximum capacity would be determined by the available space for an installation.

"Typically, the PV system would connect to the premises' main electrical distribution board, which means that all electricity generated will be consumed internally in the first instance. In most cases, the PV generation would only offset a portion of the premises' power demand."

The RSB has already granted a number of self-regulating solar-power generation licenses to institutions across the emirate, including the German International School, Al Ain Zoo, Emirates Identity Authority, and the Abu Dhabi Judiciary. The majority of these installations were rooftop PV projects, and another 28 license applications are now being processed.

Solar-powered schools

The UAE is not alone in embracing solar rooftop. Saudi Arabia, the largest member of Gulf Cooperation Council, has also awoken to the potential of powering the country's thousands of schools with PV generated electricity.

As a first step, a technical committee comprising members from the Ministry of Education and KACST was formed last year to develop the programme and test it on schools within Al Khafji province. The project, which is being coordinated with K.A.CARE, is finally moving toward a nationwide deployment.

"Schools are major energy consumers, especially in Saudi Arabia, where air conditioning runs throughout the day and uses up massive amounts of electricity," highlights Browning Rockwell, executive director of SASIA. "Having solar installations on the Kingdom's schools will generate substantial savings in utility bills, enabling the schools to invest in other areas, such as educational

technologies or summer courses. Most importantly, it will ease the burden on the nation's electric grid."