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Home / Alternative Energy / Solar Energy

UAE Leading The Charge For Cheap Solar

By Alan Mammoser - May 08, 2017, 3:00 PM CDT

The remarkable fall in price of utility-scale solar energy continued this spring, with a winning bid of ?2.42/kWh for a planned 1.2 GW facility in Abu Dhabi. During the past three years, utilities in the Emirates have led the way in pushing down prices, due in part to the form of tender they have deployed. Their bidding model, now being used in other regions, should continue putting downward pressure on solar energy prices worldwide.

The price fall began with projects of the Dubai Electricity and Water Agency (DEWA), which is developing the huge Mohammed bin Rashid Al Maktoum solar park in the desert southeast of Dubai. DEWA's 2015 contract, with a consortium led by Saudi Arabia's ACWA Power, gained sudden worldwide attention. The utility agreed to pay ?5.84/kWh in a 25-year power purchase agreement (PPA).

The 200 Megawatt photovoltaic installation, which became operational this past March, clearly set a new global benchmark for price. The ?5.84/kWh tariff for solar was about 20 percent lower than any PPA signed before that does not receive tax credits or other subsidies. The normal price had been 8 to 9 cents, while the average cost for power produced from natural gas in the UAE is about 7 cents per kWh.

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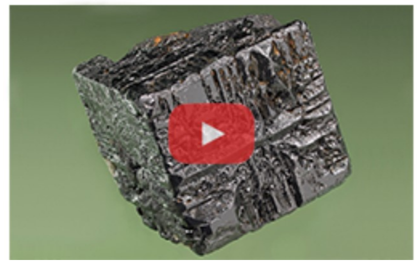
The price was nearly cut in half a year later. In June 2016, DEWA announced that a consortium led by Abu Dhabi-based Masdar Company was to build an 800 MW photovoltaic plant and receive ?2.99/kWh for the electricity it produces. It fell again this past March, when the Abu Dhabi Water and Electricity Authority (ADWEA) awarded a contract to a consortium led by the Chinese company JinkoSolar, for the massive 1.2 GW plant at its Sweihan site near Al Ain. ADWEA will pay ?2.42/kWh for energy from the plant, which is projected to be operating by early 2019.

This price cascade was helped by the utilities' willingness to approve projects much larger than requested in the original tenders, as the cost savings from greater scale became apparent. The contracts are based on an Independent Power Producer (IPP) model, build-own-operate with utilities buying power through PPAs.



But what really ignited the price decline was the approach to bidding adopted by the utilities. Instead of setting a tariff and inviting participants, they set a capacity and invited bidding on price.

"*With UAE's model, you tender at capacity, then see the price. Of course they get very competitive pricing, that's what's driving these very low costs,*" says Robin Mills, CEO of Qamar Energy, a consultancy in Dubai.

Mills also points to the importance of the low cost of capital, which has been a key factor in the Emirates. There, solar energy developers enjoy some of the lowest capital costs in the world. The big solar parks are set up to minimize regulatory and installation costs for developers. Debt is cheap because of ample bank financing in a stable political climate. Equity is also available as the utilities take majority stakes in the projects.

While these favorable conditions make the UAE a unique case, its bidding model has had worldwide impact. A lower cost for solar has now been established, changing the expectations of utilities across the globe.

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"I think the UAE's model is getting more and more popular," says Mills, pointing out recent of examples of similar contracts in Chile, India, and South Africa. He's now seeing it used in more risky places, such as Zambia and Jordan, where bids are coming in at about 6 cents. The cost remains higher than in the Emirates, but is still dramatically lower than what it was just a few years ago.

Clearly, the pricing of new utility-scale solar power has changed dramatically during the past three years. The bidding model adopted by utilities in the Emirates set off a price cascade that has been felt worldwide. Looking ahead, investors should consider which countries will most benefit, and what can be anticipated in terms of further declines.

By Alan Mammoser for Oilprice.com

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