



THE SUN IS SHINING BRIGHTER ON THE SANDS

Middle East's Solar Revolution And Warfare

A lot is happening in the sunny and sandy fields of the Middle East. In a region where oil was the undoubted king, solar power is emerging as a strong leader. The region receives plenty of sunshine throughout the year, hence making solar an attractive option.

Why is the oil-rich Middle East that used to cater to its power demands from thermal power keen in switching to green solutions? Middle East Nations realised quite early that investments in renewable energy and abandoning fossil fuels for electricity generation is the key to future prosperity. These Nations also realised an eventual end to their oil reserves, thus leading to climate change initiatives and adopting global shift towards renewables.

At present, the region is at the forefront of the race to decarbonise energy production. According to the Middle East Solar Industry Association (MESIA), energy investment in the Middle East region could hit more than \$1 trillion by 2023.

While oil may remain the primary economic engine for the Middle East for years to come, renewable energy is gaining substantial new interest and investment from both governments and private-sector energy firms within the region and worldwide. Prominent names like Acwa, Taqa, Masdar, EDF and Marubeni etc. have invested heavily in the region and may continue to do so in the future.

UAE, Saudi Arabia, Oman & Qatar have drawn aggressive plans for implementing large-sized projects in the region in various phases. Projects in range of 6GW plus are in the various stages of development and implementation in Saudi Arabia and 5 GW plus in UAE.

Another interesting point to note in these Solar projects is the "Price Wars" leading to significant players in the region outpricing each other by offering aggressive and record low prices. Each time a new bid is opened, a new record is being set.

One of the recent bids in Abu Dhabi for 2 GW Al Dhafra Solar Project saw a record low tariff of 1.35 cents/kWh. It was preceded by another project of Dewa at a tariff of 1.6953 cents/kWh. Another project in Qatar was awarded at a tariff of 1.6 cents/kWh, which was considered the lowest for a solar project.

These low bids are also backed with high-quality assurance, thanks to favourable tax regimes, assured long term power offtake agreements, besides projects locations closer to consumer centres resulting in lower transmission costs and losses.

A decade ago, solar generation costs were well above 30 cents per kWh. At present, the best solar projects in the Middle East can achieve drastically lower prices, thanks to continuous technology innovations that are driving down costs further.

Abu Dhabi, Dubai and Saudi Arabia have been passing the crown to achieve the cheapest renewable energy over the last several years now.

All these “Price Wars” are directly benefitting Middle East Nations and helping their economies in the long run. *In an interview, the Crown Prince of Abu Dhabi, Sheikh Mohammed bin Zayed appeared to embrace the change and said: “In 50 years, when we might have the last barrel of oil... I can tell you we will celebrate that moment”.*

TCE has been associated with more than 13GW of solar projects, including 4GW in the Middle East region working closely with some developers.

Energy Transition in the Middle East

- The Middle East has long been associated with high-polluting fossil fuels — but now set to become a global leader in the energy transition towards zero-carbon sources.
 - The region that was reliant on its Natural reserves for several decades is increasing its stake in renewables over the past few years to limit the impacts of climate change.
 - One of the key challenges the region faces is water scarcity, so need for regional governments to invest heavily in water, with the private sector’s involvement.
 - Given the region’s abundant renewable energy resources, availability of investment capital, landmass and infrastructure, the Gulf states are in prime position to take the reins in the green hydrogen market, which is in early stages but much projected to be a growth area for the region.
 - The region has taken steps to reiterate interest to policymakers in the region to implement projects like CO2-free hydrogen despite the lack of a regulatory framework for the licensing.
 - Since Q2 of 2020, fossil fuel consumption and CO2 emission levels have plummeted, renewable energy has re-emerged at the forefront of discourse. Businesses have been subject to and will continue to face mounting pressure from the public, regulators, industry experts, organisations and governments to focus more heavily on ESG policies.
- With demand for energy continuing to rise in the region and increasing pressure from governments, investors and consumers to support the industry’s decarbonisation, the energy transition is set to remain at the forefront of regional governments’ priorities.

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References:

- <https://www.americansecurityproject.org/a-bright-future-the-middle-east-solar-revolution/>
- <https://www.powermag.com/record-low-solar-prices-drive-middle-east-projects/>
- <https://www.pv-magazine.com/2020/01/17/mesia-outlines-past-progress-future-promise-in-sweeping-look-at-solar-across-middle-east-and-north-africa/>
- <https://www.euronews.com/2020/06/12/as-solar-energy-rises-in-the-middle-east-will-the-sun-set-on-the-oil-gas-sector>
- <https://www.greentechmedia.com/articles/read/how-mena-could-go-from-oil-rich-to-carbon-free>
- <https://www.scientificamerican.com/article/solar-power-invades-oil-rich-middle-east/>
- <https://www.powermag.com/record-low-solar-prices-drive-middle-east-projects/>
- <https://www.offgridenergyindependence.com/articles/16269/renewable-energy-most-competitive-source-of-new-power-in-gcc>
- https://www.researchgate.net/publication/326032793_GCC_Power_Grid_Transforming_the_GCC_Power_Sector_into_a_Major_Energy_Trading_Market
- <https://solarmagazine.com/sun-on-the-sand-middle-east-and-north-africa-mena-turns-to-solar-power/>
- <https://www.weforum.org/agenda/2019/03/solar-is-powering-the-middle-east-towards-renewables/>
- <https://www.forbes.com/sites/dominicdudley/2020/04/28/abu-dhabi-cheapest-solar-power/#5be392fc4924>
- <https://www.saurenergy.com/solar-energy-news/adpower-gets-record-low-solar-pv-price-for-2-gw-project-in-uae>
- https://www.researchgate.net/publication/328147444_Evaluating_the_factors_that_led_to_low-priced_solar_electricity_projects_in_the_Middle_East
- <https://www.worldconstructionnetwork.com/news/acwa-power-consortium-closes-financing-for-500mw-power-project-in-oman/>
- <https://commodityinside.com/reports/solar-energy-market-in-middle-east/>
- <https://www.saurenergy.com/solar-energy-news/the-solar-rush-in-the-middle-east-picks-pace>