

# Marubeni and Jinko's Sweihan solar, United Arab Emirates

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The world's largest solar project with 1,177MW of capacity reached financial close in May 2017. Sweihan offers the world's lowest headline tariff for solar electricity and may mean Abu Dhabi can delay its next solar procurement.

Procurement authority Abu Dhabi Water and Electricity Authority (ADWEA) called for expressions of interest in developing a 350MW photovoltaic project in December 2015 shortly after *IJGlobal* had [revealed plans for the new solar programme](#).

Although the project began life less than a third of its final size it was reportedly expanded as more land became available. Developer's bids were ranked on tariff offered as well as how many MWh of energy they could provide over the life of the contract, a source at ADWEA said, noting that the 350MW figure was not as important to the procurement as the total electricity that could be generated.

[Japanese sponsor Marubeni and Chinese manufacturer Jinko offered electricity at Dh0.08888 per kWh \(equivalent to \\$0.0242\)](#) – which remains the cheapest headline tariff price for solar in the world. The consortium also offered 24.42 million MWh of electrical energy putting them ahead of the competition.

The second ranked bidder, EDF with Masdar, offered 24.36 million MWh of electricity at Dh0.09304/kWh.

Abu Dhabi is aiming to have renewables make up 7% of its energy mix by 2020. The Emirates as a whole is aiming to achieve 44% energy production from renewables by 2050 with 38% from gas, 12% from cleaner fossil fuels, and 6% from nuclear power.

ADWEA had 15,546MW of generating capacity as of 2015.

## Future solar

ADWEA is not planning new solar, not in the immediate future, anyway. If ADWEA had stuck to a 350MW capacity project it may have needed to begin a new procurement after the close of Sweihan, a source at the authority told *IJGlobal* – [rebuffing local reports of a new procurement under development](#).

However with 1,600MW of gas-fired capacity coming online in 2017 along with 5,500MW of nuclear power under construction at the Barakah project it's unlikely that as much new capacity will be needed so soon, the source said.

Electricity demand is growing at around 3-4% at the moment, reduced from around 11% per year in 2011, according to demand forecasts from ADWEA's parent Abu Dhabi Water and Electricity Company.

ADWEA is planning to undertake other solar projects in the future although it has not yet identified a specific development.

“There is still an expectation that there will be follow on projects – just no timetable has been established as yet,” one of the sources said.

## About that headline solar price

Marubeni and Jinko have achieved an impressive headline tariff price for the project, making it the lowest cost solar in the world. Their nearest competition comes from Chile, where Solarpack bid \$0.029/kWh in a 2016 auction.

However the \$0.0242/kWh that the winning consortium offered doesn't tell the full story – that represents the cheapest amount ADWEA will pay for electricity from the plant. During times of higher demand such as the hotter summer months between June and September, [ADWEA will pay a multiplier of 1.6 times the headline tariff](#).

Despite this the project still runs cheaper than power from natural gas, which comes to around \$0.06/kWh.

Sponsors vying for the Sweihan project were able to offer low tariffs for a number of reasons. One of which is that ADWEA set the project's internal rate of return (IRR) at 7% compared to Dubai's Electricity and Water Authority, which set an IRR of 10% for its Rashid al Maktoum project, according to reports.

The 800MW Rashid al Maktoum project is under development by Masdar in consortium with EDF Energies Nouvelles. Masdar originally won the tender in a consortium with Fotowatio Renewable Ventures (FRV), bidding a then world record-low tariff of \$0.0299 per kWh in June 2016. FRV pulled out of the project in March this year and was replaced by EDF.

Another reason for the cheaper tariff is that capital expenditure on solar projects has become lower. This is in part due to [excess solar modules from bankruptcies in the manufacturing and developer segments](#), *IJGlobal* reported in January this year.

Bids offered in solar tenders across the region have dropped substantially since 2011 as a result. Economies of scale also play a part, with Jinko usually manufacturing 6,000MW of panels annually – providing the full 1,177MW of capacity for Sweihan will take up a sizeable chunk of its production.

Lastly, Abu Dhabi enjoys relatively low debt pricing, with Sweihan beginning at 120bps. Masdar's project, by comparison, is expected to have debt pricing starting at around 200bps.

## Sweihan's financing

A [\\$650 million financing for Sweihan](#) was signed on 18 May 2017. Financial close was achieved on 24 May, Jinko said in a statement.

[Lenders on the deal](#), previously reported by *IJGlobal* and confirmed by Jinko at the time of close, include:

- Bank of Tokyo Mitsubishi UFJ (documentation bank and global facility agent)
- MUFG
- SMBC
- Norinchukin
- Natixis
- BNP Paribas
- Credit Agricole
- First Abu Dhabi Bank

Norinchukin is taking the largest ticket, lending around \$150 million. The debt has a tenor of 26 years.

[Marubeni is opting for a soft mini-perm structure](#) with an 80% cash sweep five years after financial close that will step up periodically. Debt pricing starts at 120bp over above Libor, rising to 190bp when the cash sweep kicks in around three years after completion. It will later rise to 250bp, a source said.

Equity interests in the project include:

- ADWEA (60%)
- Marubeni (20%)
- Jinko (20%)

The sponsors funded their interests with equity bridge loans.

## Advisers

Law firm Akin Gump, financial adviser Alderbrook and technical adviser Fichtner [supported ADWEA in the tender process](#).

Marubeni completed its financial advisory in-house with Norton Rose Fulbright acting as legal counsel.

The lenders received legal advisory from Shearman & Sterling.

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