

## Tokyo energy storage market analysis

The Japanese PV market has enjoyed considerable prosperity over the last few years. 2012 saw capacity more than double thanks on the back of subsidies and new installations in 2015 reached a peak value of 10.5GW.

The FiT rate has experienced decreases for six consecutive years since 2013. The purchase price in 2019 is 26-28JPY/kWh for systems with capacity lower than 26-28kW, and 18JPY/kWh for those with capacity higher than 10kW. The Japanese Ministry of Economy, Trade and Industry announced in June 2019 a gradual elimination of the FIT.

With declining subsidies, Japan's PV market is already shrinking. According to Bloomberg New Energy Finance (BNEF), newly installed capacities fell to 8GW, 7.5GW and 6.5GW respectively in 2016, 2017 and 2018.

"7.5GW was installed in 2019, and we expect 8GW to be installed in 2020, most of which comes from projects over 10kW," Sun Xiao, country manager for Sungrow Japan, told PV Tech. Compared to the enormous 10.5GW in 2015, 7-8GW of growth represents only a degree of stable improvement, slightly better than the last two years.

According to an executive from a well-known Chinese module producer, "The growth number of megawatt-level PV plants has dropped sharply since 2015, led by the decreasing purchase price, increasing restrictions on grid-connection, and less land available for building megawatt-level PV plants."

To accelerate the drop in PV power cost, the Ministry of Economy, Trade and Industry initiated the competitive tender system in 2017 and further expanded the scope of tender in 2019, when the threshold for bidding fell from 2MW to 500kW.

MW-scale plants dominated the Japanese market in the past, but due to adjustments in subsidies and other policies, its percentage is falling year by year, while distributed and rooftop projects stand out and have become centre-stage.

Sun Xiao said, "The FiT subsidy system is, to an extent, keeping the LCOE up. The price is eventually paid according to electricity consumed. Now the Japanese government is introducing a competitive tender to reform the electricity system."

LCOE in Japan is now around 11.8-14.6JPY/kWh, already cheaper than grid power, which has laid a foundation for the marketisation of PV power. According to some industry analysis, the LCOE will continue to fall, to a level as low as 5.3 to 5.7JPY/kWh.

The shrinking Japanese market is also encouraging organisations to reflect on their strategy. Companies like Panasonic are gathering force in the household solar market and moving into energy storage. The Japanese authorities have set a quite ambitious target for energy storage, saying they would strive to improve Japan's energy storage capacity by 2020, to a level representative of a 50% share of the global market.

Sungrow shares the same view as Panasonic. Sun Xiao said, "The Japanese solar market will be led by distributed PV in the future, while the whole market is likely to shrink a lot in 2021. We believe the prospect will be better and better for household energy storage."

Statistics show that household energy storage accounted for 50% of annual growth, in total 267MW/507MW was deployed in 2019. The residential FiT of about 530,000 Japanese households (2GW) expired in November 2019, and the number of households whose FiT falls due is about 200,000-300,000 each year.

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