

Business as usual

Japan | After the frenzied highs of several year ago, Japan's PV market has quietened down somewhat. But As Izumi Kaizuka writes, ongoing policy and market reforms and the evolution of new technologies look set to ensure strong continued growth for the foreseeable future

In the Japanese PV market in 2018, the business related to distribution, sales and construction of PV systems is expected to continue, as the construction of PV projects approved under the former feed-in tariff programme, which have not started operation for a long time, will begin; a large numbers of projects are expected to begin operation hereafter. Although the purchase prices will be reduced in FY 2018, the stronger companies which are able to keep profit will lead the market, with the further progress in innovation, improvement, rationalisation, optimisation, and development in various aspects of business. In terms of policies, discussions around increasing Japan's energy mix will advance, and measures to address the issues obstructing the large-volume introduction of renewable energy, with a particular focus on grid integration, are scheduled to be announced. As both the business environment in the industry and the business predictability will be improved under the anticipated policies, it is expected that engagement in the renewable energy business will expand further.

In terms of installation, it is expected that a certain amount of installation will be secured, due to the construction and operation of PV projects approved under

the former FIT programme, but which have not started operation for a long time, the increase of the overpanelling ratio of PV modules, and the recovery of the residential market boosted by storage batteries and zero-energy homes (ZEH). The PV installed capacity in the Japanese market in 2018 (calendar year) is expected to decrease or increase a little year on year to between 6 and 7.5GWDC (according to the forecasts of several scenarios) as shown in Figure 1.

The main direction of each sector that supports the PV market in 2018 and beyond is expected to be as described below:

The national government will promote establishment of new rules to introduce cost-competitive renewable energy and to get over the grid restrictions, under the new FIT scheme. By presenting the efforts to address the issues towards large-volume introduction of renewable energy with a focus on the grid issues, and the policies for increasing the energy mix, the predictability of the power generation business will be improved, and the projects of renewable energy will start to move towards the realisation.

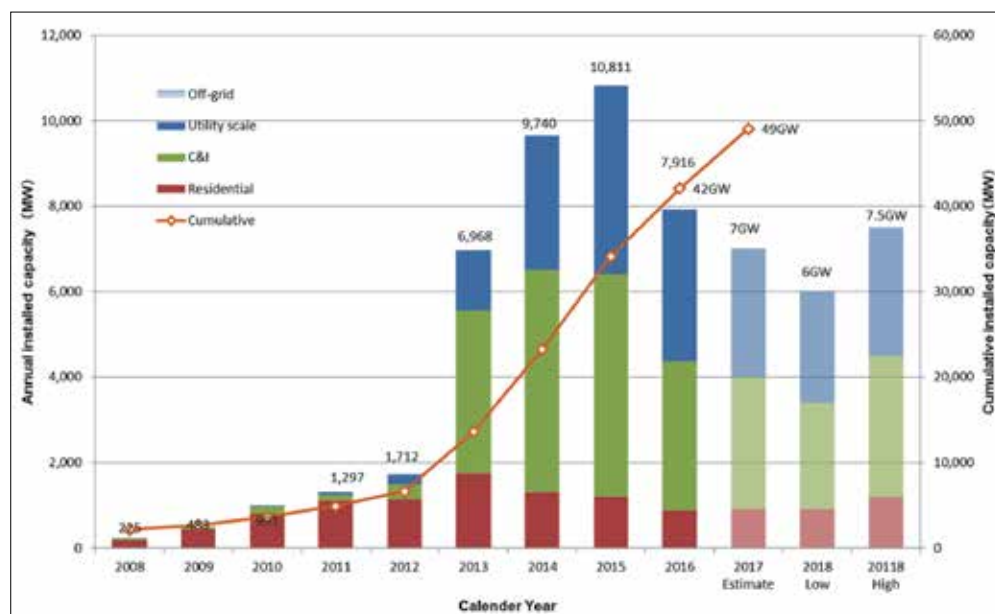
For local governments, the long-term stable operation and the co-existence with communities will be the most important

theme of renewable energy, and efforts to promote orderly and proper installations will be advanced further. On top of these efforts, the movement to promote local production and local consumption of energy will expand in cooperation with private companies, and the services provided by the regional 'power producer and suppliers' (PPS) companies will be diversified. PPS companies were created as a result of Japan's electricity market deregulation.

Electric utilities will promote efforts to respond to the new market design and complete the electricity system reform process. Efforts will be made to activate the retail electricity market, while efficiency will be improved by cooperation among regions, with the enhanced adjustment function of supply and demand for the increasing installation of renewable energy. In some regions, output curtailment of PV systems is expected not only on Japan's more remote islands but also on the mainland.

In the PV cell/module and system business, major domestic companies will proceed with restructuring of the PV cell/module manufacturing framework to speed up improvement of profitability and enhancement of competitiveness. In Japan, progress will be made in cost reduction and performance improvement of products. In the market, in addition to the successive launches of new products mainly for residential applications, the proposals of solutions for residential applications will become more active. These solutions include integrated storage batteries and home energy management systems (HEMS) for self-consumption, which correspond to dissemination of the ZEH policy and the fact that in 2019 the first FIT recipients from 2009 will see the purchase period under the FIT end, meaning they will have to sell surplus power at a reduced rate or for free. In the non-residential sector, development of new applications will be enhanced such as floating PV systems and solar sharing, and efforts will be made for establishing 'virtual power plants' (VPPs) which include MW-scale PV power plants

Figure 1. Possible scenarios for Japan's PV deployment in 2018. Source: RTS Corporation



Japan's large-scale PV market is set for a partial revival with the completion of projects approved under the old FiT programme



Credit: Kyocera

with 1,500V specifications and renewable energy. The market development will be enhanced, appealing the added values which correspond to the demands of users, such as bifacial power generation and high weather resistance, in addition to higher output and higher quality.

For the inverter business, while the residential applications are expected to recover, the industrial applications will be stable or decrease gradually. In the market of residential inverters, domestic manufacturers such as Omron, Panasonic and Tabuchi Electric will remain advantageous. Out of the two types of industrial inverters (the central inverters manufactured by TMEIC, Hitachi, Nissin Electric, Fuji Electric, DAIHEN, SMA, etc. and the distributed inverters manufactured by Delta Electronics, Huawei, SMA, Tabuchi Electric, Sungrow, etc.), the distributed inverters are expected to expand their market share. In terms of technology, 1,000VDC inverters for industrial use and the transition to smart inverters will advance.

In the supporting structure business, progress will be made in the improvement of material procurement and reduction of items, development of simpler construction methods, and rationalisation of business including distribution and sales, as the pressure to decrease the total cost is intensifying. The launches of new products with high added value, such as the durability against wind and snow, will increase as well.

In the storage battery business, as the market of residential storage batteries expanded in 2017, manufacturers such as SHARP, Choshu Industry, Panasonic and

KYOCERA gained a significant market share. The market of storage batteries in FY 2018 is expected to expand as well, by encouraging the projects, whose FiT purchase period will expire in and after 2019, to shift to self-consumption. The installation of industrial storage batteries increased in the area of Hokkaido Electric as a measure to mitigate the sudden output fluctuations. Hereafter, as the price decreases, the use of storage batteries for self-consumption will increase.

In the housing business, with the trend of obligation for buildings to conform to energy conservation standards and the dissemination of ZEH policy, the standard installation of PV systems to newly built detached houses and collective housing (condominiums/apartments) will expand further. Also, in the existing housing market, the launches of cost-effective products will increase. As the 'Year 2019 issue' approaches, the coupling of PV systems with storage batteries and HEMS linked to smart devices will increase. It is expected that a variety of product lineups that correspond to the demands of users will be available, as the entries of overseas manufacturers into the market increase. It is forecasted that new business models will increase, such as the combination of electricity sales and other services.

In the EPC business, companies which deal with large-scale projects have large numbers of back orders, as many large-scale projects are remaining. Since the number of projects with revoked approval was smaller than expected, it is estimated that a certain portion of projects will make progress.

In the PV business support service segment, competitive conditions will

remain the norm, because large numbers of companies are entering the market, drawn to the stable long-term prospects on offer in the operations and maintenance (O&M) business. Among these companies, some will take charge of O&M in addition to EPC, while others are from different industries. Progress will be made in the enhancement of the O&M function and ongoing cost reductions, utilising the Internet of Things and artificial intelligence.

In the PV business, the approval of PV project business plans was finalised, and the number of the projects whose business plans were finally approved after the deemed approval status, turned out to be larger than expected. Therefore, the construction and operation of large-scale projects is expected to increase. It is expected that the requirements for the tenders will be eased, in order to encourage the participation in the tenders for PV projects with a capacity of 2MW or more. The low-voltage projects, which are not applicable to the tender process to secure the grid connection capacity, are expected to increase as well.

In the area of the Power Producer and Supplier (PPS), the rush of new entries will slow down, and the services provided by the existing players will be diversified. With the start of the transaction of FiT electricity in the non-fossil value trading market, progress will be made especially in the electricity supply service, utilising non-fossil certificates (environmental values).

In the financial industry, active investment from overseas in renewable energy, including PV, will continue, with the growth of environmental, social and governance investment and the increasing attention to the infrastructure business. Domestic companies are also expected to promote business expansion, targeting the continuously growing overseas markets. ■

RTS Corporation will be at PV Expo Japan at booth E45-33

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