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Project, Energy and Infrastructure Finance Client Alert:
Japan's Solar PV Market – Some Observations

Japan has seen significant investment in its renewable energy market, especially in solar photovoltaic ("PV") projects, since the introduction of the feed-in-tariff ("FIT") regime for renewable energy in July 2012 (under the Act on Special Measures Concerning Procurement of Renewable Energy-Sourced Electricity by Electric Utilities (the "Renewable Energy Act")). The FIT regime was adopted to accelerate more investment in the renewable energy sector and introduce greater diversity in Japan's power mix following the Fukushima earthquake and the subsequent shut down of nuclear power plants across Japan. This article will provide a brief overview of the Japanese solar PV market and the effects of some of the recent legislative changes to the FIT regime on such market.

JAPANESE SOLAR PV MARKET – OVERVIEW

The Japanese FIT regime came into effect on July 1, 2012 and at the time was among the most generous in the world. The FIT regime obliged utility companies to purchase (at designated rates for fixed periods) electricity generated by renewable energy producers approved by Japan's Ministry of Economy, Trade and Industry ("METI"). Different FIT rates were set for different types of renewable energy sources (e.g., solar, wind, biomass, etc.). The generous FIT rates coupled with the long-term power purchase agreements with utility companies attracted significant interests from investors, both domestic and foreign. Japan enjoyed a vibrant market for renewable power, in particular in the solar sector which accounted for approximately 60% of the total FIT applications in Japan. As at the end of 2016, the installed solar capacity in Japan stands at around 43GW; this accounts for around 4.3% of the total 2016 electricity production according to METI data. The Japanese government is currently forecasting solar power generation to meet around 10% of total energy demand by 2050.

Market Participants

Domestic Japanese solar developers, sponsors and trading companies were the initial pioneers in the solar energy sector. In addition to these typical players, the FIT regime also attracted non-traditional energy sector sponsors such as Softbank and asset managers to participate in greenfield solar projects, including rooftop solar. Following in the footsteps of the domestic developers/investors, non-Japanese developers, renewable energy companies, private equity/investment funds, banks and even mining companies also sought opportunities to enter the Japanese solar market, investing directly or often partnering with local or other foreign investors/financiers. Wirsol (Germany), General Electric and Goldman Sachs (US), Gestamp Solar (Spain), Banpu and Kasikornbank (Thailand), Macquarie Group (Australia), Total (France) and Hanwha Asset Management (South Korea) are notable entrants into the Japanese solar market.

Other than development of greenfield solar projects, a secondary market has also started to take shape for investment in brownfield or late-stage greenfield solar assets or the acquisition of portfolios of solar assets. For example, in early 2016, Thailand-based Bangchak Petroleum acquired the entire Japanese solar power business of SunEdison which included operational solar projects across Japan. It is expected that this secondary market will grow; the appetite of new investors in turn provides a greater variety of exit options for solar developers in particular as solar projects reach commercial operation. In addition, as at the end of March 2017, three infrastructure funds holding predominantly interests in solar projects across Japan were successfully listed on Tokyo Stock Exchange's infrastructure fund exchange.

Funding Options

The Japanese "mega" banks and smaller regional banks have typically led the financing of Japanese solar projects. Some bank debt in the renewable sector (such as for wind power) achieved ratings (by Rating & Investment Information, a unit of the Nikkei Group). Other than conventional bank debt, a number of "green" rated project bonds have also been successfully placed. Japanese pension funds and life insurance companies have also started to participate in the financing of renewable projects, including solar projects. For example, in February, Japan Post Insurance Co Ltd and The Dai-ichi Life Insurance Company closed a debt financing for two large-scale solar projects as part of their asset management partnership formed in March 2016. Participation by such non-traditional project lenders is perhaps unsurprising given the current ultra-low interest macroeconomic environment in Japan as these institutions seek better yields on their investments (compared to other fixed interest products such as government bonds). If interest rates continue to remain low in Japan, similar institutional investors may follow suit in search of higher returns. The rating of project debt/bonds should further enhance the attractiveness of such products to such institutional investors and provide further financing sources for solar and other renewable projects in Japan.

RECENT CHANGES TO THE FIT REGIME

Recent changes were made to the Japanese FIT regime (by way of amendments to the Renewable Energy Act) which took effect from April 1, 2017. These changes are driven by a number of objectives, including (a) achieving better control over the growth of renewable projects, in particular the concentration in solar projects relative to other renewable projects; (b) increasing competition and improving the cost-effectiveness of renewable projects to promote gradual independence from the FIT regime; and (c) reducing renewable electricity costs for the general public. Some of the key changes to the FIT regime are noted below.

New Certification System

Under Japan's current FIT regime, each renewable project has to be approved/certificated by METI in order to be eligible for the relevant FIT rates. The recent changes to the FIT regime introduced tighter requirements to the certification process to require developers to provide more detailed information about their proposed project. For example, new applicants must now submit a detailed "business/project plan" setting forth information such as the location of the facility, proposed interconnection arrangements, maintenance plan and expected operation date. Existing projects deemed re-certified under the new system are also required to provide a project/business plan to METI by September 30, 2017. Failure to submit a project/business plan by the due date may result in the loss of the METI certification for existing projects. In addition, failure to commence operation within three years of the certification date may result in reduction in the purchase period or purchase price of the electricity produced by the relevant project.

From a developer/investor's perspective, the new certification and time limitation requirements impose additional burdens for the development of solar projects in Japan. However, the changes can also be seen as the next step in the evolution of the Japanese solar market in ensuring that "only the fittest projects survive" (i.e., delayed and less-viable projects will lose out to stronger and better-managed projects).

The speed at which investment has flowed into the Japanese solar sector has also given rise to grid connection issues; construction delays have also adversely impacted a number of project sites. Currently, only about a third of the certificated solar projects have actually begun operation and solar company bankruptcies in Japan also hit a record high of 65 companies by the end of 2016.

These new "quality control" measures introduced by the Japanese government should result in better planning, management and growth of the renewable sector and lead to greater development certainty for developers and the actual successful implementation of renewable projects.

Competitive Auction

Another notable feature under the amended FIT regime is the introduction of a competitive reverse auction process for solar projects with a capacity greater than 2MW. Under the new system, METI will solicit bids from developers for a certain identified generation capacity. The first bid, planned for late 2017, is expected to be around 500MW. Bid prices may be offered by bidders, denominated in Japanese Yen, and each bidder will be required to post a bond in support of its bid submission together with a project/business plan.

The intent of such a competitive auction system is to promote greater competition among solar developers and ultimately lead to a reduced electricity price for consumers. Although the FIT regime has been effective in incentivising investments in the renewable sector, the generous FIT rates have had an adverse impact on domestic electricity prices as the costs of the Japanese FIT regime are (indirectly) borne by Japanese consumers in the form of a renewable energy levy included in their monthly electricity bill. The shift from a FIT regime to a competitive auction process for large-scale solar projects is unsurprising given solar projects have comprised the bulk of investment in the renewable sector to date. A competitive auction regime is also in line with the trend seen in a number of jurisdictions with maturing renewable energy markets such as Germany and Abu Dhabi of moving away from a FIT regime to market-based auctions.

CONCLUSION

The existing Japanese FIT regime has been an effective tool in growing solar energy generation capacity attracting a wide array of domestic and international investors. The low interest rate environment and debt liquidity provide a number of financing options and both traditional and non-traditional lenders are keen to provide liquidity to support investments in Japanese solar projects.

Recent changes to the Japanese FIT regime will tighten the FIT certification processes and timeframe for developing solar projects in Japan. The nature of the new competitive auction system to determine pricing will also impact the economics of large scale solar projects. These measures are likely to lead to further consolidation of solar projects in the Japanese market (providing acquisition opportunities) but also to a more disciplined solar power generation environment where only the strongest projects will survive.

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