

The 418th Forum on Research Work, December 19, 2014

Electric power and renewable energy outlook and challenges for 2015

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Electric power system reform and tight supply-demand

1. The first phase of the electric power system reform will take effect in April 2015, and it is scheduled to include the establishment of the Organization for Cross-regional Coordination of Transmission Operators (hereafter OCCTO). In fiscal 2015, we expect to see advances in preparation work for the full liberalization of the retail electricity market in April 2016. This will accompany the introduction of a new licensing program in related functional fields (power generation, transmission and distribution, retail supply). The third phase of the provisions of the Act for Partial Revision of the Electricity Business Act is also scheduled to be submitted during the year to the Diet. The provisions, however, may become a topic of dispute due to concerns related to the delay in resuming the operation of nuclear power facilities and electricity costs.
2. Meanwhile, the fact that the operation of a regional organization system by OCCTO operators is slated for April 2016, and mandatory submission of Electric Supply Plans by Power Producers and Suppliers (hereafter, PPS) may be slightly delayed its enforcement timing from the original target of April, there is a question that will need to be answered regarding who will be responsible to conduct a short-term reliability evaluation to gauge their supply capability for summer 2015. It may depend on the timing of the PPS Supply Plan submission; I believe that the Electricity Supply-Demand Verification Subcommittee should continue to perform necessary verification.
3. More companies are leaving Tokyo Electric Power Co., Inc. (TEPCO) to PPS, possibly reaching up to 10% based on the demand-scale (kW). General electricity utility companies will maintain their unilateral obligations to ensure stable power supply during fiscal 2015. TEPCO must sustain adequate capacity to cover area demand as PPS supply capacities and imbalances (supply-demand deviation that occurs when fulfilling a simultaneous, equivalent-volume supply obligation) have not been confirmed. We have come to a time where these issues need to be addressed during the short-term reliability evaluation.
4. The concern we had for mid-western Japan (60Hz area) during the Summer of 2014 resulting from an unplanned shutdown at a thermal power station, of seeing a reserve margin percentage of below 3%, did not come true and the area was saved from experiencing tight supply thanks to a cooler summer. The trend indicated in recent governmental examinations of supply and demand is somewhat alarming as customers' low awareness with respect to energy conservation is more prevalent, and more focus is placed on encouraging suppliers' efforts to meet demand. Considering the fact that local electric power companies

have dealt with tight supply-demand since winter 2011, continued work needs to be done to raise awareness of the importance of power use reduction.

5. One notable incident occurred within the grid of Hokkaido Electric Power Co., Inc. in winter 2013: an unplanned service interruption at a 700 MW thermal power station led to an extremely difficult supply-demand situation. We may find ourselves facing a similar challenge if any unexpected shutdown of large-scale thermal power facilities occurs during the 2014 winter season.

Energy feed-in tariff system

1. The approved generating capacity for the feed-in tariff (FIT) system of renewable energy generation that launched in July 2012 has reached 81.01 GW, with 20.66 GW already in operation, when including the amount switched from the previous RPS system in which power producers were mandated to purchase a certain percentage of renewable energy as of the end of July 2014. A review of only the post-FIT capacity reveals that an extremely high portion comes from solar power generation; photovoltaic power accounts for 96% of the approved generation capacity of 72.21 GW, and 98% of the operating generation capacity of 11.86 GW.
2. It has been noted that new solar power companies are reaching maximum capacity as large-scale solar-power projects by Hokkaido Electric Power, followed by Okinawa Electric Power, resulted in a decision to restrict/suspend new applications for facilities over a certain size in December 2012. A rush of new applications with an approved capacity of 27.43 GW prior to the scheduled purchase price change in March 2014 prompted Kyushu Electric Power, Hokkaido Electric Power, Tohoku Electric Power, Shikoku Electric Power, and Okinawa Electric Power companies to announce their refusal to accept new applications (purchasing programs for general households continued, except by Okinawa Electric Power) in September of the same year.
3. In response, it has been decided that a newly established working group under the New and Renewable Energy Subcommittee will conduct a governmental review of the FIT system, as well as a verification process regarding connectible value and measures for expansion. While partial guidelines¹, such as those regarding sharing costs to enforce facility for power transmission and distribution, have been established, a comprehensive examination will be carried out in the future.

Future Work

1. Future discussions are expected to be held regarding the mid-to-long term caps on adopting renewable energy, and the cost-effectiveness of promotional measures. During this process, care must be taken to maintain the liberalization and integrity of the energy industry, where measures to promote implementation are in progress.

¹ It aims to equalize burdens, by adopting a bidding system when investments are needed to enhance FIT-approved facilities to connect electricity transmission and distribution to the grid.

2. For example, as electricity retail suppliers are the purchasers of FIT electricity, if storage batteries are used to control surplus electricity for intermittent renewable electric power, the beneficiaries of policy assistance will be the electricity retail suppliers. This scenario, however, raises valid concerns to be discussed, as it would potentially impact the playing field among the electricity retail operators with respect to the sizes of the provided subsidies. Another example in response to the same intermittency may involve additional costs that are incurred to renovate thermal power stations for better flexibility. There have been no clear guidelines established for determining how investments will be made by concerned parties within the market mechanism.
3. Through such extensive discussions, an implementable, best mix of energy options for society should be explored.

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