

English translation of “Nikkei Keizai Kyoshitu” published in “Nihon Keizai Shinbun” on March 8, 2016

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The Japanese electricity market, which has the market size of 150 billion dollars, is opening up this April. Should it succeed, this reform will be the largest electricity deregulation in the country’s history and is likely to bring an opportunity for the Japanese economy for two reasons.

First, this reform will bring competition to its electricity markets, which have been monopolistically operated by vertically-integrated local electricity companies. The competition is expected to improve efficiency of electricity generation and retail services, which have been suffered from inefficiencies in the absence of economic incentives. An appropriate competitive environment can help consumers see lower electricity bills.

Furthermore, as non-traditional electricity companies enter the market, they may come to provide value-added energy services derived from their industry knowledge and strength. Such new innovative services could be catalyst to business opportunities not only domestically but also internationally as active introduction and technology advancement continues for renewable energy worldwide.

This article explains key factors to the success of this reform, referencing lessons learned abroad.

An electricity market comprises three sectors: generation, transmission and distribution, and retail. As one can see in the left side of the figure, all of the three sectors had been operated by local monopolies worldwide until 1990s. Usually, deregulating electricity markets refers to a shift from the left side to the right side.

Reforms in many countries generally took the following process. First, transmission and distribution were unbundled from a local monopolist, making it an independent entity. Proper unbundling is the key to prevent the local monopolist from providing unfair access for new entrants to transmission lines.

At the same timing, the deregulation of the generation sector takes place. This allows anyone to build power plants and generate electricity. Numerous economic empirical researches have showed that competition in the generation sector lowered the cost of electricity generation. Under rate-of-return regulation, there is no incentive for power plants to cut costs; however, deregulation forces all power plants to operate efficiently because they have to sell electricity at

market prices. What usually happens at the last stage of the reform is the deregulation of the retail sector.

There are four points that are key to the success of the Japanese electricity reform. First, the government has to get through all steps proposed by the current administration. According to the plan, retail deregulation takes place this April, but the unbundling of the transmission sector won't happen until 2020.

The second key point is to ensure fair access to transmission and distribution lines. Not having fair access to transmission lines prevents proper competition even if new companies want to enter generation or retail markets. Japan plans to implement "legal unbundling," which leaves a financial relationship between a unbundled transmission company and its parent company, which is a current local monopoly.

The legal unbundling isn't as assuring as the methods of unbundling taken by other countries in the past, and it requires continued monitoring from regulators. For instance, many states in the U.S. and EU countries left the ownership rights of transmission lines to local electricity companies, but moved the operation of transmission lines to public third party entities (so called, independent system operators or ISO), completely stripping away the operation of transmission lines from local monopolists. One of the benefits of having public third party entity operating the transmission lines is that they ensure fair access to transmission lines for both incumbents and new entrants. For example, it addresses concerns over delivery charges being set at an expensive price in order to prevent new entrants from entering the market.

To the contrary, in the case of Japan's deregulation, there will be room for transmission line companies and local electricity companies to continue having close relationships, and there will be an incentive for transmission companies to provide unfair access to new entrants. For this reason, it is critical to the success of the reform whether newly established regulatory bodies such as the Organization for Cross-regional Coordination of Transmission Operators, Japan (OCCTO) and the Electricity Market Surveillance Commission (EMSC) can closely monitor fair access to the transmission lines on a continuous basis.

The third key point is whether the cost of generation can be lowered by competition. Deregulating the generation sector has already been introduced legally, but the amount of electricity generated by new entrants is so little that the generation share of the vertically integrated local monopolies remains at over 90%. What this means is that Japan's electricity generation sector still appears to be the left hand side of the figure. What happens if generation sector remains as-is and retail sector competition takes place? Since generation cost does not change, consumers' total payment won't change. What could end up happening is that the only real change that takes place is the shift in who makes the sale -

from local monopoly companies to new companies - without any significant change to price. From consumers' point of view, there is little benefit to retail deregulation if the price does not change much.

There are multiple ways to promote competition in the generation sector. Common methods taken by many countries are either to separate the power plants from vertically integrated firms or to let them divest their generation capacity. Either of these methods creates more competition by setting the environment where existing and new power plants stand equal. It is also important to promote competition in wholesale markets. Currently the amount of electricity marketed in the wholesale market in Japan is merely 2% of the total electricity generated, which is very low compared to other countries which is typically over 50%.

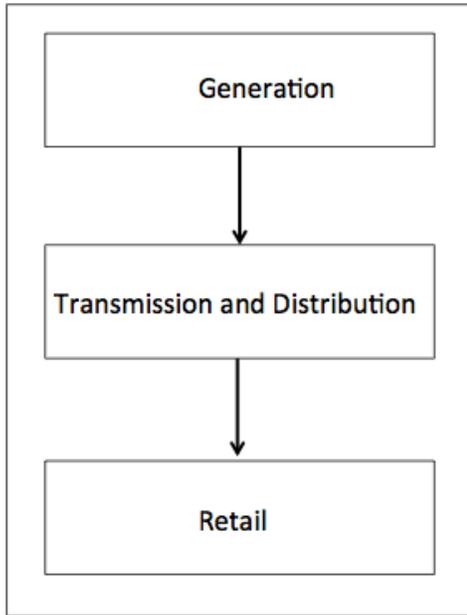
The last important key point is to promote competition and create value-added innovative services in the retail sector. As I have explained above, there is little room for electricity price to drastically go down unless there is competition in the generation sector. Nevertheless, there are still possibilities for slightly lower retail price or improved quality of services if retail services become more efficient by bundling with other products such as mobile, internet, gas, fuel bills.

Moreover, the introduction of dynamic electricity pricing can provide another value-added services. Post the 3.11 earthquake, people in Japan were given the message that "there is electricity shortage in all hours," but this is misleading. Japan's electricity is scarce at peak demand hours such as summertime afternoons or winter early evenings. However, there are hours during the day when electricity has relatively abundant supply. Dynamic electricity pricing sets the electricity price lower when the cost is lower, allowing not only smarter use of electricity but also lowering total electricity bill for consumers.

Governments and companies around the world pay close attention to this reform because it will be one of the largest deregulation of electricity markets in history. I hope that the four points I made will be addressed in the process of the reform and it helps the Japanese economy boost again.

Electricity Markets before/after deregulation

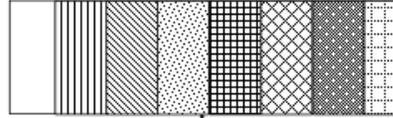
Before deregulation



Vertical integration by a local monopoly

After deregulation

Generation: Market competition



Transmission and distribution:
Operated by a third party to
guarantee fair access

Retail: Market competition

