Electricity Sector Reform in Japan

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The triple disaster of March 11, 2011 has had a lasting impact on Japan, particularly the alarming meltdown of the Fukushima Daiichi nuclear plant. Although public opinion has rallied most strongly around the issue of nuclear safety, the disaster also revealed deeper, underlying structural weaknesses of Japan’s electricity industry as a whole. As nuclear facilities across Japan were taken offline in response to the disaster, Japan’s electricity grid faced a supply squeeze that it was unable to deal with due to the insufficiency of other types of fuel. Shortages and blackouts in the Tohoku and Kanto regions revealed the poor connectivity of Japan’s transmission grid. As utilities scrambled to stem losses and raise rates in the aftermath of the disaster, consumers experienced painful price hikes and discovered the lack of competition in the electricity market, which prevented them from choosing alternative suppliers. Such problems prompted calls for a broad reconceptualization of Japan’s approach to the electricity industry. In response, on April 2, 2013, the government of Japan under Prime Minister Abe issued a cabinet decision entitled “The Policy on Electricity System Reform”, which outlined the most ambitious restructuring and reform that has yet been attempted in the Japanese electricity sector. The three stages of this reform involve the following:

1) Establishing an Independent System Operator to unify and rationalize management of Japan’s transmission grid, balance nationwide supply and demand, and develop infrastructure.

2) Fully liberalizing the generation market and the retail market for electricity to promote competition, enable the entry of new companies, and expand consumer choice.

3) Implementing “legal unbundling” of the big utility monopolies, splitting their operations into separate firms to promote the neutrality of the transmission grid and limit monopolistic actions.

This raises a number of timely questions. Why did the disaster create the problems it did, and where did the structural weaknesses come from? To what extent do the reforms truly address the problems? And most importantly, what factors may determine whether these reforms actually succeed in stabilizing supply, lowering prices, and expanding consumer choice? This paper explores these questions in the following manner.

First, it explains the distinctive structural features of Japan’s electricity system, and the historical origins thereof. In this way, it is possible to better understand the source of the problems and the context of the reforms. A close look at the origins of the electricity system reveals that its fragmentation is the unintended but inevitable consequence of decisions made during the US-led postwar occupation and economic restructuring of Japan. The industry has been defined by restrictive protectionism and only meager reform until now.

Next, the paper analyzes each of the three reform phases in turn, and assesses the chances of failure or success. The findings of the paper in this respect support both concern and optimism.
On side of concern, the reforms will be difficult because the success of each component depends on the success of all of the others, meaning that if any one component falls short, the efficacy of the others will be undermined. The first and third stages of reform are particularly interdependent: without the third phase, the first phase will not realize its potential. And without the first phase, the third stage will be nearly impossible.

It is this third stage, the “legal unbundling” of the monopolies, that merits the closest attention. It is the most ambitious stage of reform, but also the riskiest and most difficult. The paper offers case studies of comparable unbundling attempts made in the United Kingdom and the United States. These examples offer the following lessons: liberalization of retail prices should precede unbundling. The wholesale market must be made transparent and robust to avoid abuse by incumbents. And without ownership unbundling, it will be crucial for the Independent System Operator (ISO) to have sufficient authority over transmission. Furthermore, there is certain potential for the final reform stage be derailed by political wrangling. And the ability of the utilities to withstand the unbundling process may be undermined by shocks to their profitability such as may arise from developments in renewable energy or nuclear power.

There are risks, but on the side of optimism, the paper determines that this reform package contains most of the right policy prescriptions for Japan’s problems. And it is revealing that most of the relevant legislation has already been passed, with minimal opposition form the utilities. All now rests on the all-important third phase, the fate of which will be decided by a Diet decision to come later this year.