[*THE CURRENT POLICY ISSUES FOR RENEWABLE PORTFOLIO STANDARD IN SOUTH KOREA*]

[Tae-Hyeong Kwon, Hankuk University of Foreign Studies, Seoul, Phone +82 2 2173 3208, Email: tkwon@hufs.ac.kr]

Overview

Two popular policies for fostering electricity from renewable energy sources (RES-E) are FIT (feed-in tariffs) and RPS (renewable portfolio standards). Under FIT, prices are first determined by a regulatory agency and then, the quantity of RES-E is determined through market processes. RES-E producers supply RES-E as long as their marginal costs are less than the FITs, which are guaranteed by the government. Under RPS, the quantity of RES-E is first determined by a regulatory agency, and then, the price of RES-E is determined through market processes. The government first allocates a required portion of RES-E to power suppliers. Subsequently, certificates (renewable energy certificates: RECs) are issued for all RES-E produced. Therefore, power suppliers can fulfill their allocation by producing it themselves or by purchasing RECs from other RES-E suppliers.

South Korea introduced an FIT scheme in 2002 and replaced it with an RPS scheme in 2012. This study examines the FIT and RPS experiences of South Korea, in particular, current key issues of the RPS. South Korea's experience with both the FIT and RPS over the past decade makes for an interesting case study.

Methods

This study is based on data analysis of RES-E markets of South Korea as well as on interviews with RES-E suppliers, and power suppliers. In particular, it focus on policy design issues regarding technology competition and distribution of market risks under the RPS in South Korea.

Results

This study found out the following results. First, to prevent excess profits given to non-marginal technologies (low-cost RES-E), a banding or set-aside scheme is needed for the RPS. The ratio of multipliers in a banding scheme must be proportional to the generation cost of each technology, less the average electricity price. Rent-seeking behaviors are highly probable in a decision process of banding ratios. The South Korean experience confirms that multipliers in the banding scheme have been key elements in determining winners in the RES-E market. Therefore, it is criticallyi important to have a fair rule for determining bandiang ratio of RECs. Second, set-aside for Solar PV was terminated in 2016 as cost gaps between Solar PV and othe RES-Es was narroewed down. The REC market seems to be stabilized quickly after the termination of Solar PV set-aside. Third, one of drawnbacks for RPS is that there is a high market risk for RES-E suppliers, especially for small RES-E suppliers. There are ongoing discussions on new maket rules to reduce market risks of RES-E suppliers. In addition, there is still a strong argument that the FIT, which had been replaced by the RPS in 2012, need to be re-installed especially for small RES-E suppliers. This study compare vaious options to reduce market risks of RES-E suppliers in the RES-E market of South Korea.

Conclusions

FIT and RPS are two most popular policies for fostering electricity from RES-E. This study compares experiences of FIT and RPS and discusses current policy design issues of the RPS in South Korea. It discusses alternative design issues of the banding scheme for a fair competition among renewable energy technologies. In addition, it also compares varios options to reduce market risks of RES-E supppliers under the RPS. These new policy designs are important for a smooth transition into renewable energy technologies in the electricity market of South Korea

References

Bergek, A., Jacobsson, S. 2010. Are tradable green certificates a cost-efficient policy driving technical change or a rent-generating machine? Lessons from Sweden 2003–2008. Energy Policy 38, 1255–1271.

Buckman, G. 2011. The effectiveness of Renewable Portfolio Standard banding and set-asides in supporting high-cost types of renewable electricity. Energy Policy 39, 4105–4114.

Del Rio, P. 2012. The dynamic efficiency of feed-in tariffs: The impact of different design elements. Energy Policy 41, 139–151.

Fishlein, M., Smith, T.M. 2013. Revisiting renewable portfolio standard effectiveness: policy design and outcome specification matter. Policy Science 46, 277-310.

Frondel, M., Ritter, N., Schmidt, C.M., Vance, C. 2010. Economic impacts from the promotion of renewable energy technologies: The German experience. Energy Policy 38, 4048–4056.

Haas, R., Resch, G., Panzer, C., Busch, S., Ragwitz, M., Held, A. 2011. Efficiency and effectiveness of promotion systems for electricity generation from renewable energy sources – Lessons from EU countries. Energy 36, 2186–2193.

Hoppmann, J., Huenteler, J., Girod, B. 2014. Compulsive policy-making: The evolution of the German feed-in tariff system for solar photvolatic power. Research Policy 43, 1422-1441.

Kwon, T. 2015. Is the renewable portfolio standard an effective energy policy?: Early evidence from South Korea. Utility Policy 36, 46-51.

Kwon, T. 2015. Rent and rent-seeking in renewable energy support policies: Feed-in tariff vs. renewable portfolio standard. Renewable and Sustainable Energy Reviews 44, 676–681.

Lipp, J. 2007. Lessons for effective renewable electricity policy from Denmark, Germany and the United Kingdom. Energy Policy 35, 5481–5495.

Menanteau, P., Finon D., Lamy, M. 2003. Prices versus quantities: choosing policies for promoting the development of renewable energy. Energy Policy 31, 799–812.

Mitchell, C., Bauknecht, D., Connor, P.M. 2006. Comparison of the renewable obligation in England and Wales and the feed-in system in Germany. Energy Policy 34, 297–305.

Verbruggen, A. 2009. Performance evaluation of renewable energy support policies, applied on Flanders' tradable certificates system. Energy Policy 37, 1385–1394.