

Economic Implications under Electricity Deregulation of Different Price Systems and Solar PV

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Executive Summary

Japan promoted deregulations of electric power industry in April 2016 in response to an electricity system reform. As six months have passed since the launch of the full deregulation of retail sector, only 3% of household consumers have switched to new electricity suppliers. The number of switching users is increasing but limited to a low level. Factors behind the slow switching rate may be the characteristics of regulated and deregulated electricity prices and the economic implications of residential solar photovoltaics (PV) due to its recent rapid growth in Japan.

This report estimates the economic implications of solar PV under regulated prices and switching to deregulated prices under certain assumptions. The estimates indicate that users introducing solar PV or switching to deregulated prices can expect greater benefits if they consume more electricity. Although there are gaps between regions, users consuming more than 450-500 kilowatt-hours per month on average can expect economic benefits from solar PV at the present cost level of PV, which is accounting for one-fourth of all households in Japan. Users consuming less electricity cannot get any benefit even if they switch to deregulated prices or introduce solar PV. Under present conditions including costs of PV, larger users cannot necessarily benefit from install of solar PV in all regions due to differences in regulated prices and weather conditions of each region. If the cost of solar PV declines to grid parity levels, the scope of regions and users benefiting from solar PV will expand.

In Japan where electricity retail sector has been fully deregulated, both switching to deregulated price menu and solar PV introduction are one of the economically attractive options for some consumers. The regulated prices are scheduled to be repealed in or after 2020. The regulated or deregulated electricity price system should be improved, with considerations given to the present three-stage price system of regulated tariff, solar PV and other private power generation and technological development, in order to adequately promote competition under deregulation and allow all citizens to get benefits irrespective of the region or housing type.