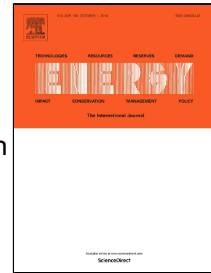


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Economic Analysis of Support Policies for Residential Photovoltaic Systems in Iran

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Abstract

This paper aims to develop a novel efficient Feed-In-Tariff (FIT) supportive scheme for diffusing photovoltaic systems in the residential sectors in the presence of multifarious smart net metering mechanisms. In doing so, a comprehensive economic analysis is performed to explore the optimal regional FIT for spreading PV systems and preventing overpayment/underpayment of flat national FIT. In addition, a new scheme of incentives in each region is established to change electricity use from their current consumption patterns in response to changes in the PV generation and the price of electricity. The participation of PV systems during peak demand associated with different potentials of PV self-consumption is the linchpin of the proposed methodology. The proposed model is then applied to investigate the techno-economic analysis in sixteen geographic areas in Iran. Such analysis introduces the most appropriate regions for investment and provides regional FIT. These results also show that at the current FIT as well as retail rate, the combination of FIT incorporating net metering is not beneficial. It can be concluded that by increasing the electricity price, the so-called retail rate or FIT, there is a point at which the PV systems investment will be cost-effective considerably.

Keywords: **Residential PV system, Economic analysis, Feed-in tariff, self-consumption, Retail rate.**

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