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REGIONAL STUDY ON THE FEED-IN-TARIFF MECHANISM OF THE PHOTOVOLTAIC INDUSTRY IN CHINA

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Abstract

Feed-In-Tariff (FIT) mechanism is an important measure for government to incentive photovoltaic (PV) industry development. In order to secure the appropriate implementation of the Feed-In-Tariff (FIT) mechanism, this paper explores in the first place an optimal bidding contract price by establishing a bidding model between government and photovoltaic power generation companies. On this basis, the paper adopts the Net Present Value (NPV) method and studies the impacts of the fluctuations of different preferential loan lending rate, preferential tax rate and technological progress rate on the feed-in-tariff. Then it calculates the photovoltaic power generation costs in 31 provinces' in China. Results show that, different levels of solar radiation across provinces generate significant disparities in PV power generation costs with a maximum of 35.7%. Through sensitivity analysis, the study further tests the impacts on the feed-in-tariff of initial generating capacity, corporation operation duration and discount rate. Results indicate that, in order to make the photovoltaic power price in China more reasonable, the government shall consider the solar radiation level differences in provinces and the influences of public policies. Based on theseanalyses, this paper finally gives some suggestions on solar photovoltaic industry feed-in-tariff system design.

Key words: Feed-in-Tariff (FIT), game theory, net present value method, photovoltaic power generation, provincial disparities

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