

عنوان مقاله:

Factors Affecting Photovoltaic Technology Application in Decentralized Electricity Production in Iran: a Conceptual Framework

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خلاصه مقاله:

Using a variety of solar power plants is one of the solutions governments use to respond to energy and sustainable development needs. While Iran has a strong potential for using solar energy, the application of solar energy, especially through PV technology, has been limited due to the country's richness of fossil fuels and their low prices. Therefore, it is important to adopt effective strategies and policies to promote the development and application of this technology. The purpose of this study is to identify factors affecting the use of photovoltaic technology in Iran. To this end, 142 factors were first identified through a comprehensive review of the literature. Then, all of these factors were prioritized and categorized by semi-structured interview with 15 energy policy experts. The content analysis of the experts' opinions showed that only 59 of these factors were considered important at the sectorial level for Iran. Based on the same content analysis, a conceptual framework for the application of decentralized photovoltaic power plants in Iran was developed. The framework shows that 10 generic categories of factors should be considered by policy-makers at the solar energy sector to promote PV technology application in Iran. They include policy factors, institutional factors, finance and budgeting factors, system economy factors, macroeconomic factors, socio-cultural factors, human resource factors, factors influencing capabilities of industries, technological and related infrastructural factors, geographical, climatic and environmental factors, and foreign political factors. It is also emphasized that all these categories should be considered at three levels: industry (electricity industry) level, national level, and international level. Thus, renewable energy policy-makers in Iran should take into account all means that influence these factors in order to improve the conditions for decentralized photovoltaic technology application.

کلمات کلیدی:

Solar energy, Photovoltaic Technology, PV, distributed generation, Policy Framework

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