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Innovation for Low-carbon Economy: An Exploration of Policies, Drivers and Barriers in Indian Solar Photovoltaic Technological Innovation System

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Abstract:

This paper is an attempt to understand Indian Solar Photovoltaic technological innovation system. Solar energy is one of the key solutions for energy security that holds a significant place to bridge the demand-supply gap of energy and consider a more sustainable form of energy among various renewable energy sources. At the same time, it is also one of low-carbon technologies, which aim to enhance the country's economic development. In this study, we adopt technological innovation system framework to understand the main drivers and barriers and to see the future directions pertaining to Solar Photovoltaic technological innovation system in the country. Methodologically, the study relies on both primary and secondary data. We found that entrepreneurial activities function embraces a fairly accumulated technological innovation system that performs a dynamic result. However, the least accumulated in the system is associated with resource mobilisation. Inconsistent regulations, less interaction in networks, disconnected competitive entities, unpredictable behaviour of the government and the lack of funding are the key barriers of Indian Photovoltaic industry development.

Keywords: Solar Photovoltaic, Technological Innovation System, Low-carbon Economy, Photovoltaic Industry, Climate Change, Sustainable Development.