

Solar Energy Technology Transfer in India: Business propositions leveraging lessons learnt from Europe

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Abstract

Undoubtedly, there is an increasing attention to the threat to climate change and greenhouse gas emission (GHG) globally. Being second largest country with even more concerns, India has even more threats leading to many opportunities to scale and scope of adoption of measure to tackle this threat, primarily by clean energy and energy efficiency technologies. Due to many advantages, such as, available radiation, being cost-efficient, possibility to develop off-grid power-supply value chain, etc, Solar energy leads such opportunity. Even though there are raising prospects to increase the scale and scope of adoption of Solar energy (RE) technologies in India, the level of utilisation of these policies has been limited due to a number of barriers. These barriers include, appropriate market mandated policies, development and implementation of the most suitable renewable energy mechanism, use of international support to enhance the regulatory framework, develop an all-inclusive energy policy, build domestic technical capacity, bridge the gap between policy makers and academics, leverage the domestic financial environment and develop innovative business models which ensure Solar projects are technically and financially sustainable. To achieve this, the cost of generation is a major concern, particularly in developing countries, like India and it is very well identified, from the existing case studies of Germany and Spain, which new technologies play an important role to bring down this cost. Adaptation of new technologies and create a business model from an international leader to transfer their technology in the most amenable, smooth and deployable manner, is the key barrier to overcome. This model must provide rigorous thoughts on the pillars of the business model, such as, Value proposition, Customer Interface, Infrastructure, and Revenue generation.

This paper explores the scope of the Solar energy in Europe, the methods employed to develop linkages to develop the most suitable environment for technology transfer in Solar energy, leading to evolution of business models in this industry. Following this, the present work analyzes the scale and opportunity of Solar power in India and how lack of adaptation

of new technologies is affecting the further span of Solar energy creating challenges to achieve the goals set by the Government of India (20 GW until 2020). Further, the work ascertains how lessons from the leading countries can be used to leverage domestic policy to enhance the scale, scope and speed of implementing Solar energy technologies in India. This is primarily carried out by developing a business model by learning the lessons from the Europe and assessing the differential situation in India, politically, economically, socially and legally.

Keywords: Solar Energy, Technology Transfer, Business Model, Generation Cost