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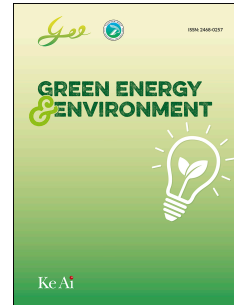
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Review Article

## Solar Rooftop in India: Policies, Challenges and Outlook

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### Abstract

Solar photovoltaic rooftop has emerged as a potential green technology to address climate change issues by reducing reliance on conventional fossil fuel based energy. With a strong commitment to increase the renewable sources based energy capacity to 175 GW by 2022, India has a target to install 100 GW of solar energy capacity. Of this 40 GW would be the share of grid connected solar PV rooftop. This paper examines global growth in solar energy, world's major rooftop installed capacity countries' policies and solar rooftop policy instruments in India. The current Indian goals, issues & challenges in achieving them and trends in further development are discussed.

*Keywords:* Solar energy; India; Rooftop PV; Policies; Outlook

### 1. Introduction

*Solar or coal? the energy India picks may decide Earth's fate*

- Charles C. Mann in December 2015

The above statement is indicative of India's strengths in renewable energy. The climate change threats are driving our dependence on pollution free sources of energy to minimize greenhouse gas emissions. No doubt solar PV energy is one of the cleanest sources of electricity and is being considered as next to fossil fuel based conventional electricity systems.

World cumulative installed solar energy capacity of 3.7 GW in 2004 has reached 177GW in 2014 i.e., increasing almost 50 times in ten years [1]. Global investment in Renewable Energy (RE) has been growing steadily and increased five times since 2004, from \$62bn to \$316bn in 2014 in ten years [2]. The share of investment in the solar rooftop and other solar pv projects is increasing more rapidly and was 12% higher than in the previous year and became 67.4bn in 2015, thus making it one of the fastest growing industries worldwide. International Energy Agency (IEA) Technology Roadmap: Solar PV Energy envisions total production of SPV electricity to increase to 16% in 2050 (in place of 11% projected earlier) with China and India having major shares [3].

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