

Hybrid wind-solar power deployment in India: Green Energy Open Access (GEOA) and Renewable Energy Certificates (REC)

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Abstract. The hybrid wind-solar energy concept has a big influence on the spread of wind and solar power projects in India since it combines the benefits of both industries while also providing extra benefits such as resource sharing such as land, infrastructure, and power evacuation systems. Furthermore, while the hybrid policy may reduce certain barriers to the installation of wind and solar energy in India, there are still some issues that must be resolved rapidly in order to ensure a sustainable installation. According to the study's findings, the installation of wind and solar power plants is significantly influenced by energy policy. The wind-solar hybrid energy strategy will also be crucial in the near future for growing the usage of renewable energy sources. Aside from that, the establishment of Green Energy Open Access (GEOA) and the restart of the trading of Renewable Energy Certificates (REC) would promote the quick deployment of standalone and hybrid renewable power projects throughout the nation, enabling it to reach 500 GW of installed non-fossil energy capacity by 2030.

Keywords: green energy open access; policy; renewable energy certificates; solar energy; wind energy

1. Introduction

Solar and wind power are now the most popular and dependable renewable energy (RE) sources. Government laws and regulations are in place, and they have a significant influence on the development of wind and solar energy. The establishment of a hybrid wind-solar policy has transformed the dynamics of individual wind and solar power projects by authorizing the building of hybrid power plants that use both wind and solar energy concurrently. The techno-economic framework and current projections of the marginal contributions of the wind and solar sectors will have a significant impact on the expansion of hybrid power plants. This research looks at how specific wind and solar energy legislation, as well as India's recently disclosed hybrid energy

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