

## Smart Grids in Morocco: An Outline of the Recent Development, Key Drivers and Recommendations for Future Implementation

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**Abstract :** Smart grids have recently sparked a lot of interest in the energy sector as they allow for the modernization and digitization of the existing power infrastructure. Smart grids have several advantages in terms of reducing the environmental impact of generating power from fossil fuels due to their capacity to integrate large amounts of distributed energy resources. On the other hand, smart grid technologies necessitate many field investigations and requirements. This paper focuses on the major difficulties that governments face around the world and compares them to the situation in Morocco. Also presented in this study are the current works and projects being developed to improve the penetration of smart grid technologies into the electrical system. Furthermore, the findings of this study will be useful to promote the smart grid revolution in Morocco, as well as to construct a strong foundation and develop future needs for better penetration of technologies that aid in the integration of smart grid features.

**Keywords :** smart grids, microgrids, virtual power plants, digital twin, distributed energy resources, vehicle-to-grid, advanced metering infrastructure

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