

## Smart Grid Analysis for the Caribbean Region

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**Abstract:** *This paper presents a gap analysis of smart grid technology for the Caribbean region, and outlines the opportunities for the potential widespread roll-out of this technology, the challenges posed and the exercises employed to assist legacy power systems transition to the smart grid. By exploring the evolution of the smart grid and smart grid statistics, this paper applies smart grid technology to regional and local contexts. The available technologies involved are also discussed, as well as economic and business strategies for the smart grid in a Caribbean context. For the region, the most important factor is the adoption of renewable energy sources and a distributed generation paradigm that is characteristic of the smart grid, as well as the widespread use of relevant communications and information technologies. Other recommendations include rigorous planning with cost versus benefits analyses being performed with respect to the applicable technologies and a strategic business plan. The paper concludes by describing the transition to the smart grid using micro-grids.*

**Keywords:** Smart grid, Electricity, Power system, Caribbean, Renewable