

## **A Review on Modeling and Optimization of Integration of Renewable Energy Resources (RER) for Minimum Energy Cost, Minimum CO<sub>2</sub> Emissions and Sustainable Development, in Recent Years**

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**Abstract :** The rising economic activities, growing population and improving living standards of world have led to a steady growth in its appetite for quality and quantity of energy services. As the economy expands the electricity demand is going to grow further, increasing the challenges of the more generation and stresses on the utility grids. Appropriate energy model will help in proper utilization of the locally available renewable energy sources such as solar, wind, biomass, small hydro etc. to integrate in the available grid, reducing the investments in energy infrastructure. Further to these new technologies like smart grids, decentralized energy planning, energy management practices, energy efficiency are emerging. In this paper, the attempt has been made to study and review the recent energy planning models, energy forecasting models, and renewable energy integration models. In addition, various modeling techniques and tools are reviewed and discussed.

**Keywords :** energy modeling, integration of renewable energy, energy modeling tools, energy modeling techniques

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