Analysis of Load Optimization Tools & Techniques for Smart Grid

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ABSTRACT

The electrical grid consists of the generation, transmission and distribution network. The electrical network is integrated with Internet of Things (IoT) and synchronize the data in full duplex mode. A distribution supplies the energy to domestic and commercial areas. Appliances need a rated voltage along with specified frequency. But the present scenario has various type of challenges. Sometime appliances receive voltage from source which is less than or greater than its required rating. To overcome such type of complications, world requires a next generation grid which fulfills requirements as per specified at time of modeling and design of equipment/machines. The smart grid consists of the existing grid along with smart sensors, smart equipment, and real time monitoring & centralized controlling capabilities systems. The study performed an analysis of several research tools and techniques related to load and cost optimization for smart grid. This research paper revealed the pros and cons of various optimization tools and select the best tool(s)/approach(s) to implement the research problem.

Keywords: demand response, optimization techniques, smart grid simulation, smart grid testing