

## عنوان مقاله:

Solution to Objectives of Supply Side Energy Management by Integrating Enhanced Demand Response Strategy

## محل انتشار:

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## خلاصه مقاله:

Supply-side energy management (SSEM) aims to improve efficiency in operations and strategic planning. Both the cost of generating electricity and the amount of emissions from that generation are minimized in SSEM. It is required to formulate an optimization problem with these two competing goals in order to come up with a compromise. Resolving problems with network reliability caused by peak demand on the electricity system is another goal of SSEM. The ultimate goal of this study is to reduce energy use during peak hours while also cutting down on power losses, generation costs, and pollution from power plants. In this paper all goals of the smart grid system are satisfied and addressed optimally through the use of optimal generator scheduling and an improved demand response technique. To formulate this problem standard IEEE ۳۰-bus system is considered as test boat. The suggested system employs the Cuckoo search method and its most recent variant, adaptive Cuckoo search, to solve a stochastic non-linear optimization problem. The adaptive Cuckoo search approach, when combined with the proposed demand side management strategy, reduces fuel costs by ۷.۸۴%, emission dispatch by ۱۶.۳۵%, power losses by ۱۰.۳۱%, and peak .hour demand by ۱۵.۶%

## کلمات کلیدی:

demand response, Dynamic pricing, Energy management system, Peak load management

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