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OPTIMAL SCHEDULING OF DISTRIBUTED POWER SOURCES IN A MICROGRID CONSIDERING MANAGEMENT ON DEMAND SIDE

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ABSTRACT

Nowadays, the efficient use of renewable sources is more significant to decrease the cost for generating electricity. In this view, Micro-Grid has the ability to make use of various energy sources and supply as a single device to reach the preferred objectives. The drawback in scheduling the available generation and storage capacities in a microgrid on account of existence of renewable sources with a goal to optimize the generation cost is considered in the paper. Two scenarios are created by utilizing the verified uncertainty model due to uncertainty in available generation from renewable sources and loads. AWCPSO (Adaptive weight control particle swarm optimization) technique is employed to work out the optimization portion. The aimed method is examined on a statistical example consisting of conventional and renewable generators. The outcomes acquired from the aimed method are evidence for the utilization of low-priced generators to the coverage of 100% and remaining generators utilized in the reducing percentage with raising their generation cost. Power taken from grid in the statistical example is consumed very carefully as it is high-priced source. The planned algorithm gives the best possible answer for scheduling the generators and it also realize load discarding if required. The generation cost acquired by the proposed method is less than by using the AFS (Artificial fish swarm) intelligence technique.

KEYWORDS: *Microgrid, Scheduling, Optimization, Renewable Energy Sources (RESs), Adaptive Weight Control Particle Swarm Optimization (AWCPSO)*

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