

Sepideh Rezaeeian, Narges Bayat, Abbas Rabiee, Saman Nikkhah and Alireza Soroudi, 2022, Optimal scheduling of reconfigurable microgrids in both grid-connected and isolated modes considering the uncertainty of DERs, *Energies*, 2022, 15, 5369.

<https://doi.org/10.3390/en15155369>

**Abstract** In this study, an operation strategy is introduced for distributed energy resources (DERs) in reconfigurable microgrids (MGs) to improve voltage profiles, minimize power losses, and boost the system performance. The proposed methodology aims to minimize power loss and energy not supplied (ENS) in MGs with an intelligent share of DERs and network reconfiguration in grid-connected and islanded modes. Due to the inherent uncertain nature of renewable DERs, these sources' power output is considered as an uncertain parameter, and its effect on the system characteristics is analyzed. The state-of-the-art information gap decision theory (IGDT) approach is utilized to explore different decision-making strategies in the energy scheduling of reconfigurable MGs to deal with such uncertainty. To validate the effectiveness of the proposed method, the IEEE 33-bus radial system is utilized as the test MG. The simulation results show the importance of energy storage systems and reconfiguration in dealing with uncertainty and improving system reliability.

**Keywords** network reconfiguration; distributed energy resources (DERs); uncertainty; microgrid.