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Two-stage stochastic programming for scheduling microgrids with high wind penetration including fast demand response providers and fast-start generators

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Abstract-

**A large portion of electricity demand in the world is delivered by renewable power is a hot research area. As per the literature, in operation of MGs under uncertainty, the coordinated operation of MGs, with consideration of both day-ahead (DA) and real-time (RT) stages has not been investigated in details. In this paper, the operation of an MG with dispatchable generators and stochastic optimisation problem, wherein DA and RT stages are seen in one shot and DA and RT decision variables are determined in a way that the expected MG operation cost is minimised. In this research, the flexibility resources including fast responsive demands and fast-start **

Index Terms- Microgrids; Fast-start generator; Fast demand response; Energy management system; Uncertainty

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