Michelle Maceas Henao; Jairo Espinosa Oviedo; Idi Isaac Milan, 2021, Bidding strategy for VPP incorporating price market and solar generation uncertainties using information gap decision theory, 29 June–1 July 2021, 9th International Conference on Smart Grid (icSmartGrid), DOI: 10.1109/icSmartGrid52357.2021.9551261

Abstract This paper considers a virtual power plant (VPP) that seeks to maximize profit through participation in the day-ahead market and included an information gap decision theory (IGDT) to model price market and renewable generation uncertainties. The IGDT is a non-probabilistic technique that model the uncertainties considering the risk aversion and the opportunity to obtain higher profits under several uncertainties. The proposed method is implemented in a case study in which the contemplated uncertainties are analyzed to determine the most influencing on the expected benefits of the VPP.

Keywords IGDT, VPP, bidding strategy, market price uncertainty, solar generation uncertainty