Jian Zhao ; Can Wan ; Zhao Xu ; Jianhui Wang, 2017, Risk-based day-ahead scheduling of electric vehicle aggregator using information gap decision theory, *IEEE Transactions on Smart Grid,* vol. 8(4): 1609–1618, July 2017.

Abstract In the context of electricity market and smart grid, the uncertainty of electricity prices due to the high complexities involved in market operation would significantly affect the profit and behavior of electric vehicle (EV) aggregators. An information gap decision theory-based approach is proposed in this paper to manage the revenue risk of the EV aggregator caused by the information gap between the forecasted and actual electricity prices. The proposed decision-making framework can offer effective strategies to either guarantee the predefined profit for risk-averse decision-makers or pursue the windfall return for risk-seeking decision-makers. Day-ahead charging and discharging scheduling strategies of the EV aggregators are arranged using the proposed model considering the risks introduced by the electricity price uncertainty. The results of case studies validate the effectiveness of the proposed framework under various price uncertainties.

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