A risk-averse two-stage stochastic model for optimal participation of hydrogen fuel stations in electricity markets

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Abstract-

In this paper, a novel stochastic risk-averse mixed-integer linear programming (MILP) model is developed for optimal electricity procurement of bilateral contracts, a contract with withdrawal penalty (CWP) and balancing market. The HFS is committed to inject a pre-specified volume of hydrogen into a stochastic model, the uncertainties in hydrogen demand and DA market prices are characterized as

Index Terms- Green hydrogen; Hydrogen fuel station; Electrolyzer; Renewable energy; Electricity market; Bilateral contracts

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