

Information Gap Decision Theory-based day-ahead scheduling of energy communities with collective hydrogen chain

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Abstract-

Hydrogen is called to play a vital role in the future energy storage, replacing or complementing the traditional battery banks thanks to its higher hydrogen storage systems at the residential level. However, emerging paradigms like energy communities may change this concept making viable the installation of hydrogen chains in the domestic sector. This paper focuses on day-ahead scheduling of energy communities with integrated collective hydrogen storage system. To this end, a three-stage methodology is developed in which the first level is focused on individual home energy management, the second level handles with peer-to-peer

Index Terms- Energy community; Prosumer; Hydrogen storage; Fuel cell; Information gap decision theory

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