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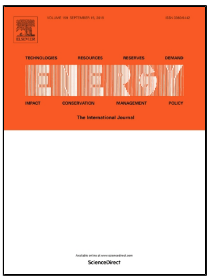

Peak load management based on hybrid power generation and demand response

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# Peak load management based on hybrid power generation and demand response

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**Abstract**

Industrial customers of electric energy can obtain the energy from different sources such as electricity market, reciprocal agreements, small-scale turbines, batteries, wind generation, solar panel generation and the demand response program (DeRP) participants. Due to volatilities in electricity market, the overall price of energy provision for industrial consumers cannot be determined. In this work, a new optimization approach is developed for modelling the uncertainty of pool yield rate. Also, a new operation method of risk-averse proposed and contrasted with risk-neutral method is suggested. In this process, DeRP is utilized in order to decrease the overall price of electric energy for industrial customers. To show the efficiency of proposed method, fare comparison is presented between the deterministic approach and proposed optimization model with and without considering the DeRP. Obtained results show that, implementing the DeRP, the energy provision costs are reduced using risk-neutral and risk-averse approaches, respectively.