

Empowering Energy Markets: Unraveling the Dynamics of Aggregators Relationships in Demand Response Services

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Abstract-

Purpose

This comprehensive review examines the multifaceted relationships involving demand response aggregators within the electricity sector. Focusing on interactions with stakeholders such as electricity suppliers, system operators, distributed energy resources, and flexibility-requesting parties, the paper delves into critical aspects including market dynamics, compensation models, balancing responsibilities, and contractual frameworks.

Recent Findings

The review explores the implications of different aggregator-supplier relationships, considering factors like balance responsibility, transfer of energy, and the rebound effect. It analyzes the intricacies of aggregator-system operator relationships, including payment mechanisms for system services and the crucial role of data measurement. Additionally, it investigates the varied markets and services in which aggregators participate, ranging from wholesale energy services to congestion management and balancing. The relevance of defining flexibility product attributes such as availability, activation, and market conditions for pooling is highlighted.

Summary

Identifying gaps and uncertainties in existing literature, the review underscores the need for further research to enhance our understanding of the evolving role of demand response aggregators in shaping the modern energy landscape.

Index Terms- demand response, aggregator, electricity market, compensation models, balancing responsibility, flexibility

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