

Demand Side Management using Blockchain for Distributed Networks

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Abstract: *Traditional demand side management (DSM) systems often rely on centralized control mechanisms, leading to limitations in transparency, flexibility, and consumer engagement. This paper proposes a blockchain-based DSM platform for distributed energy networks to overcome these limitations. By utilizing smart contracts and decentralized consensus, the proposed system enables peer-to-peer energy trading, secure data management, and automated demand response. The framework enhances transparency, efficiency, and consumer participation in energy usage and trading. Simulation results demonstrate improved energy allocation, data integrity, and system scalability, highlighting blockchain's potential in building resilient and consumer-centric energy ecosystems.*

Keywords: Blockchain, Demand Side Management, Smart Contracts, Distributed Networks, Peer-to-Peer Energy Trading, Token Economy

