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Trust Requirements and Mechanisms in Peer-to-Peer Energy Markets

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Peer-to-peer (P2P) energy markets are emerging as a promising solution to address the challenges faced by traditional energy systems. However, the decentralised nature of these markets necessitates robust trust mechanisms to ensure secure and reliable energy transactions. This paper presents a comprehensive review of trust requirements and trust-building mechanisms in P2P energy markets. It explores the role of blockchain technology, zero-trust architecture, and reputation systems in establishing trust among market participants. It identifies several trust requirements, including security, privacy, transparency, fairness, and reputation. The study further highlights the limitations of existing works and proposes future research directions to enhance trust and security in P2P energy markets. By addressing these limitations, the full potential of P2P energy trading can be unlocked, contributing to a more sustainable and resilient energy future.

Presenting Author

Email

Student or Postdoc?

CHPC User

CHPC Research Programme

Workshop Duration

Primary authors: LEOTLELA, Boitumelo; COETZEE, Marijke (North-West University); LEDWABA, Lehlogonolo

Presenter: LEOTLELA, Boitumelo

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