

区块链技术在能源电力碳监测领域的应用研究 【上架时间： 2023-03-30】



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详细信息

【标题】 区块链技术在能源电力碳监测领域的应用研究

【Title】 Application of blockchain technology in the field of energy and power Carbon Monitoring

【摘要】 发展低碳经济，推动全社会绿色低碳转型是我国作为碳排放大国实现可持续发展的必然选择。能源电力行业作为绿色低碳转型的重要领域，是我国实现碳达峰、碳中和目标的关键之所在。碳监测作为碳减排的关键环节和重要监管机制，关系到市场的公平可信和健康发展。如何实现能源电力领域碳监测数据的实时可靠采集、可信安全传输、协同共享应用等目标，成为能源电力行业碳监测实施的难点。本文利用区块链技术的分布协同信任机制，设计了适应于能源电力领域的碳监测应用服务平台，结合分布式预言机上链机制，可以满足碳监测过程的去中心化、不可篡改、可追溯、公开透明等要求，以区块链自身独有的信任机制为能源电力行业提供广泛的信任保障，支撑碳足迹追踪、碳核查、碳排放认证及企业节能减碳治理等服务，推动能源电力全产业链的绿色低碳转型。

【Abstract】 Developing a low-carbon economy and promoting the green low-carbon transition of the whole society is an inevitable choice for our country to achieve sustainable development as a large carbon-emitting country. As an important area of green and low-carbon transformation of the whole society, the energy and power industry is the key to achieve emission peak and carbon neutrality in our country. As an important regulatory mechanism and key link for carbon emission reduction, carbon monitoring is related to the fair, credible and healthy development of the carbon market. How to achieve the goals of real-time reliable collection and summary, reliable and secure transmission, collaborative sharing of carbon monitoring data in the energy and power sector has become a difficult point in the implementation of carbon monitoring in the power industry. Combined with distributed oracle on-chain mechanism, this paper uses the blockchain technology to distribute the collaborative trust mechanism, designs a carbon monitoring application service system suitable for the power field, which can meet the requirements of decentralization, non-tampering, traceability, openness and transparency in the carbon monitoring process. The mechanism provides a wide range of carbon monitoring and trust systems for the power industry. It can support services such as carbon footprint tracking, carbon verification, emission certification, and carbon reduction, which can promote the green and low-carbon transformation of the entire power industry chain.

【关键词】 区块链; 能源电力; 碳减排; 碳监测

【Keywords】 Blockchain; Energy power; Carbon emissions reduction; Carbon monitoring

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