

Blockchain Market In The Energy Sector - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The Blockchain Market in the Energy Sector is expected to witness a CAGR of 34% over the next five years. Owing to its centralized functioning, the energy sector has certain limitations, including high administration and transmission costs. Since blockchain addresses these issues, decreases the scope for single-point failures, and increases transparency across the supply chain, the technology is expected to bring significant digital transformation to the sector.

Key Highlights

Blockchain technology helps regions meet renewable energy targets, improve the reliability and efficiency of grids, and reduce utility capital expenditure on clean energy generation. Thus, its adoption is expected to increase over the forecast period.

As microgrids allow trading electricity within a specified area and have other such benefits during emergencies, with the main grid (acting as backup solutions), vendors in the market could leverage the increasing use of microgrids. One such instance is the pilot project in Europe's microgrid by OLI Systems, an energy blockchain vendor in Germany.

The significant benefits of blockchain in the energy sector include reduced costs, environmental sustainability, and increased transparency of stakeholders with no compromise on privacy.

Legacy energy sectors, such as oil and gas, also benefit from implementing software solutions, such as Enterprise Ethereum solutions. These private blockchain networks offer data permission and selective consortium access to pre-approved parties, which enable oil and gas companies to safeguard their privacy and trade secrets.

Among significant applications, the 'payments' category resembled the highest association and implementation of blockchain in the energy sector. By tracking the chain of custody for grid materials, distributed ledger technology can potentially improve utility providers' efficiencies. Beyond provenance tracking, blockchain offers unique solutions for renewable energy distribution.

The COVID-19 pandemic crisis magnified the role of digital and energy technologies on people's lives, businesses, and the economy. The business understood how heavily it relied on digital and energy solutions to enable people to telework, heat their

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homes, manage hospitals, and run their businesses.

Blockchain in the Energy Sector Market Trends

Payments Hold the Largest Share in the Market

The blockchain ledger is used across various sectors to reduce transaction costs, increase the efficiency of exchanges, and pinpoint the origins of energy. For instance, IBM's Blockchain World Wire network revolutionized cross-border (Forex) payments. It enabled nearly real-time transaction clearing and settlement with finality. By acting as an agreed-upon store of value shared between parties, the method integrated payment instruction messages and leveraged digital assets to settle transactions. Such product features that enhance payments in different sectors will create a competitive edge in the market.

Furthermore, the adoption of blockchain technology enabled the integration of payments system with smart grids. This further aided the companies to invest more in integrating financial services with smart grid technology.

Blockchain has made traditional payment methods less effective. It is also advancing to overcome the issues of hacking and data breaching. For instance, the RWE's power utility has tested blockchain technology to authenticate and manage the billing process for hundreds of autonomous electric-vehicle charging stations in Germany and California.

Using blockchain in the energy sector would also minimize the overhead for utilities. By facilitating the billing and metering process between the utility and the consumer, instead of involving intermediary retailers and brokers, consumers benefit from lower costs.

United States is Expected to Hold Major Share

Blockchain adoption in the energy sector allows transactions, such as energy trading, to be recorded and settled almost instantly. Since all parties use the same platform, there is no need for an intermediary and little need for reconciliation. As early technological adaptors, North Americans are witnessing significant adoption of blockchain in the energy sector.

According to the US Energy Information Administration, in 2021, nearly 4.12 trillion kilowatt-hours (kWh), or about 4,116 billion kWh energy was produced at utility-scale electricity-producing facilities in the United States. Coal, natural gas, petroleum, and other gases made up about 61% of the fuel used to generate this power. Nuclear energy roughly accounted for 19% of the total, while renewable energy sources comprised about 20%. Small-scale solar photovoltaic systems generated an additional 49 billion kWh of electricity. Such massive energy production will enable the energy sector to adopt blockchain solutions to ease payment transactions, risk and compliance management, and many such issues.

Government bodies are granting funds to incorporate blockchain to secure energy grids. For example, to assist in safeguarding the national power system, the US Department of Energy (DOE) is awarding TFA Labs almost USD 200,000 in funding. The suggested strategy calls for verifying and securing devices on the grid that are free of malware, creating technology to increase the security of commonly used consumer electronics, and offering a reasonably priced way to secure any item right out of the box using blockchain technology.

In March 2022, Invenergy, the largest privately held global developer, owner, and operator of sustainable energy solutions, and GE Renewable Energy announced commercial operations for the 998-megawatt Traverse Wind Energy Center, the largest wind farm constructed in a single phase in North America. Such factors are expected to augment the market's growth during the forecast period.

Blockchain in the Energy Sector Market Competitor Analysis

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The blockchain market in the energy sector is highly competitive and consists of several major players. Regarding market share, a few major players currently dominate the market, including SAP SE (SAP), Microsoft Corp., Accenture PLC, and IBM Corporation. With prominent shares in the market, these major players are focusing on expanding their customer base across foreign countries. These companies leverage strategic collaborative initiatives to increase their market shares and profitability. To strengthen their product capabilities, the companies operating in the market are also acquiring start-ups working on blockchain in energy technologies.

In January 2021, IBM announced that using its blockchain technology on IBM Cloud, Thai Reinsurance Public Company Limited (Thai Re) successfully launched "Insurer Network," a reinsurance smart contract production network.

In May 2021, ConsenSys collaborated with Microsoft to strengthen the capabilities of its blockchain solution. With more businesses expanding their online presence to include payments and financial transactions, blockchain technology adoption in the enterprise is growing.

In July 2022, INFINITY partnered with blockchain company Yesports. This partnership aimed to launch a fan-engagement program based on non-fungible tokens (NFTs). The deal highlighted an increasing number of esports organizations looking to rely on blockchain and Web3 to establish fan engagement strategies.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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