ABSTRACT
The looming energy crisis impacts every area of the global economy. The sheer requirement for energy conservation has compelled experts to apply automation to the power sector. There is a need to put in place mechanisms that can reduce energy losses and allow customers to buy and sell extra electricity. The Internet of Things (IOT) is actively involved in energy conservation in the field of energy and electricity. Smart grids are used to improve transmission efficiency. When combined with smart grids, blockchain technology has the potential to reduce energy waste and increase efficiency. Based on smart grids and blockchain, this research offers a smart energy meter.

Keywords: Energy Conservation, Blockchain

1. INTRODUCTION
Every day, there is more demand than there is supply for electricity. The smart grid is essential for systems like outage management, fault management, and load management, as well as for consumer energy use. With the use of local energy production, which can speed up local energy production and reduce energy losses over long distances, this effort intends to offer an energy-saving alternative. To accomplish this, blockchain technology and IoT are combined. A smart contract running on Ethereum will transform the amount of tokens based on how many units the customer buys or sells. Users can set their selling price through the app.

2. WHAT IS BLOCKCHAIN?
A number of international experts have recognised the potential of blockchain technology for the energy industry. Blockchain technology has lately emerged as a major technology in the digital revolution of the energy sector. Transaction histories can be saved on a blockchain. It is not owned by anyone, and there are numerous personal computers all over the world that have copies of it stored on them. It provides high security as recorded information is impossible to change, hack, or manipulate. It works on the concept of a distributed ledger that stores duplicate transactions at different locations. The network is open for use by anyone. This frequently eliminates the need for middlemen and enables peer-to-peer communication between users. Efficiency can be improved while transaction costs are decreased. Since this network is distributed, it is difficult or near about impossible to destroy or damage it.
A data record that has already been created cannot be altered and is permanently stored in the general ledger. Only until it has been independently confirmed by numerous computers may a new data record be uploaded. Because of this, data can be trusted without a third party. Advanced cryptography is used to protect the book, making manipulation challenging. Different applications, both in financial applications and in other fields. The programmers are executed precisely and automatically in accordance with everyone's consent. Because blockchains are transparent, everyone has access to high-quality data that is also consistent across the network.
3. LITERATURE REVIEW
IoT and blockchain-based frameworks to evenly distribute energy or improve energy efficiency in the immediate vicinity, resulting in energy conservation. Various governments around the world are launching projects to investigate blockchain for energy conservation. According to the International Energy Agency's Energy Efficiency 2018 report, boosting energy efficiency would save customers more than $500 billion in annual energy costs. As technology such as blockchain develops, users will be able to exchange their excess energy. Consumers will be even more motivated to save energy and improve the energy efficiency of their homes since they will have an additional incentive to monetize their excess energy. Creating such a situation is a time-consuming undertaking, as uneven energy distribution is a serious and global issue.

4. BLOCKCHAIN IN ENERGY MONITORING
Blockchain is a decent realized ledger that is shared and maintained by numerous people using safe practices, peer-to-peer networks, and consensus. It guarantees the accuracy, transfer, and privacy of data. The ability to build new commercial infrastructure within smart grids can be crucial. Because of the streamlined trading structure and increased privacy for users of the smart grid, this real-time market development results in decrease transaction costs. Blockchain technology can be used by the consumer to validate the renewable energy produced by the consumer. However, it is not immediately clear which blockchain technology will converge to satisfy these applications’ needs. Additionally, it safeguards against online assaults like denial of service (DoS) and man-in-the-middle attacks, which might change the consumer side’s load.
5. BLOCKCHAIN BENEFITS THE ENERGY INDUSTRY

A data record that has already been created cannot be altered and is permanently stored in the general ledger. Only until it has been independently confirmed by numerous computers may a new data record be uploaded. Because of this, data can be trusted without a third party. Advanced cryptography is used to protect the book, making manipulation challenging. Different applications, both in financial applications and in other fields. The programmers are executed precisely and automatically in accordance with everyone's consent. Because blockchains are transparent everyone has access to high-quality data that is also consistent across the network. Transactions are fast, secure, and traceable thanks to blockchain. By increasing the effectiveness, adaptability, and openness of the green energy supply, this technology promotes the production and use of 100% renewable energy. As a result, it can lower energy waste and improve the effectiveness of energy use. With innovations, this decarbonization process of the economy might go more quickly. Blockchain for energy efficiency in the field of renewable energy will be a valuable implementation for the company.

6. ADVANTAGES OF BLOCKCHAIN-BASED ENERGY CONSERVATION

- It reduces the power plant setup cost which makes more economical.
- It reduces the power loss while trading over long distance.
- It helps to provide even distribution of energy.
- It establishes transparency and highly securable between retailers and consumers.

7. DISADVANTAGES OF BLOCKCHAIN-BASED ENERGY CONSERVATION

- Establishing the concept of blockchain is a tedious and expensive task.
- The process of creating system from blockchain is very time consuming.
- It is crucial for the blockchain community to continue exploring ways to minimize energy consumption and develop environmentally sustainable solutions.

8. CONCLUSION

Blockchain has been investigated by business leaders, technology corporations, and numerous governments for usage in a variety of industries, including stimulation, charity, and sustainability. Even the United Nations has advocated for the use of blockchain with iot in humanitarian initiatives. With so many advantages, this can be used to promote environmental sustainability in a variety
Blockchain, for example, can enable next-generation sustainability monitoring, advanced resource reporting and verification, disaster preparedness, humanitarian relief, geospatial platforms, carbon accounting, and air pollution monitoring. Blockchain technology for environmental sustainability Environmental concerns require highly inventive solutions.

9. FUTURESCOPE
In order for the related savings to be exchanged fairly and openly, the transition to a smart, linked grid of prosumers will necessitate the creation of new technologies as well as the capacity to assign a value to energy efficiency measures. With the help of blockchain technology, the energy sector is encouraged by the prospect of offering consumers a safe and reliable digital transaction platform where they may directly engage in the energy market. If the proper mechanisms could be adopted, the energy efficiency market and the various advantages that the deployment of this technology may provide to stakeholders could flourish. Savings that are properly valued, data openness amongst stakeholders, ineffective administrative procedures, and high market complexity related to energy efficiency are all well recognized.

10. REFERENCES
[3].https://futurethinkers.org/blockchain-environment-climate-change/
[5].https://encyclopedia.pub/entry/21818#:~:text=Blockchain%20technology%20is%20increasingly%20being%20concerns%20and%20world%20natural%20resources.