

# SOLUTIONS CHALLENGE 2025

**PROJECT:** GridShare

—→ **b y t e B i t e C o d e**

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# PROBLEM

*The increasing adoption of renewable energy sources, particularly solar power, has led to the generation of excess energy in many households and businesses. However, much of this surplus energy either goes to waste or is sold back to the grid at low rates. Meanwhile, other households and businesses, lacking solar panels, continue to depend on expensive and often non-renewable energy sources.*



# GOALS



**Ensure access to  
affordable, reliable,  
sustainable and  
modern energy for all**



**Make cities and  
human settlements  
inclusive, safe,  
resilient and  
sustainable**



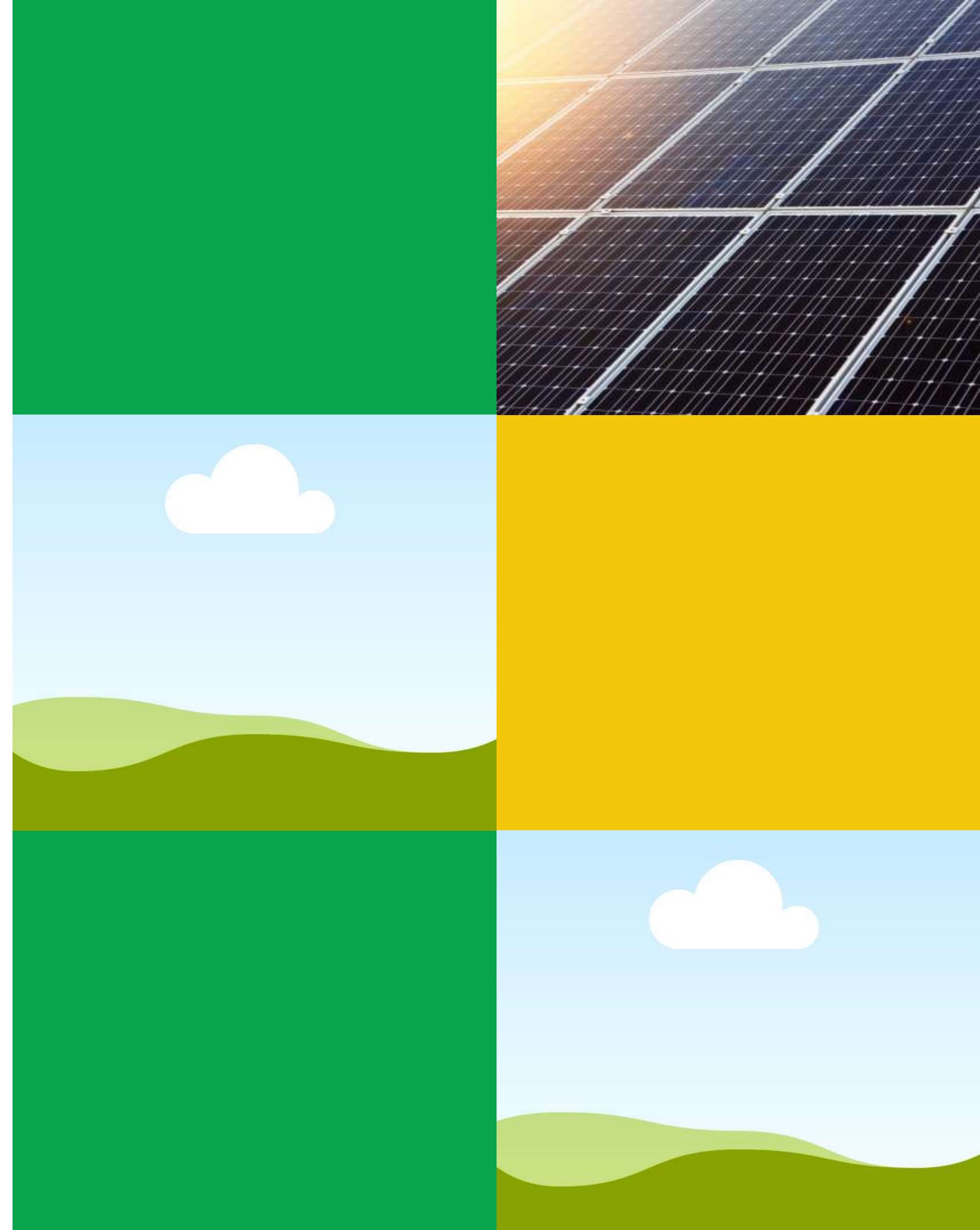


# SOLUTION

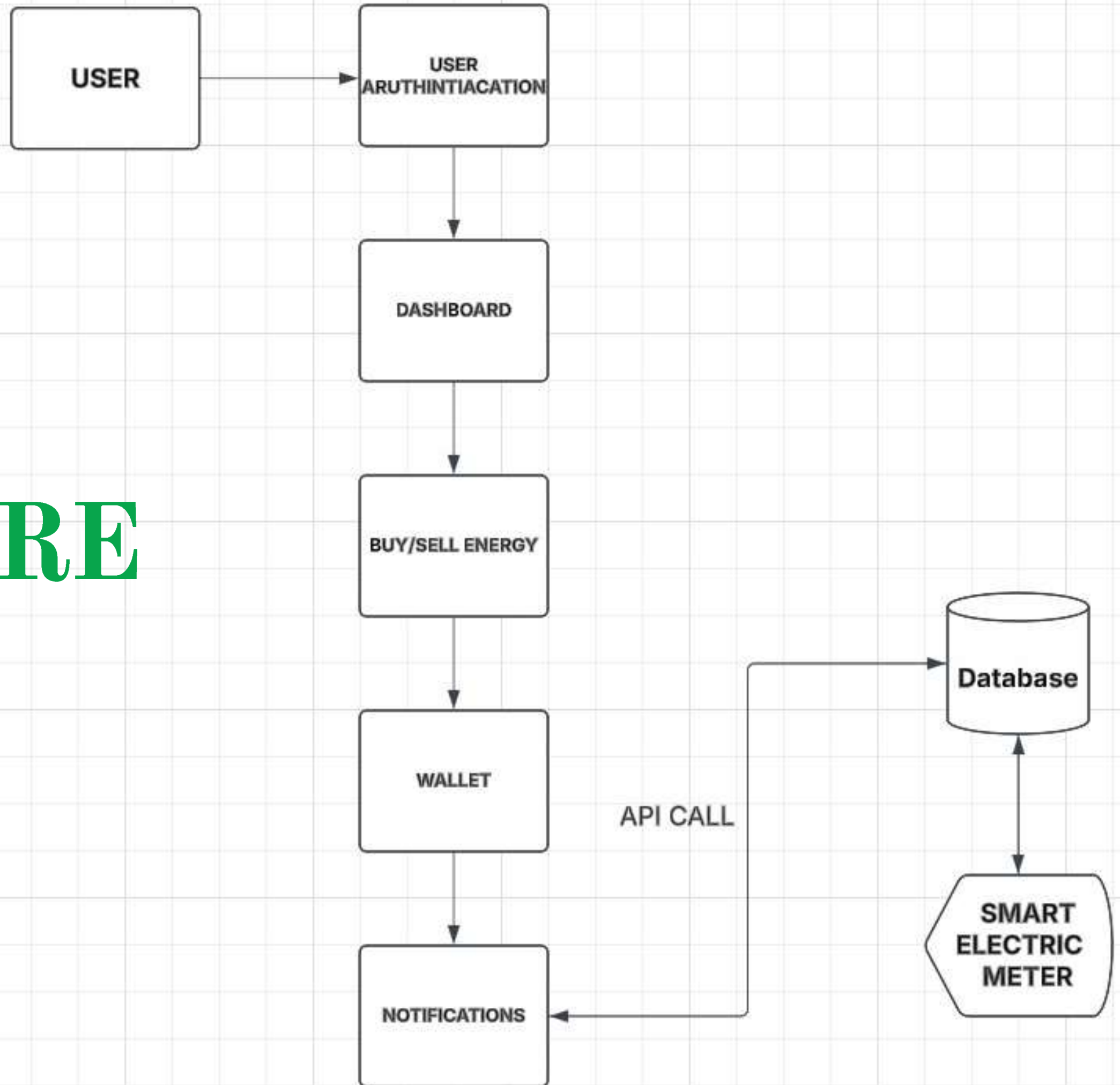
GridShare proposes a blockchain-based peer-to-peer (P2P) energy trading platform that empowers individuals and businesses to buy and sell excess renewable energy within their community at fair prices.

By utilizing blockchain technology, GridShare ensures secure, transparent, and automated energy transactions through smart contracts.

The platform also supports real-time energy tracking, community microgrid management, and regulatory compliance tools to foster sustainable energy sharing.



# SOLUTION ARCHITECTURE





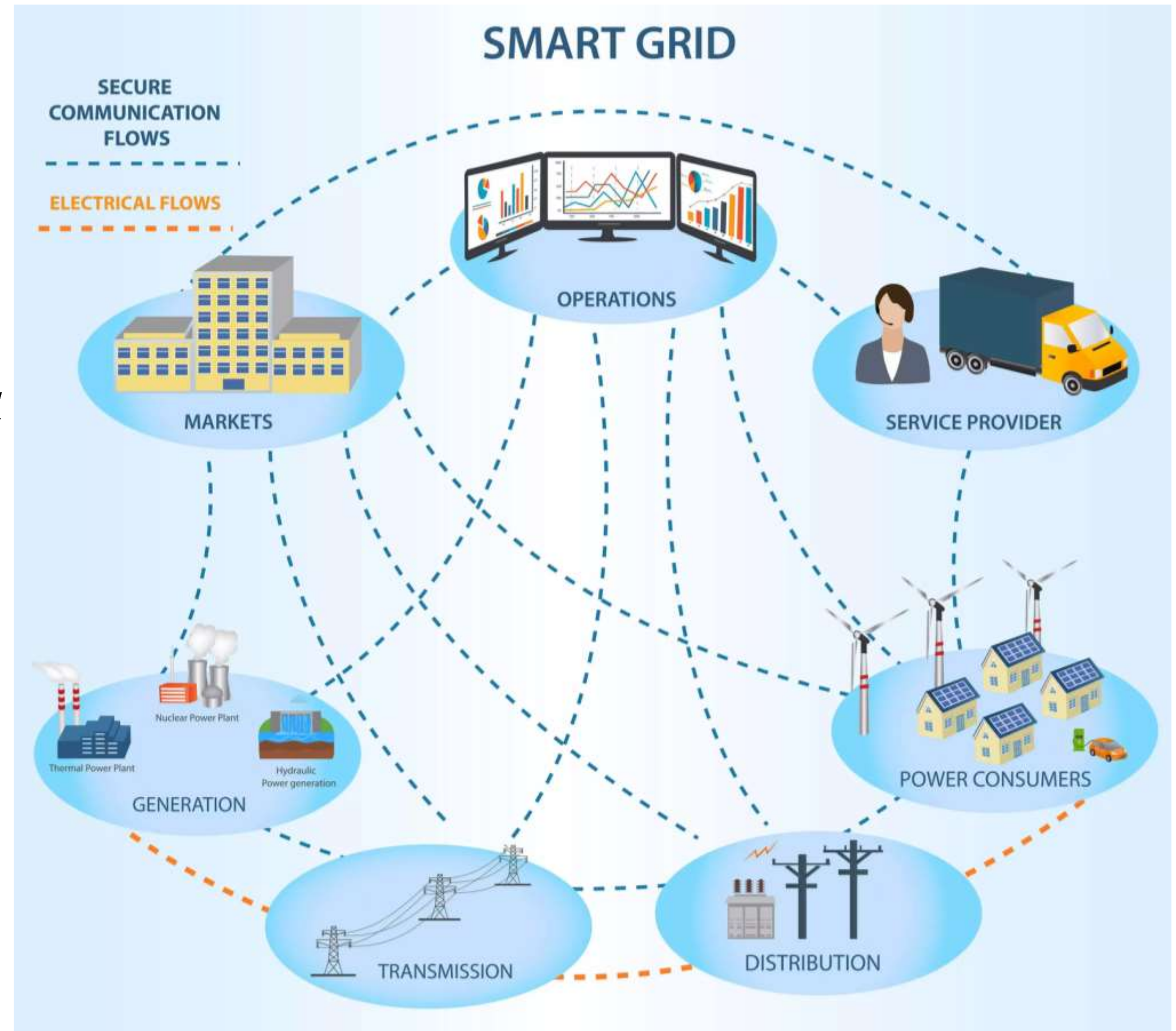
# Key Features

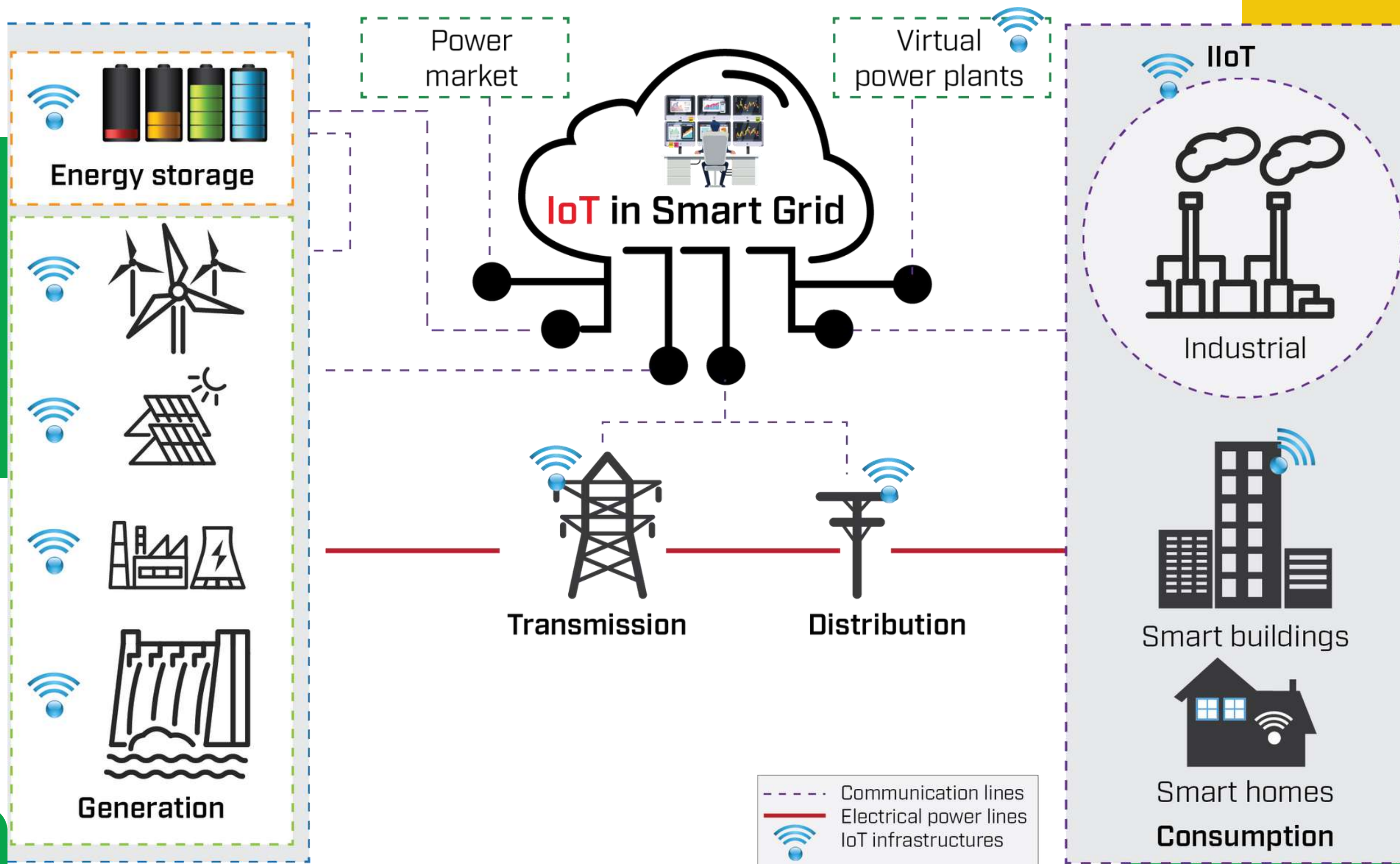
- *P2P Energy Marketplace*
- *Smart Contracts for Secure Transactions*
- *Real-Time Energy Tracking*
- *Wallet & Payment System*
- *Community Energy Usage*



# SMART GRID

*The smart grid is decentralized system where power flows in both direction , from generation end to consumer end and vice versa. Smart grids are based on communication between provider and consumer. It is energy consumption monitoring and measuring system.*

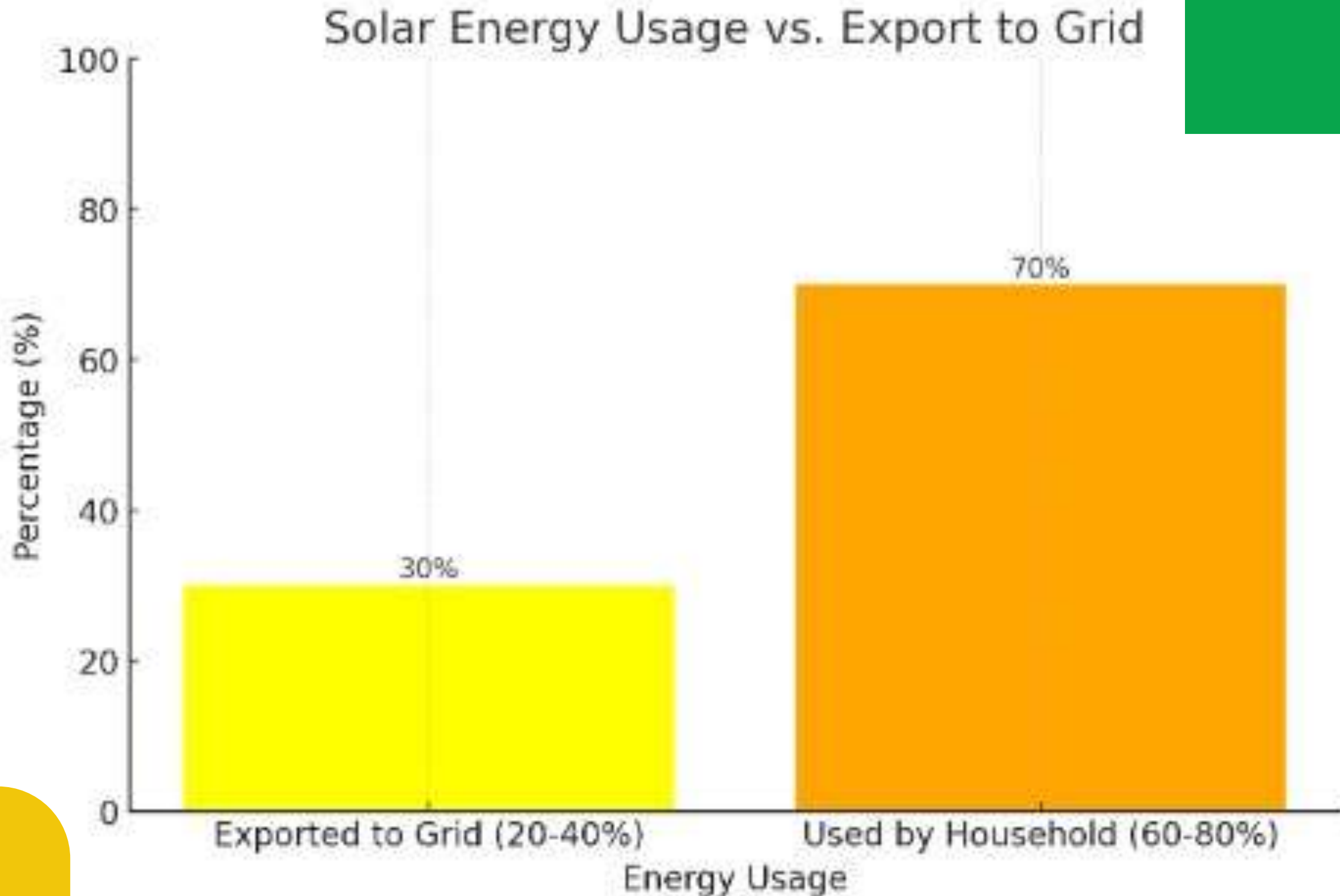






# DATA INSIGHTS

- *Solar energy abundance: The sun provides more than 10,000 times the world's energy needs, with 173,000 terawatts of solar energy striking the Earth continuously.*
- *In 2016, the International Renewable Energy Agency (IRENA) estimated that by the early 2030s, decommissioned photovoltaic (PV) panels would constitute about 4% of the total installed panels. By the 2050s, this volume is expected to escalate to at least 5 million metric tons annually.*



# TECH STACK

## FRONT END

## BACK END

## DATABASE



React Native



Node.js (Express)



Firebase



Tailwind CSS



Ruby on Rails



MangoDB



# TECH STACK

IoT

**BLOCKCHAIN**

**Communication**

**Payments & Wallets**



Ethereum/Polygon



Solidity Smart  
Contracts



MQT  
T

WebSockets for  
smart meters



MetaMask  
(Crypto)



Google pay



# PAIN POINTS

- Combining net metering and P2P trading.
- Low awareness among people.
- Lack of smart meters in India.
- DISCOM resistance.





# ASPIRATIONS

- **Regulatory Compliance:** Work closely with government agencies, DISCOMs, and smart meter providers to follow regulations.
- **Scalable Blockchain:** Use Layer 2 solutions or private blockchains for faster and cheaper transactions.
- **User-Friendly Experience:** Design a UPI-like, simple energy trading UI that works for non-tech users.
- **Incentives & Rewards:** Offer discounts, rewards, and gamification features to drive adoption.
- **Secure Transactions:** Implement multi-layered security and smart contract auditing to prevent fraud.





# FUTURE EXPANTION

- ✓ Start with regulatory-friendly states & expand globally.
- ✓ Leverage AI for smart pricing, forecasting & energy balancing.
- ✓ Integrate EV charging, smart IoT & microgrids for sustainability.
- ✓ Tokenize green energy & introduce carbon credit trading.
- ✓ Develop enterprise & subscription models for long-term revenue.



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*Implementing GridShare is feasible with careful adherence to existing net metering policies and emerging P2P energy trading regulations. By aligning with government frameworks and leveraging advanced technologies like blockchain and smart metering, the platform can promote decentralized, sustainable, and efficient energy distribution within local communities.*



THANK YOU