Supply-side Token Creation

A supply-side token creation mechanism is an effective tool for incentivizing the development of renewable energy infrastructure, and in a blockchain-based system, it can provide an efficient and transparent way of managing energy storage, supply, and distribution, while ensuring energy is used efficiently and sustainably.

Under the proposed system, the energy supply is fixed at 25 MW, and each token represents 0.2 MW of energy, which can be further divided into 1 KW fractions for customers to purchase energy flexibly, similar to Bitcoin (Perez, 2019). Tokens are created at the beginning of each month based on the available energy capacity. As capacity fluctuates throughout the month, tokens are either created or destroyed. If customer-owned tokens are destroyed due to capacity issues, they will be reimbursed for the amount they paid. If new tokens are created, they will be auctioned off on the utility company's online marketplace.

To encourage responsible energy consumption, tokens will expire at the end of the month. This means that customers must use the energy they purchase within the month, which incentivizes them to consume energy responsibly and avoid waste (eia, 2022).It also allows the system to quickly adapt to changes in energy demand, ensuring energy is distributed efficiently and fairly.

Companies and individuals will be able to purchase tokens equal to their energy consumption from the previous month, and newly created tokens will be available for purchase at the beginning of the month through a bidding process. Previous customers can also waive their right to purchase tokens at a buy-now price in hopes to get a better price through bidding. The token creation mechanism will calculate a weight-averaged price with higher weight given to tokens sold at the beginning of the previous month to ensure a stable buy-now price from month to month, and end-month price crashing (Agarwal, 2013).

This system can have a significant impact on the renewable energy sector, as it provides efficient and transparent energy management while also promoting responsible consumption. It allows for market-driven adaptation to changes in energy demand, making it a valuable tool for developing sustainable energy infrastructure.