Blockchain-based TSO-DSO Flexibility

Integration of an intelligent platform with blockchain-based technology, allowing the trading of flexibility services among prosumers at the TSO and DSO levels

Enabling TSOs, DSOs, prosumers, BRPs, and suppliers to trade flexibility services in a transparent and cost-effective way

Distinctive Features

- A blockchain-enabled procurement process allowing for greater visibility into all market parties
- The validation of assets' meter data and the settling of associated financial operations

Why

The Pilot's motivations

- Unlock abundant flexibility services at the DSO level to provide flexibility and ancillary services to the DSO and TSO, respectively
- Easy onboarding and instantaneous settlements with micro-payments
- Reduce transaction costs and data sharing complexity with blockchain

What

The Pilot's expectations

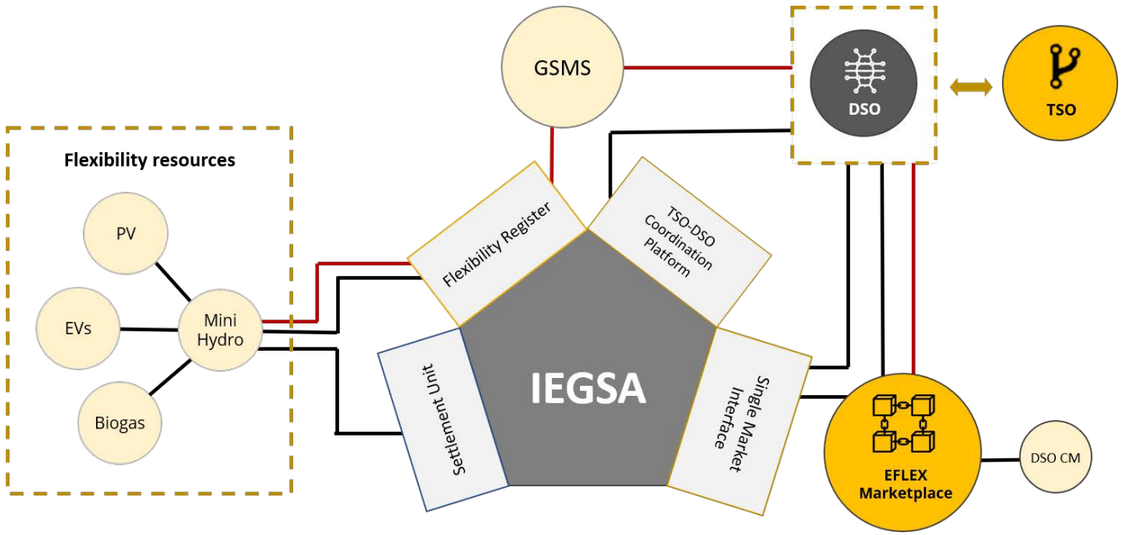
- **Technical:**
  - Flexibility asset registration with locational unit information
  - The long-term reservation of flexibility
  - The validation of metering data and settlement supported by smart contracts and distributed-ledger technology
- **Business:**
  - Expand the opportunities for market participants to be involved in balancing and flexibility markets
  - Simplify the entry of demand response to balancing and other reserve markets
  - A demonstrated framework to facilitate the trading-based optimisation of grid resources

Business Model

- A registry of flexibility assets and products is based on unique identifications and immutable registrations in a blockchain.
- DSO defines congestion areas in the flexibility marketplace.
- Flexibility offers will be made with unit location information.
- EFLEX executes matching algorithms.
- Smart contracts will be integrated to support the settlement of trade transactions.
- TSO-DSO coordination is achieved via a distributed-ledger database.

KPIs Definition

- Increased renewable penetration achieved in the distribution grid
- The total number of approved offers for grid flexibility to the grid operator
- The amount of new flexibility offered to the DSO
- The number of tokens released
- The number of congestion hours in the DSO grid
- The duration of the DSF service and associated curtailment



User Features

- A decentralised local market
- A blockchain-based smart billing system

Grid Features

- Geo services
- The reservation of flexibility to resolve constraints in the DSO grid
- A blockchain-enabled procurement process, allowing for greater visibility into all market parties