

Schneider
 **Electric**

 Team
Metropolis



Energy supply chain powered by IoT and Block-chain

Problems we come across =

Solution proposed for Schneider as an energy distributor

S

Energy Distribution Challenges

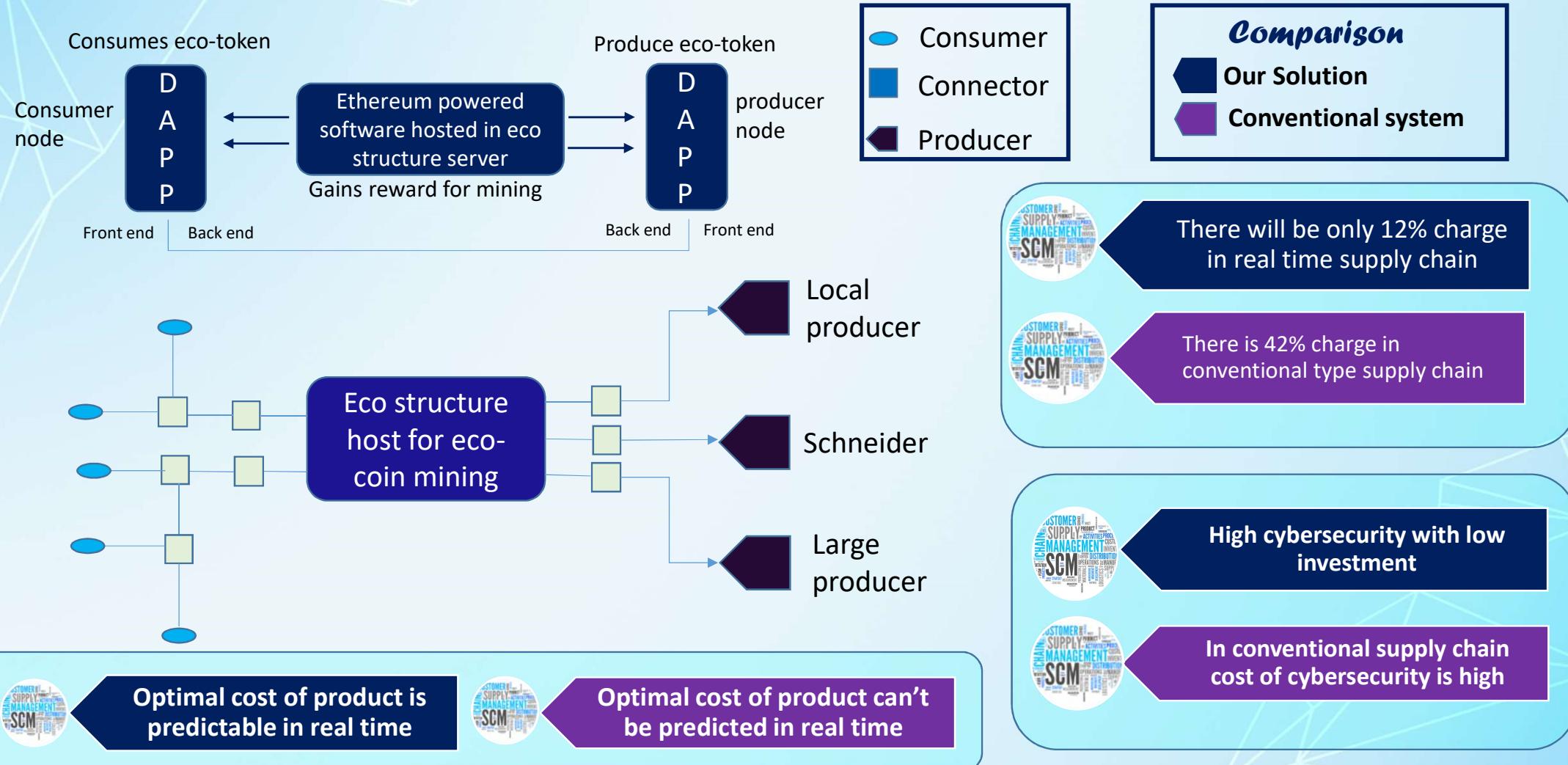
- ✓ India is the 4th largest Energy Manufacturer in the World, however 40% of this energy is lost before reaching the target consumer – theft and pilferage and cyber security
- ✓ Lack of automated billing of power consumption and **red tape maze** and delay from dependency on intermediaries
- ✓ high operation cost and cyber threat problem.
- ✓ maintaining demand and supply equilibrium.
- ✓ lack of electricity selling opportunity for end user.

IoT Enabled Metered Block Chain Devices

Smart Contract for automatic billing

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Block chain and IOT controlled supply chain

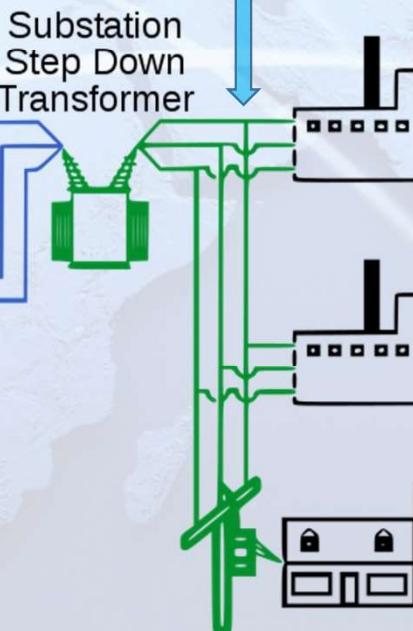
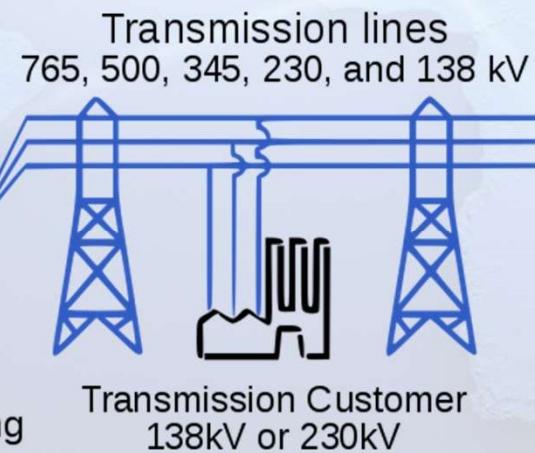
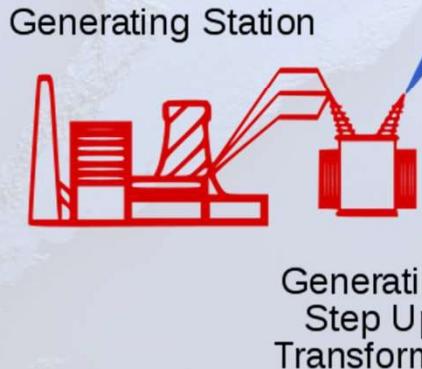


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Blockchain powered software interface



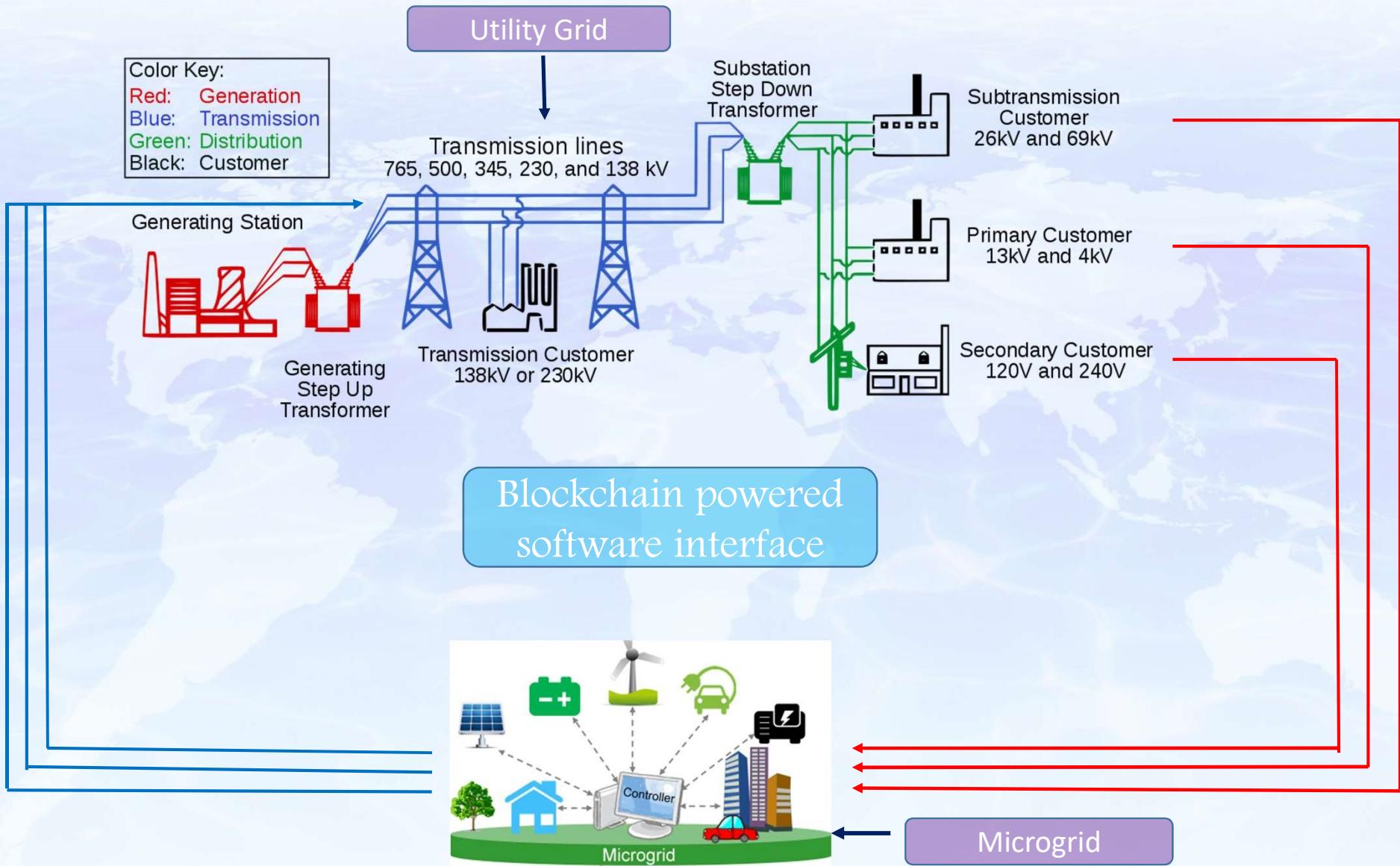
Color Key:
Red: Generation
Blue: Transmission
Green: Distribution
Black: Customer



Subtransmission Customer
26kV and 69kV

Primary Customer
13kV and 4kV

Secondary Customer
120V and 240V



□ Auditing algorithm

(Eco-Token mining)

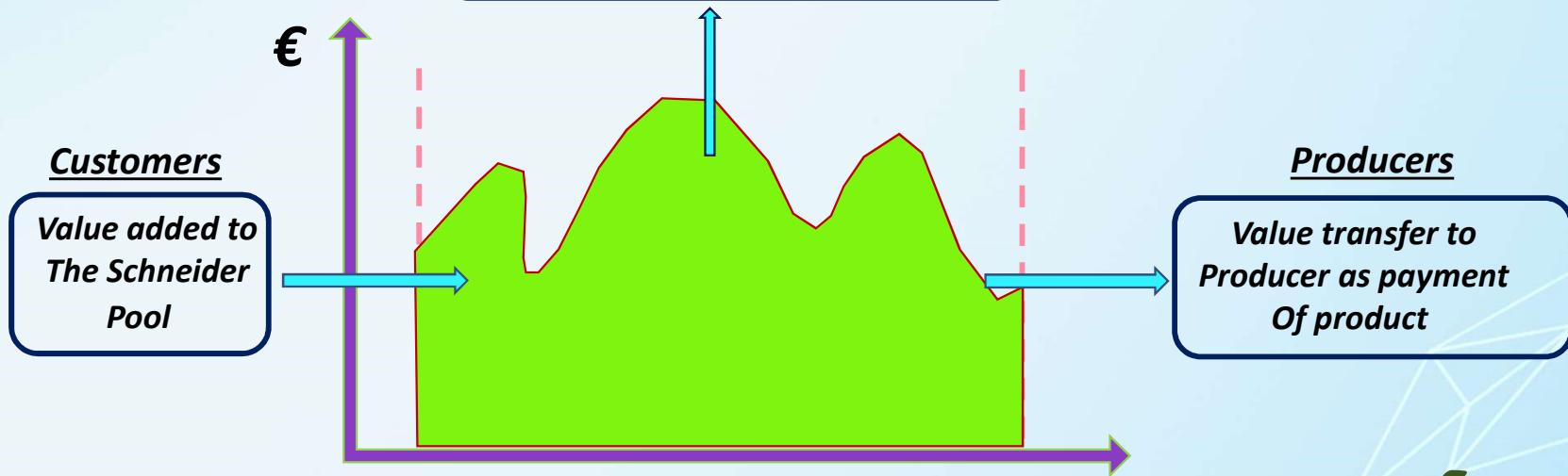
- The value of eco-token(1 unit of electricity) is a partial function of time , cost of production, demand-supply graph, transportation charges, etc .

$$\epsilon = \frac{dV}{dx} + \frac{dV}{dt} + \frac{dV}{du} + \frac{dV}{dv} + \dots$$

- So net value of services passes the supply chain at any instant of time.

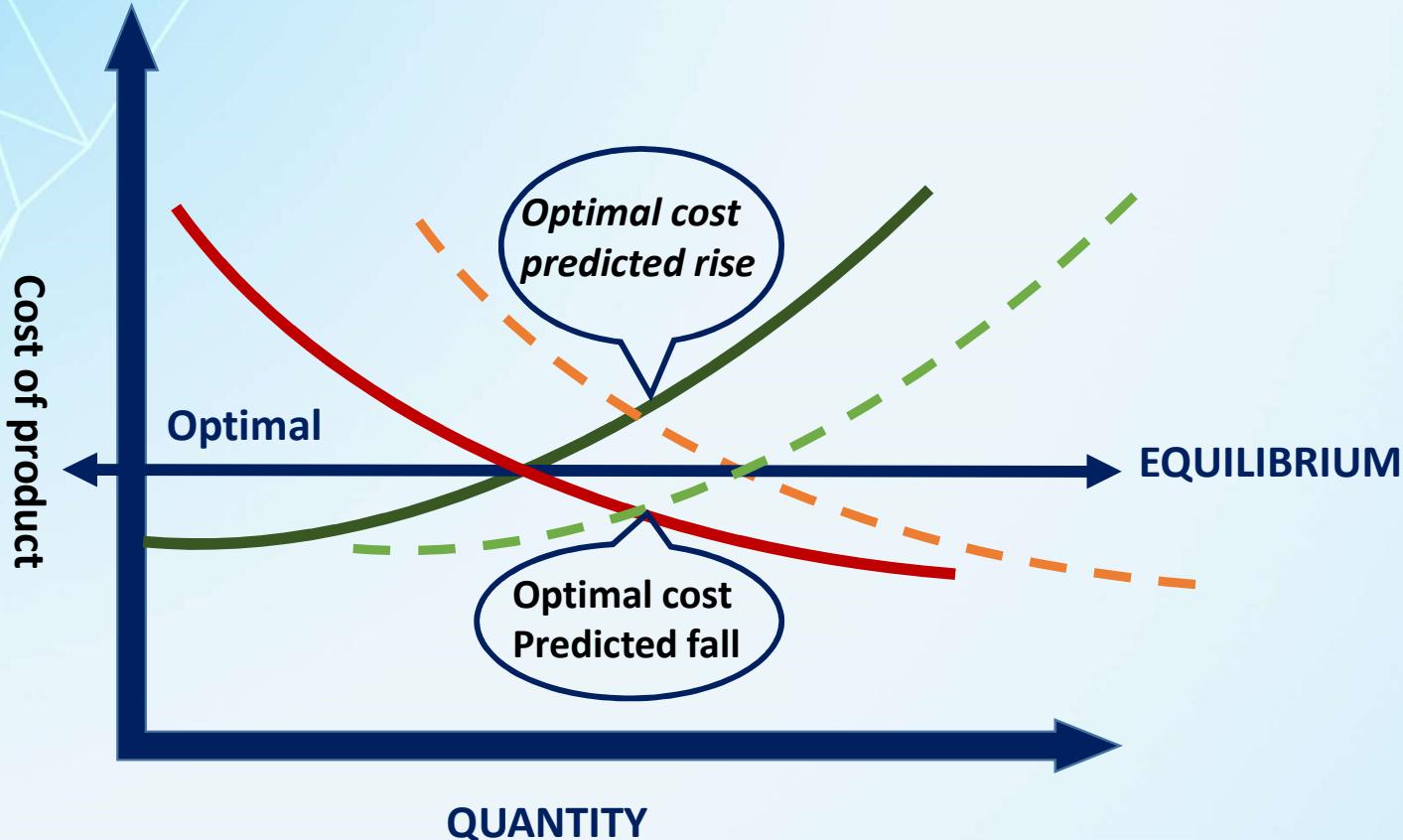
$$\int_a^b \epsilon dt = \text{value of services passes}$$

**12% of total value passed to
Eco structure as supply charge**



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Predicting algorithms

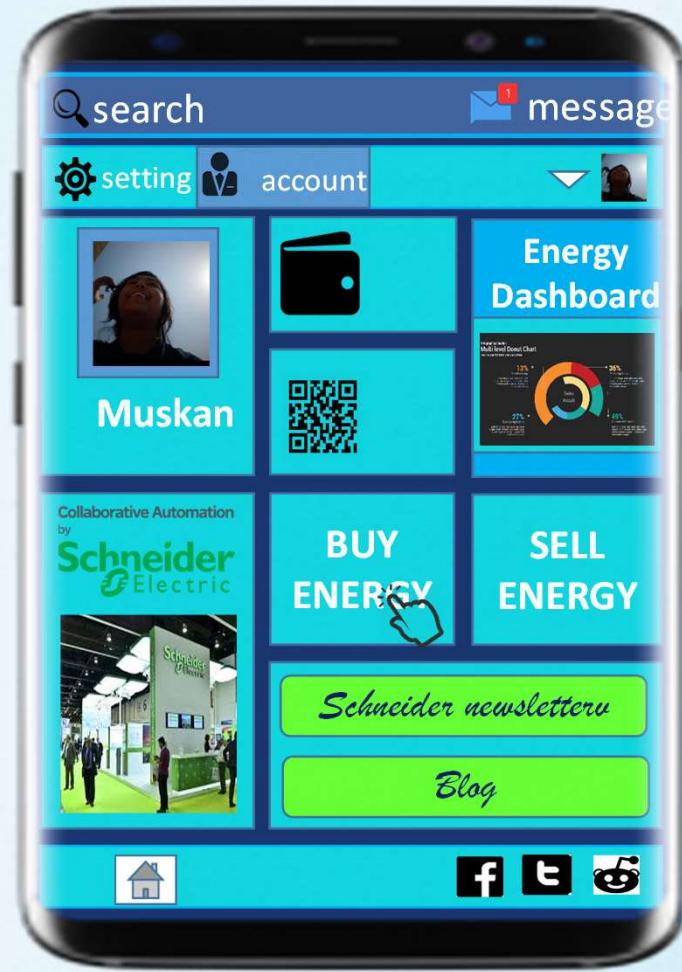


Predicting optimal cost on real time can enable us to trade at equilibrium and to create sustainable and reliable business

□ Interface

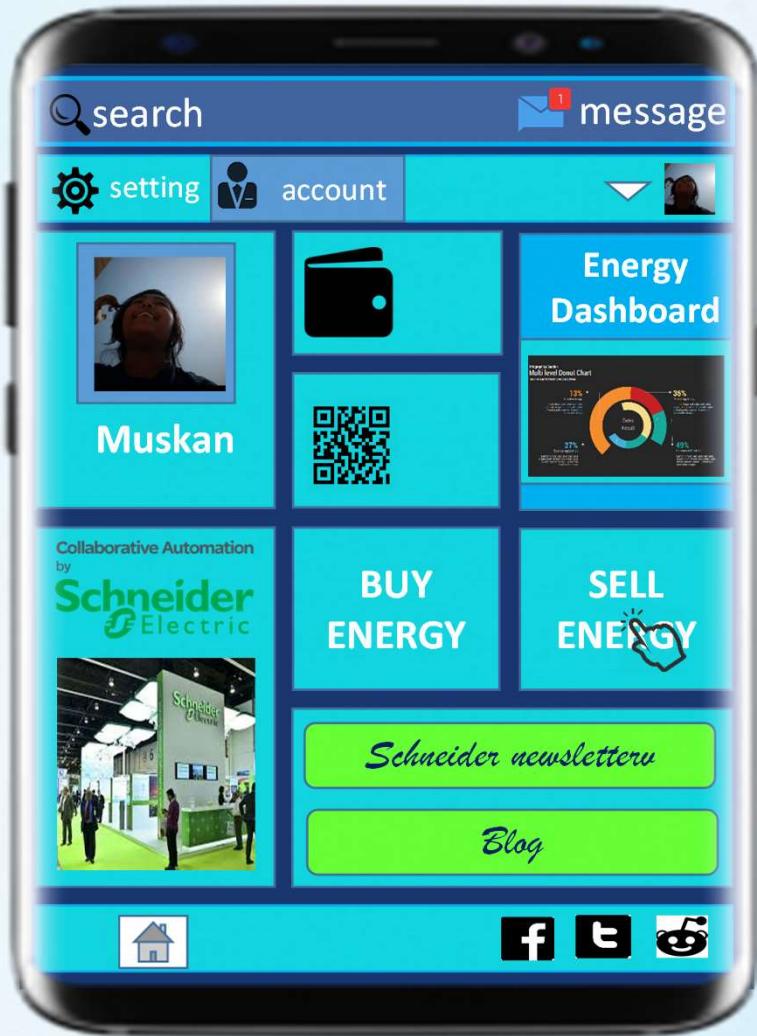
Interface

- Buy
- Access to utility grid



Interface

- Sell
- Join to Microgrid



- We will get competitive benefit.
- Our model is unique in such a way that ,we not just aim to available energy to all but inculcate their contribution toward energy management.

We believe,

“Energy is the Humans basic right, and they need to realize it”.

- In addition our solution can eliminate the use of fossil fuel and can achieve the target of Going Green in the City.