

The Changing Role of Customers in the Future Energy System



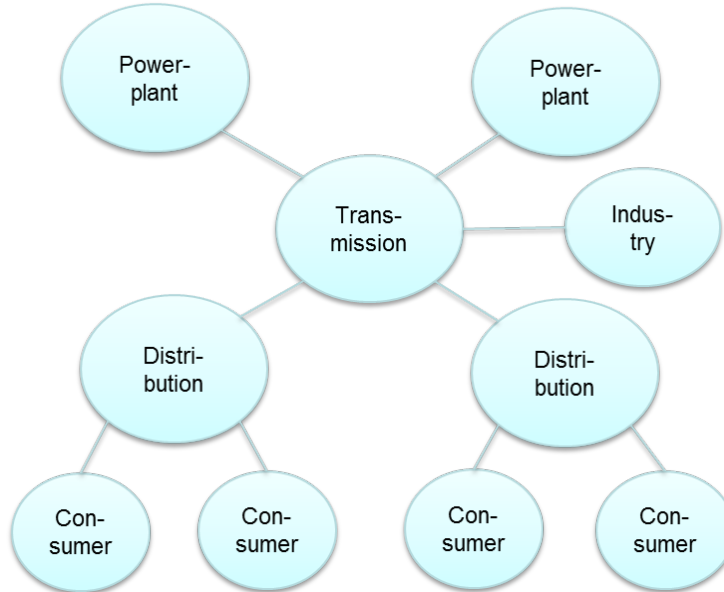
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Today's traditional energy system



Large centralized power plants burn fuel to extract energy for resale via a structured network

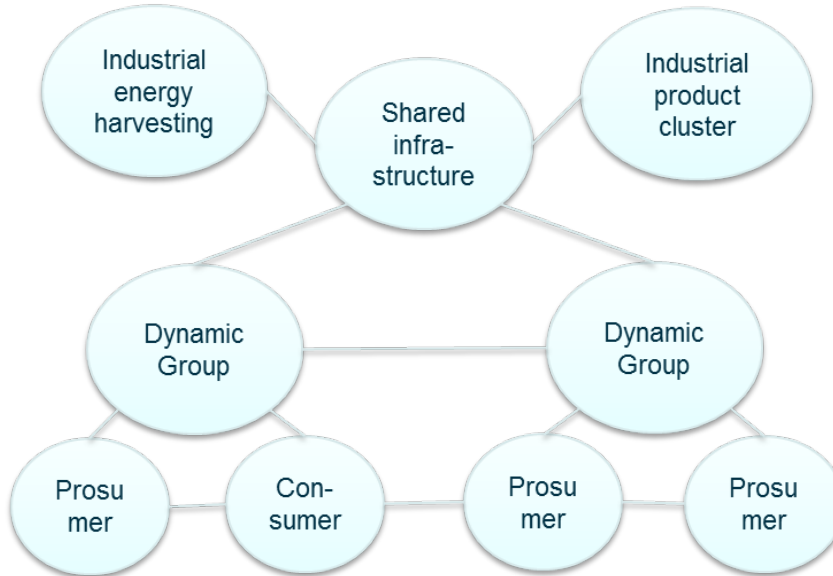
The network costs are less than the efficiency tradeoff of local fuel logistics and local equipment lifecycle costs

Regulation has opened access to the capital intensive monopolies and created "the liberalized energy market"





The Energy System of the Future



Energy is extracted from renewable sources by prosumers and industrially managed sites like wind/solar farms close to controllable loads and connected to dynamic groups to balance needs and overproduction

Network costs are balanced across shared infrastructure and dynamic groups based on actual network needs

Regulation opens access to common infrastructure and allows distributed allocation of resources while promoting open markets on all levels





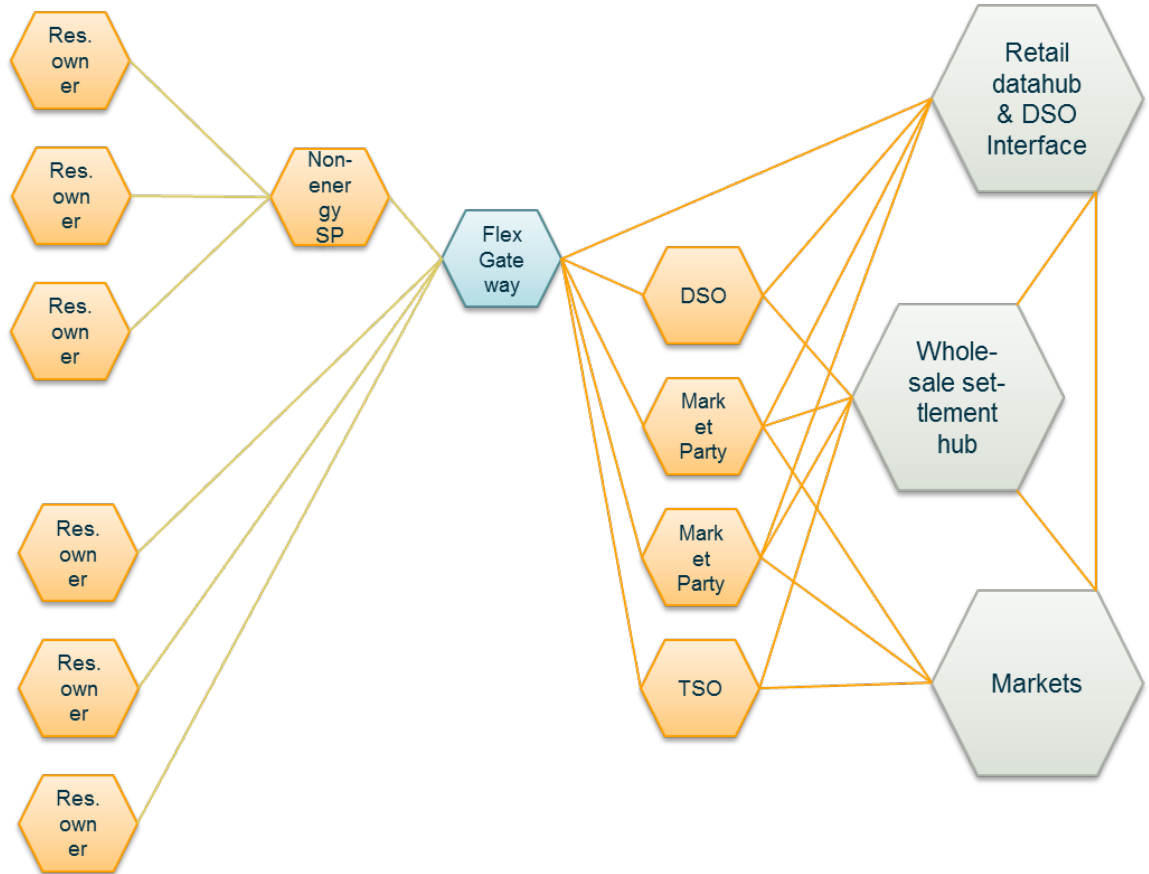
Customers and Market Access

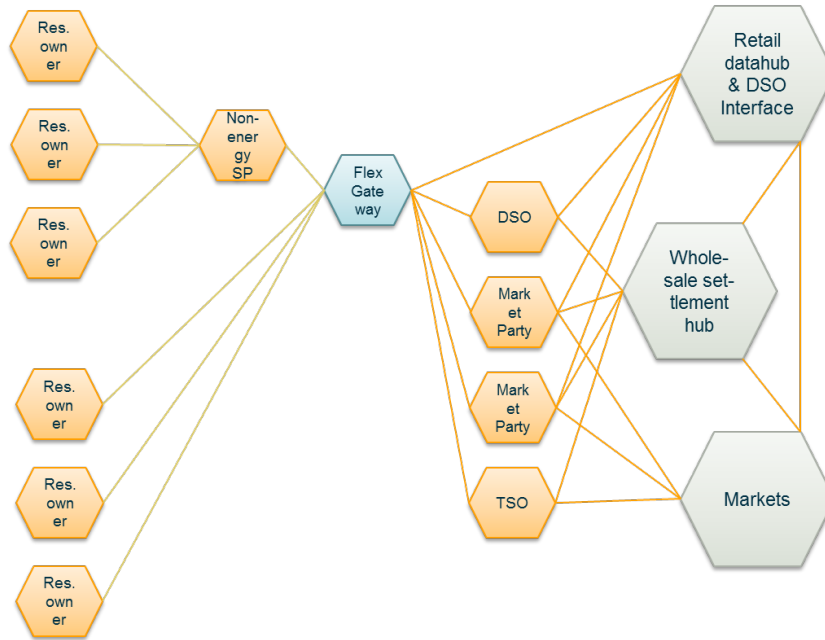
- In a distributed environment, relations multiply, costs change
 - Customers become participants
 - Participants become customers
 - Interactions happen across different levels
 - Production has zero marginal cost
 - System requires balance, creating value for flexibility
- Prosumers and customers have resources and value
 - Resources are activated with different technologies
 - Value comes from flexibility in volume and allocation
- Cost efficiency and benefits come from adding and modifying solutions
- New solutions need to interact with others
- All solutions need to be part of scalable market services
- **The Flexibility Gateway enables neutral market access while providing multiple technology capabilities**





Future Energy Market Structure





Thank you for your attention

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