



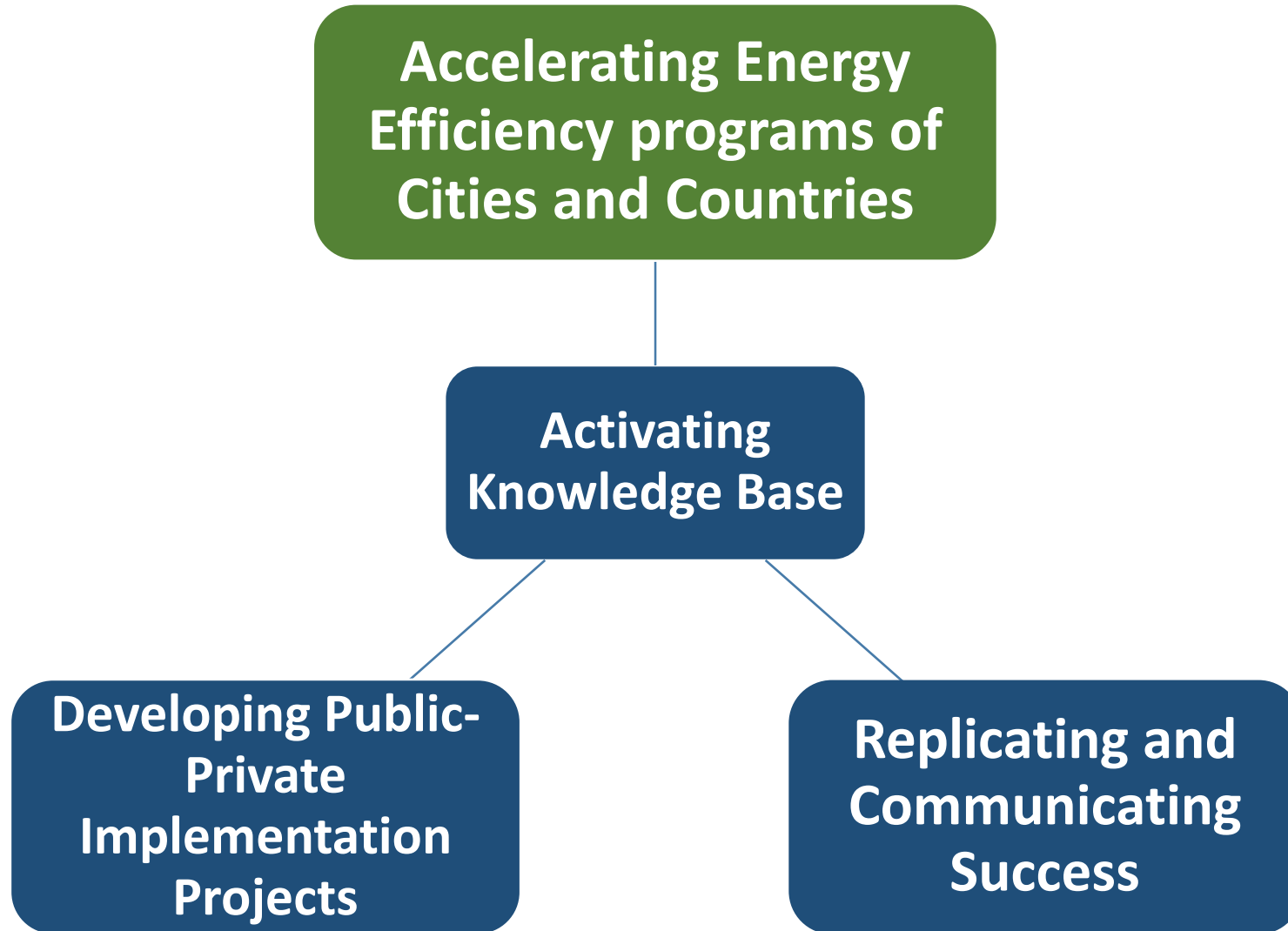
**COPENHAGEN CENTRE
ON ENERGY EFFICIENCY**
SEforALL EE HUB



The institutional set-up

- **Collaborating Centre supporting UN Environment** for 27 years
- **65 economists and scientists** from more than 26 different nations
- **Integral part of DTU Management Engineering**
- **A wide network of collaborating institutions** and partners in more than 50 developing countries
- **A non profit public institution** with highest standards on procedures, transparency and accounting.

The Copenhagen Centre on Energy Efficiency



Energy & Climate challenges: an opportunity for blockchain?

- Energy transition to a decarbonised energy sector
- Decentralised generation, RE, EE, consumer centred
- Energy-as-a-service

- Use of blockchain beyond cryptocurrencies
- Pilot examples of peer-to-peer in RE
- What about EE?

Obstacles to realisation of Energy Efficiency potential

Market mechanisms

Informational

Financial

Regulatory

Technical

Why are financial issues "an issue" to Energy Efficiency?

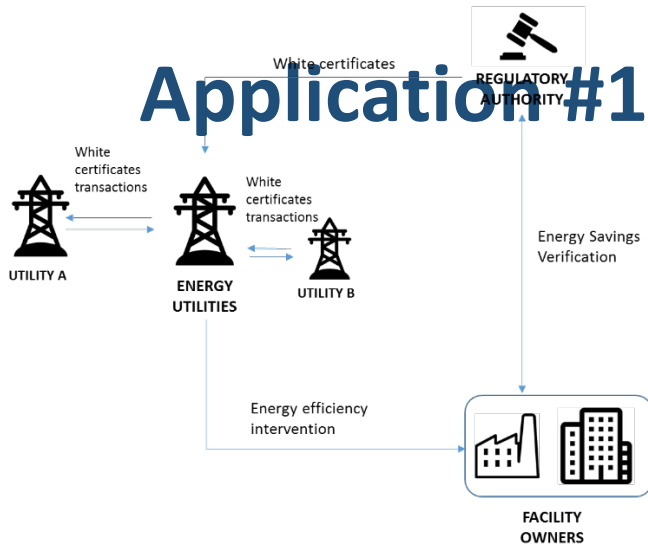
Lack of capacity

High transaction costs

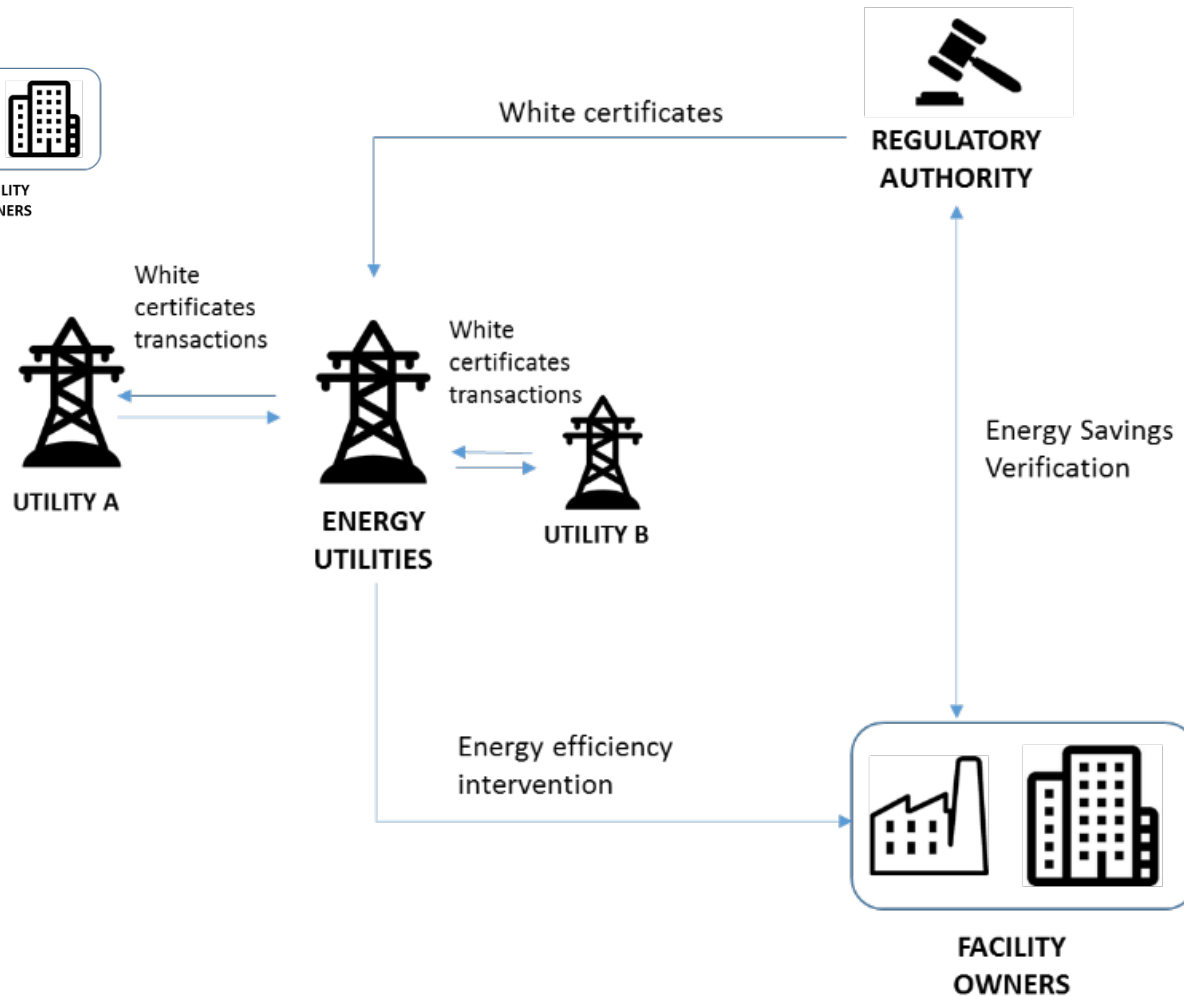
Small Projects

Difficult to access debt

Application #1: Energy Efficiency Certificates (*White Certificates*)

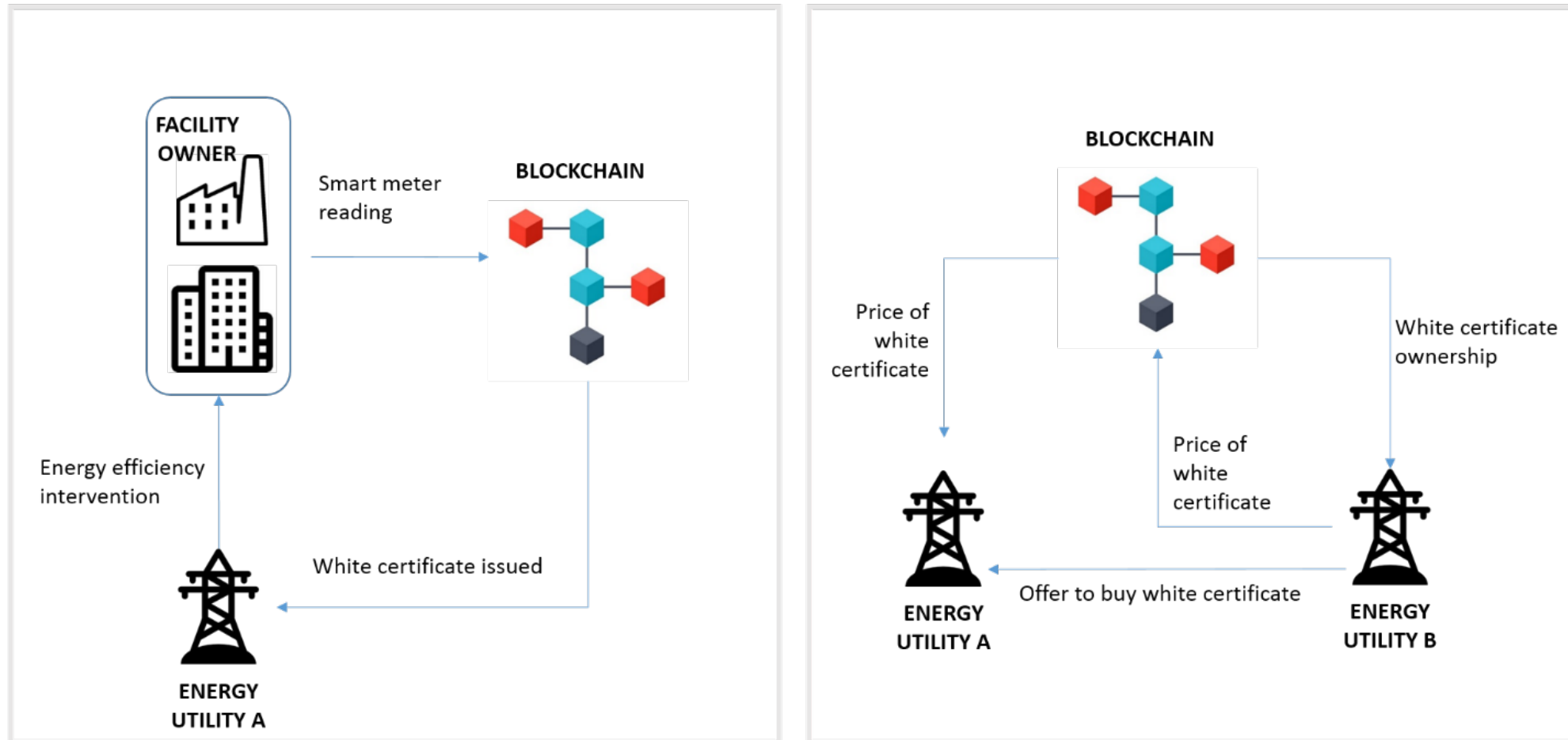


White Certificates Traditional Model



Application #1: Energy Efficiency Certificates (*White Certificates*)

Blockchain-based marketplace for white certificates

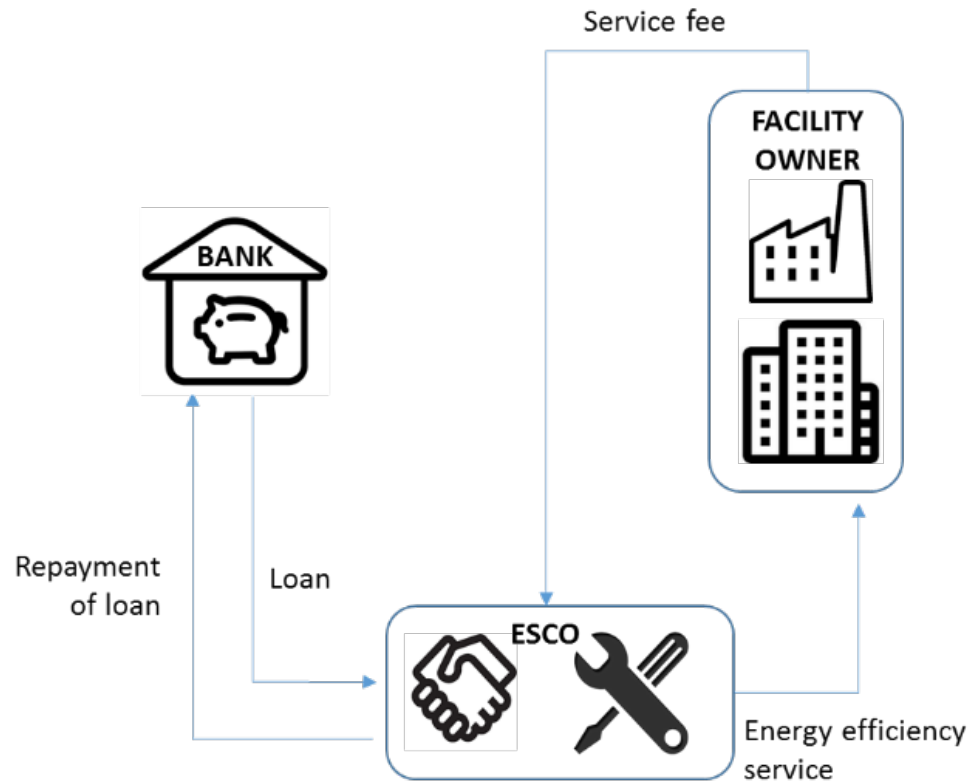


Issuing certificates

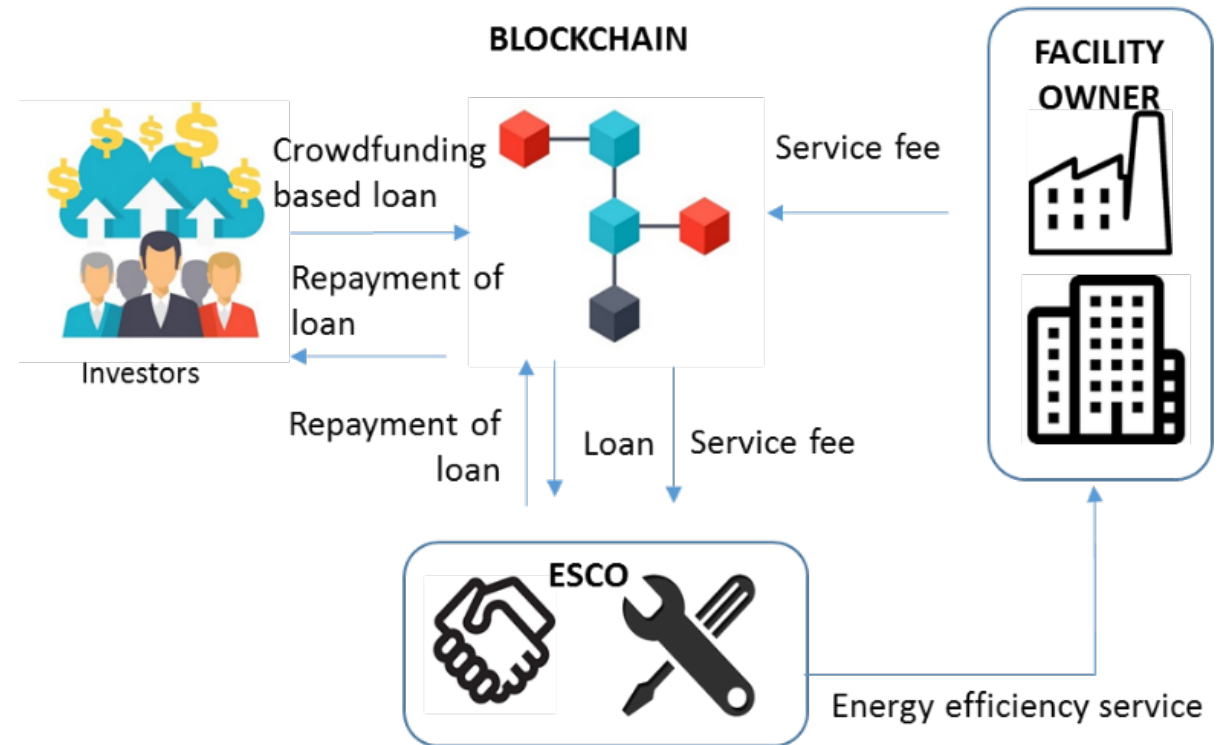
Transacting certificates

Application #2: Energy Service Companies (ESCOs) & Crowdfunding

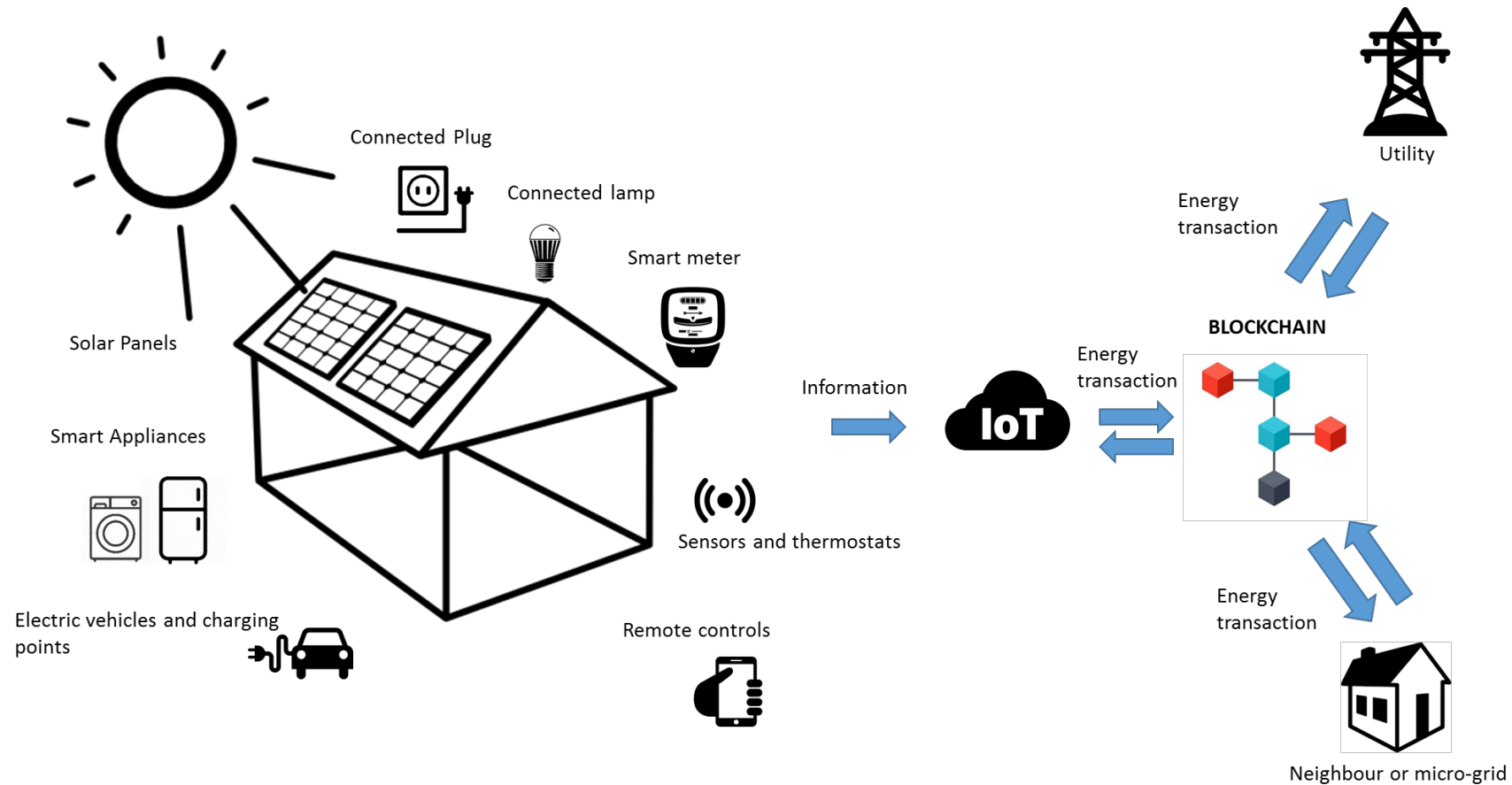
ESCO Traditional Model



ESCO Blockchain-based Model



Application #3: Flexible Energy Demand and Supply



Limitations & Conclusions

- Nascent technology
- Heavy computational power & energy demand
- Interoperability issues among different blockchains, speed, scalability
- Decentralization and regulation
- Soon outdated?

Thank you.

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