

2018

INNOVATION WEEK

solutions for a renewable-powered future



FLEXCoop

Aggregator: Focusing on Citizen Empowerment

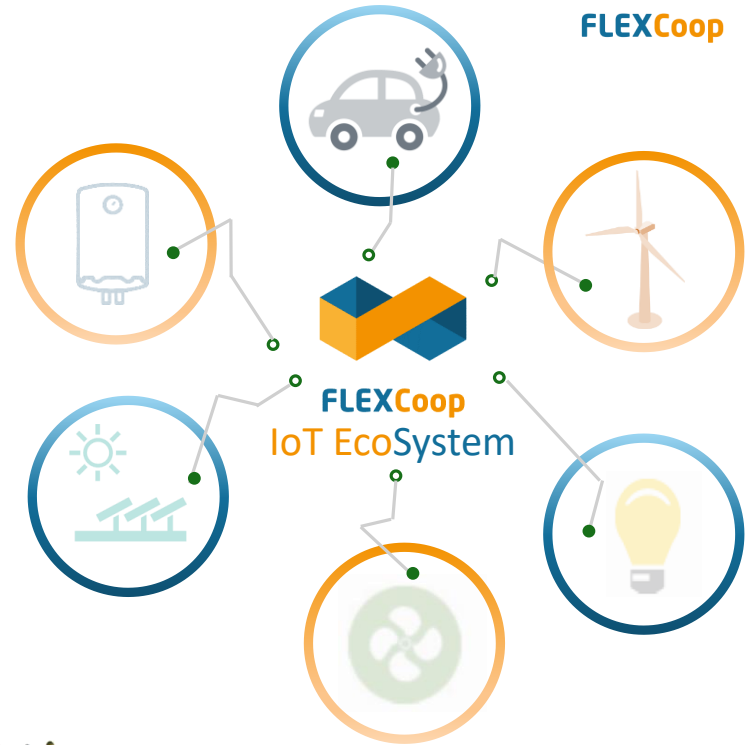
Katerina Valalaki

 *Hypertech S.A*

Outline



- The **FLEXCoop** project
- What is **prosumer empowerment** for FLEXCoop?
- FLEXCoop **living lab** and first insights
- Why **energy cooperatives** in the role of aggregator?
- What FLEXCoop can provide **now?**

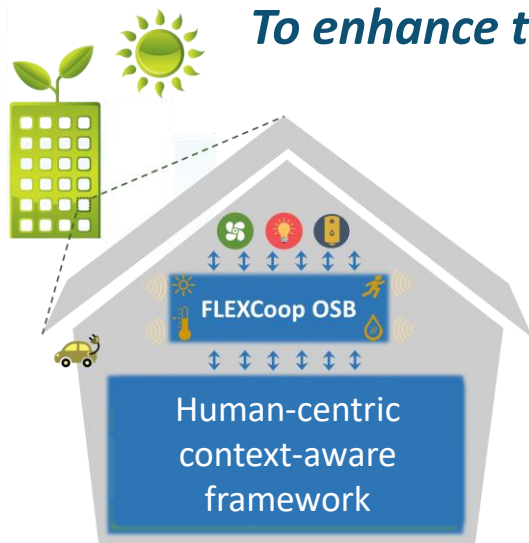


FLEXCoop

Democratizing energy markets through innovative flexibility-based DR tools and novel business and market models for energy cooperatives



To enhance the participation of citizens in energy markets



PARTNERS



The FLEXCoop project



THE PROBLEM ?

Small consumers excluded from energy markets

- Lack of smart / **real-time metering**
- **Regulatory** framework in most EU Countries
- **Non-viable market** offerings for small consumers

THE NEED

- Make prosumers understand their flexibility
- **Aggregation** / overcome minimum sizing of bids
- **Fair contractual** relationships with aggregators
- Highly effective **automated DR** strategies



THE FLEXCoop SOLUTION

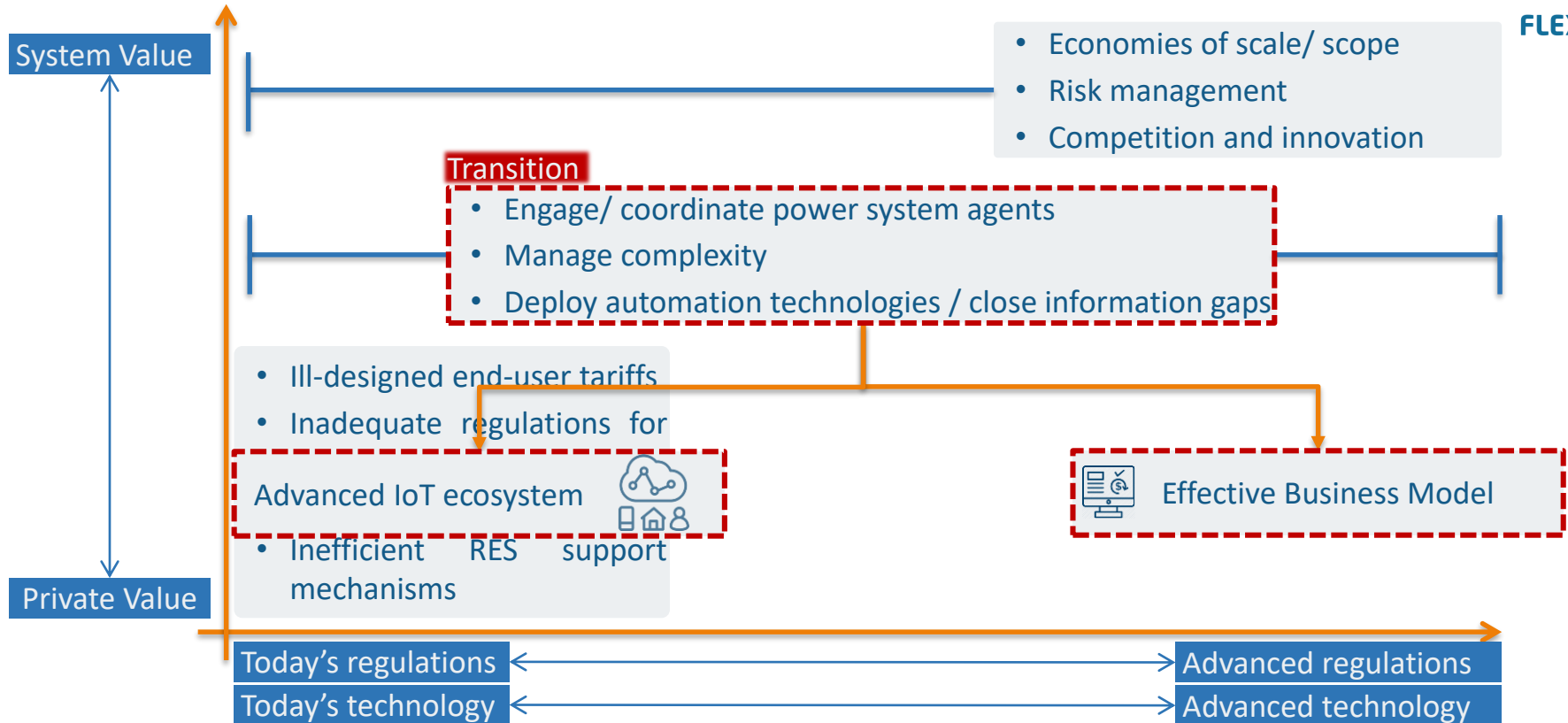
- **Cooperatives** as aggregators / New business model
- **End-to-end automated DR** optimization framework
- Flexibility based on low-level metering / ambience sensing/ **human-centric approach**
- **Dynamic** Virtual Power Plant creation

Current vs future status / Bridging the gap



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*The value of aggregators in Electricity systems, S. Burger et al., MIT CEEPR, 2016

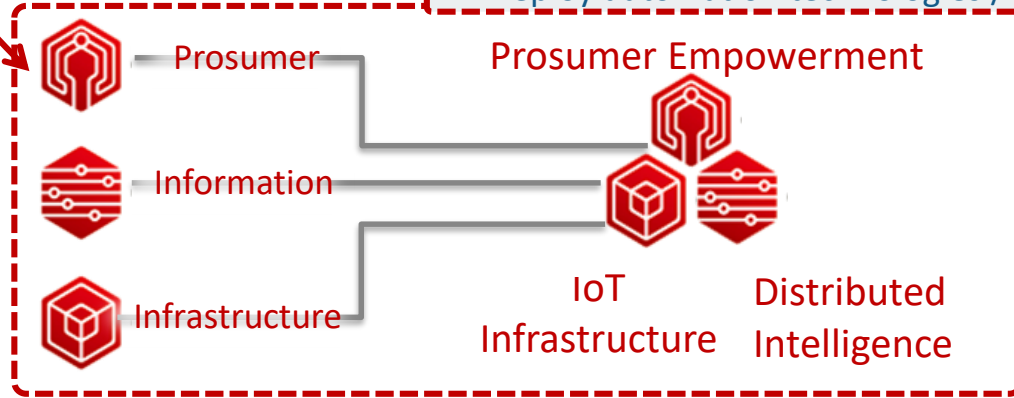


PUT PROSUMER AT THE CENTRE

Transition

- Engage/ coordinate power system agents
- Manage complexity
- Deploy automation technologies / close information gaps

Human-Centric Innovation





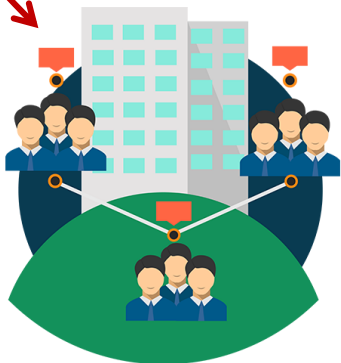
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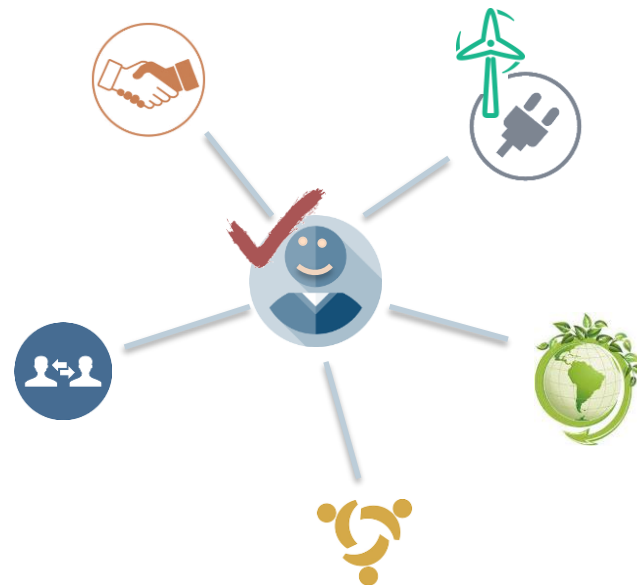
Cooperative as aggregator



RESCoop business models*

- Local group of citizens
- Regional RESCoop
- Fully integrated RESCoop
- Network of RESCoops
- Multi-stakeholder governance
- Non-energy-focused

PUT PROSUMER AT THE CENTRE

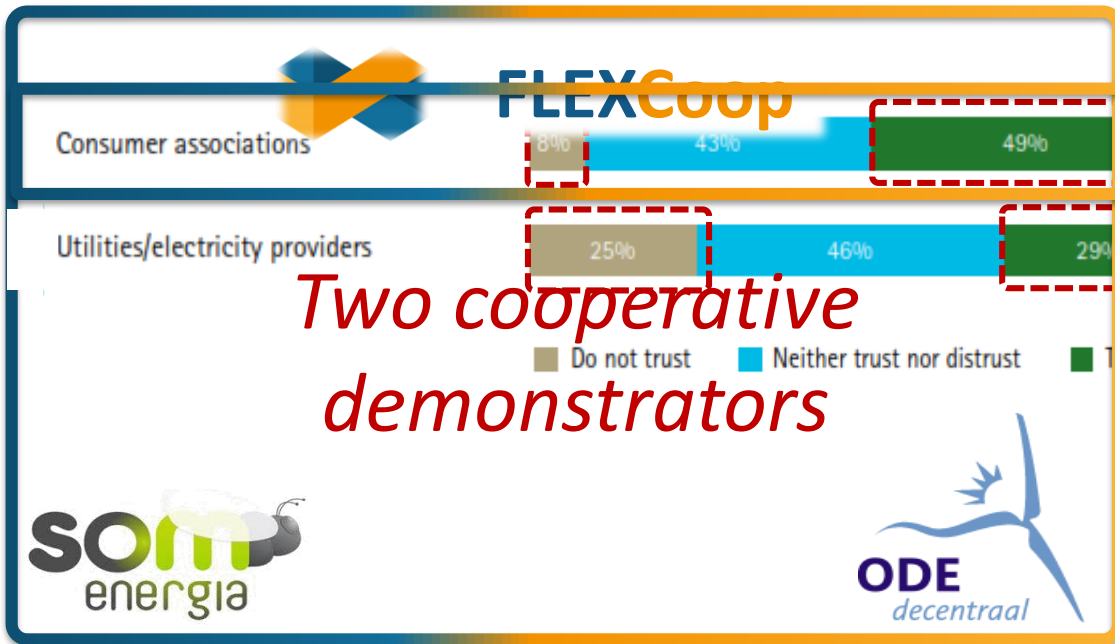




THE **FLEXCoop** SURVEY REVEALS THAT THE KEY AREAS THAT PROSUMERS CONSIDER TOWARDS PARTICIPATING IN DR ARE:

- Contribute to **sustainability**
- Full respect of their **comfort**
- Bill reduction / energy **savings**
- Building **trust** through transparency
- Full respect of **data privacy**





Rapid proliferation of energy cooperatives around EU



Regulation favours collective schemes



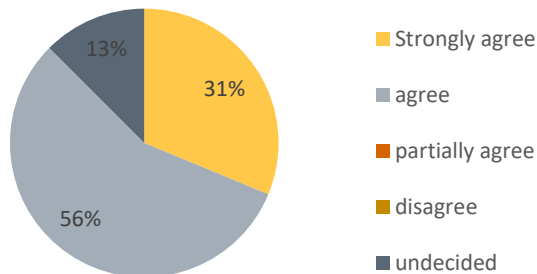
Cooperative **members** are already **sensitized**



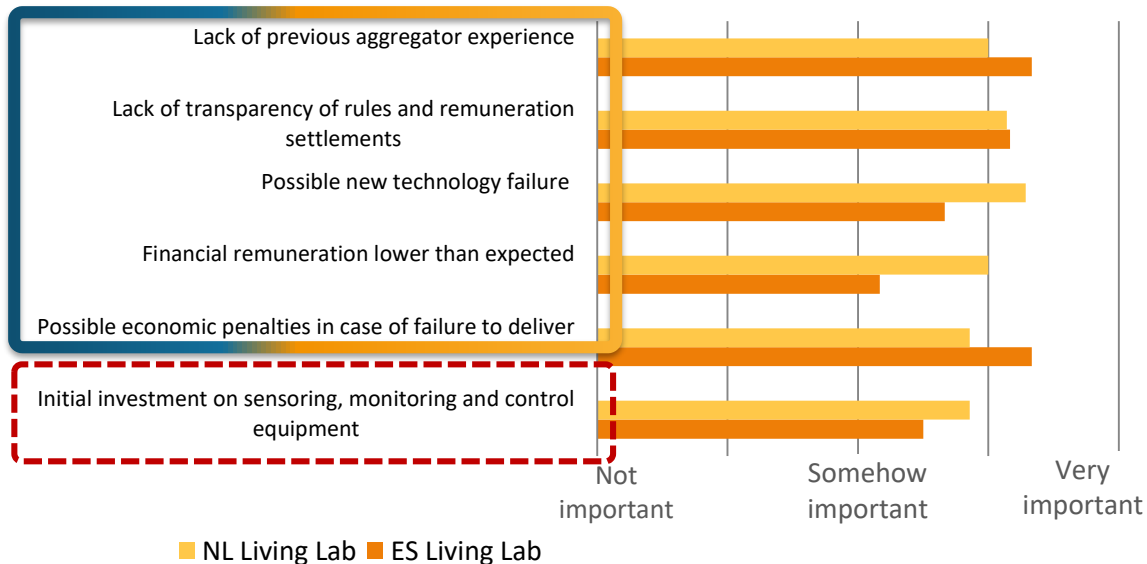
Increased Empowerment

What the cooperatives really want ?

16 cooperatives from Netherlands, Spain, Belgium and France participate in the FLEXCoop survey



Percentage of cooperatives willing to participate in DR schemes



Barriers importance rate perceived by cooperatives for DR aggregation role



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Customer satisfaction



Community-based Organisation



Cooperatives' Willingness

What FLEXCoop can provide now/ *Smartness in the end-user service*



Products and services currently received from electricity provider

Interest in products and services provided by electricity providers (very/somewhat interested)

Devices or services to automate home energy management based on your preferences (e.g., remotely control and automate lighting, heat in your home and some home appliances)



Installation and/or maintenance services for home energy devices (e.g., thermostat, furnace, water heater, air conditioner, major home appliances, solar panels)

Consumer Satisfaction = Consumer engagement!

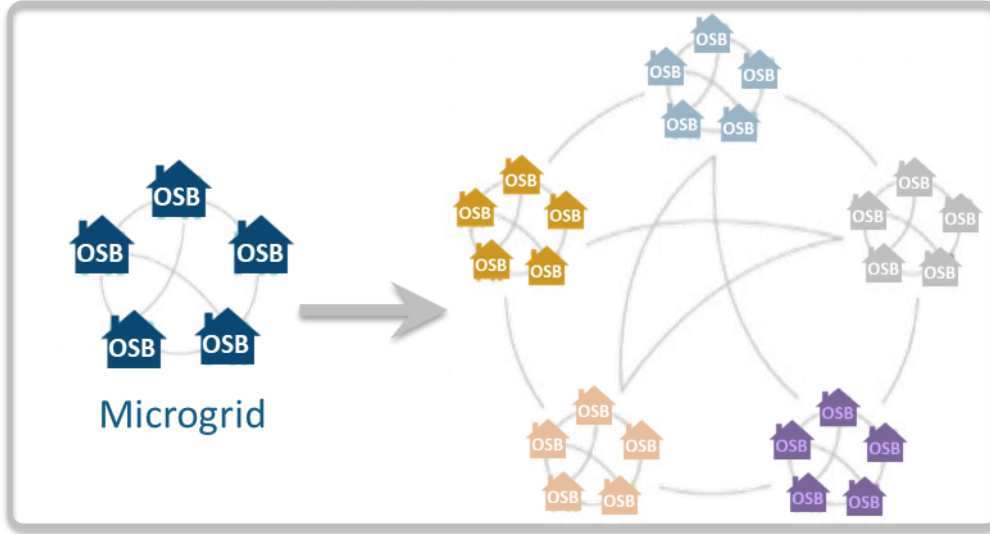


- ✓ Engage the next Generation (Younger Consumers Trends)

What FLEXCoop can provide now/ *FLEXCoop distributed intelligence*



Cooperative / Aggregator



Members of
a cooperative

FLEXCoop Solution

- Integrated fully-fledged automated solution
- **Autonomous systems** with sensors & actuators (aware of their environment)
- Energy information & control network with **distributed intelligence**
- Advanced **control optimization** capabilities
- End-to-end interoperability / **free communication** / *standard-based protocols*
- Self organization in an optimal way



COOPERATIVE AS AGGREGATOR

- ✓ Decentralized energy generation
- ✓ Trustworthy relationships – one of the main prosumers' requirement
- ✓ “Think global – act local slogan” / a community –based approach
- ✓ Already engaged/aware prosumers / Easier communication/awareness on DR
- ✓ Familiar with “smart world”

FLEXCOOP IOT INNOVATION

- ✓ Prosumer-centric innovation / Respect prosumer's comfort and preferences
- ✓ The solution is designed following a bottom-up approach
- ✓ Non-intrusiveness/ plug and play solution
- ✓ User friendly solution providing a unique user experience
- ✓ Personalised fully adaptive solution

Thank you for your
attention...!!!



FLEXCoop

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