



From commercial to residential: extending Energy Performance Contracts

March 18°, 2022 14:30 - 16:30 CET



frESCO, SENSEI and amBIENCE projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 893857 , 847066, 847054.

Agenda

14:30 Welcome speech

Topics of discussion:

14:40 *Market and regulatory framework*

15:00 *Strategies to promote energy efficiency and reduce costs of the energy transition in the residential sector*

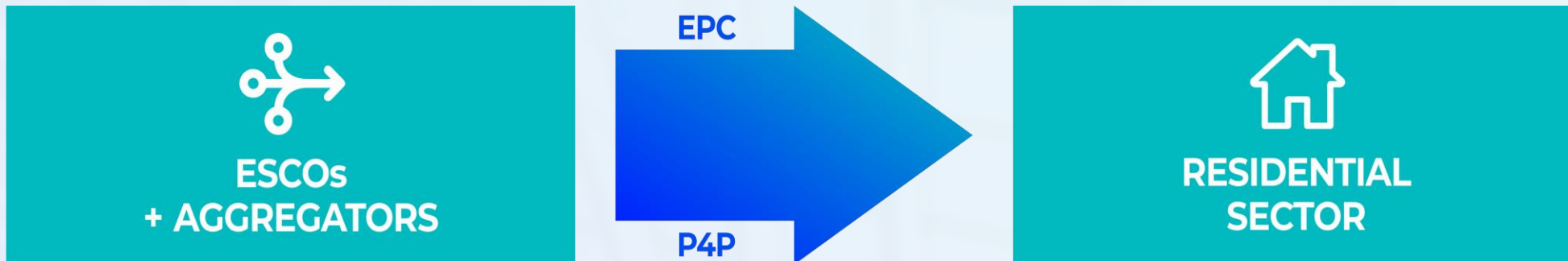
15:20 *Emerging business models and actors*

15:40 *Risks and opportunities*

16:00 Polls and Q&A session

16:30 Conclusions

Introduction



EPC + P4P

01.06.2020 - 30.11.2023

14 partners

4 pilots



EPC + P4P

01.09.2019 - 31.08.2022

14 partners



Active Building EPC

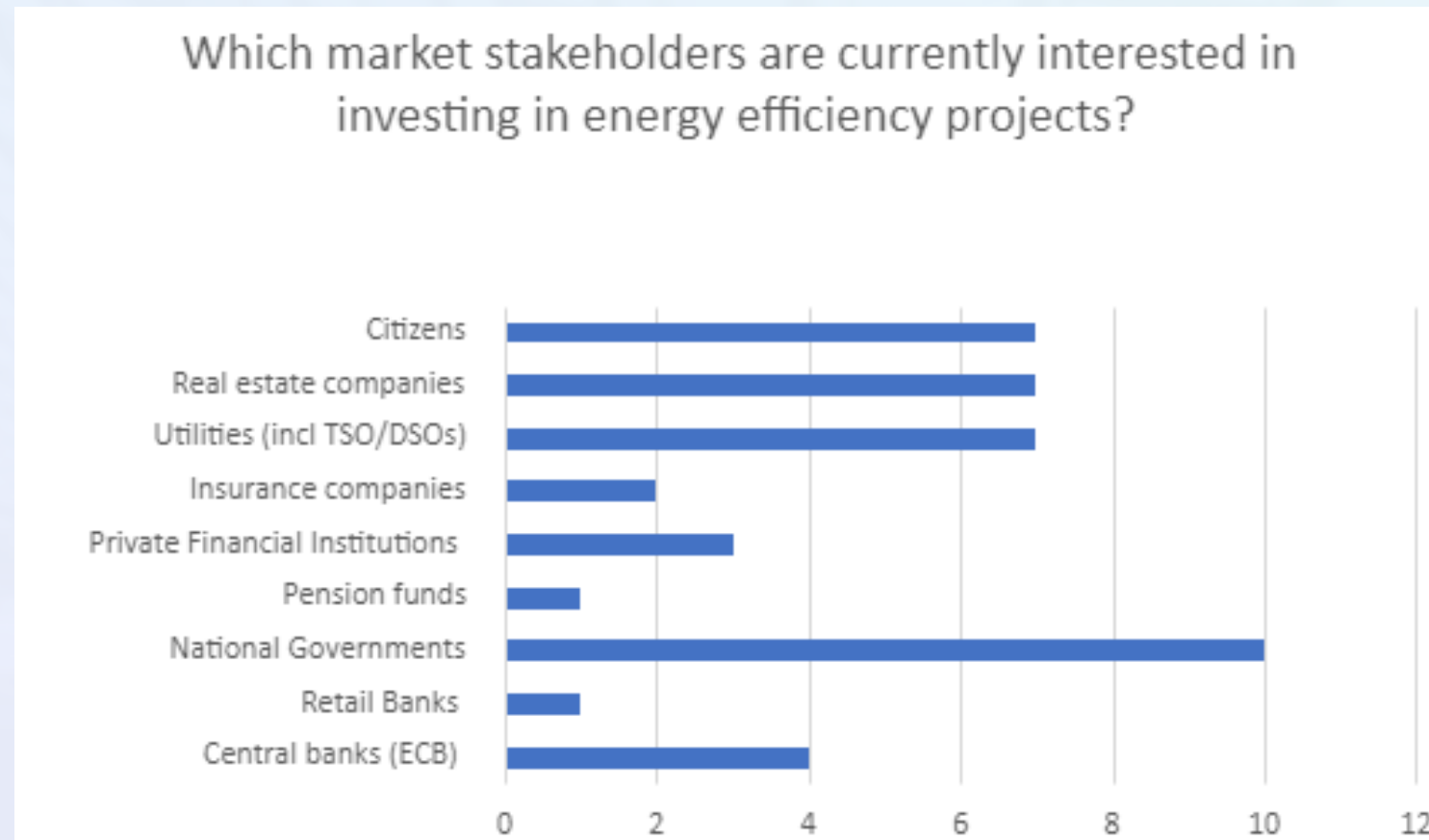
01.06.2019 - 31.05.2022

8 partners

2 pilots

Market and regulatory framework

- Results from the survey:



1. Market and regulatory framework



- Difficulty with market openness and lack of consistency within Europe for flexibility (explicit)
- Attractiveness or not, of residential sector for efficiency and flexibility.

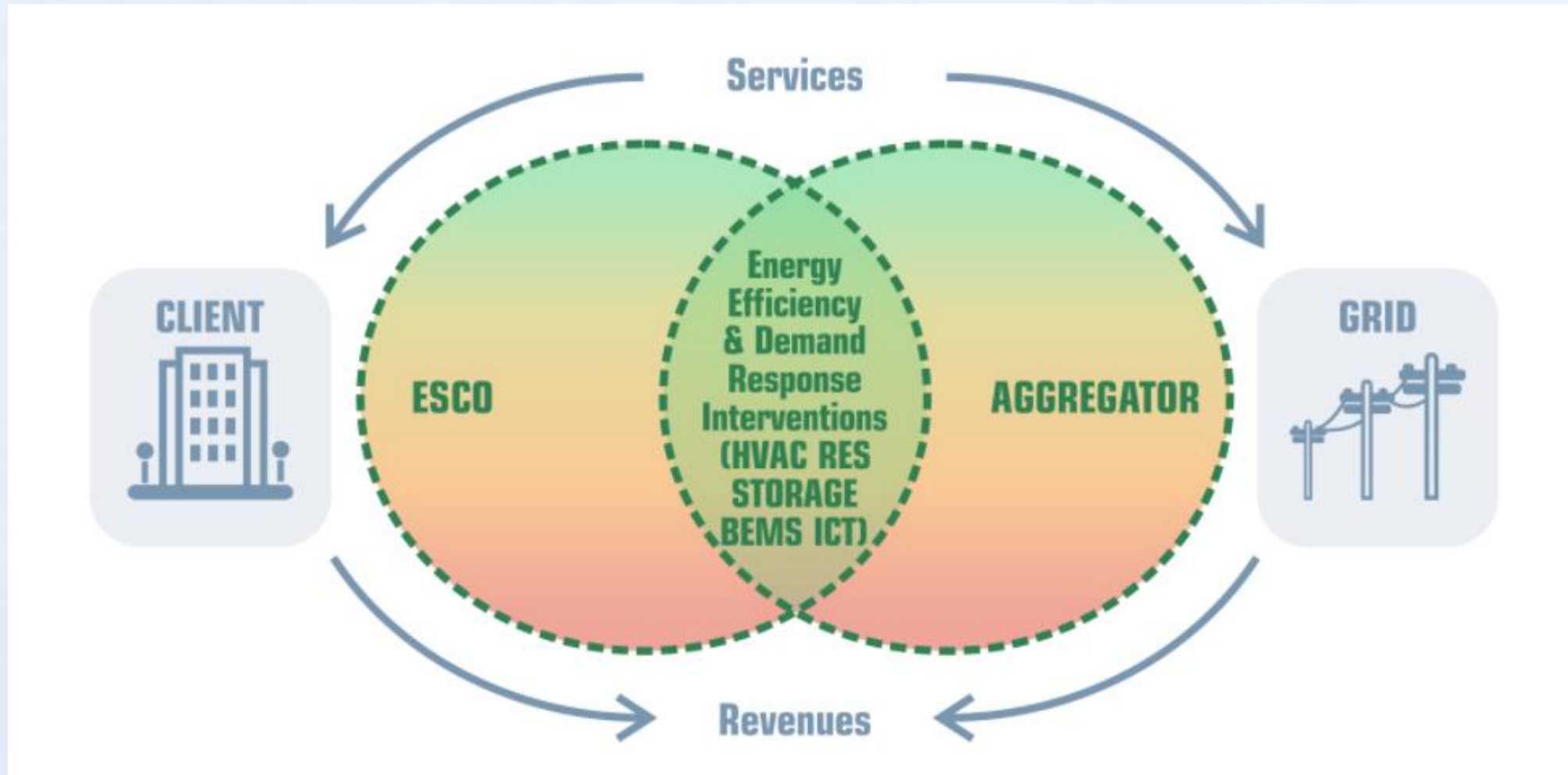


- Energy Efficiency as a demand side resource contributing to grid stability (Electricity Market Directive)
- Energy Efficiency Obligation schemes (EED Art7)
 - Pay-for-Performance valorizes EE services based on advanced MRV



- Aggregation of flexibility in buildings via implicit and explicit Demand Response
- Optimizing the financial and CO₂ savings business case for deep building renovation via the Active building Energy Performance (AEPC model)
- AEPC market development in Europe and the role of Active control solutions

FrESCO model



EU-Directives

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graph TD; A[EU-Directives] --> B[National laws]; B --> C[Market Regulation];
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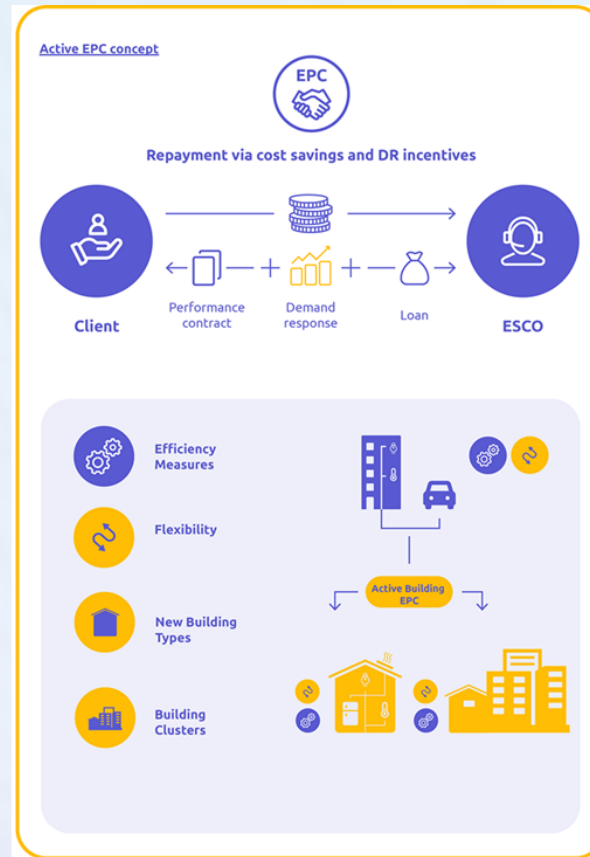
National laws

Market
Regulation

New Concept: Active building EPC (AEPC)



Traditional EPC



Active Building EPC

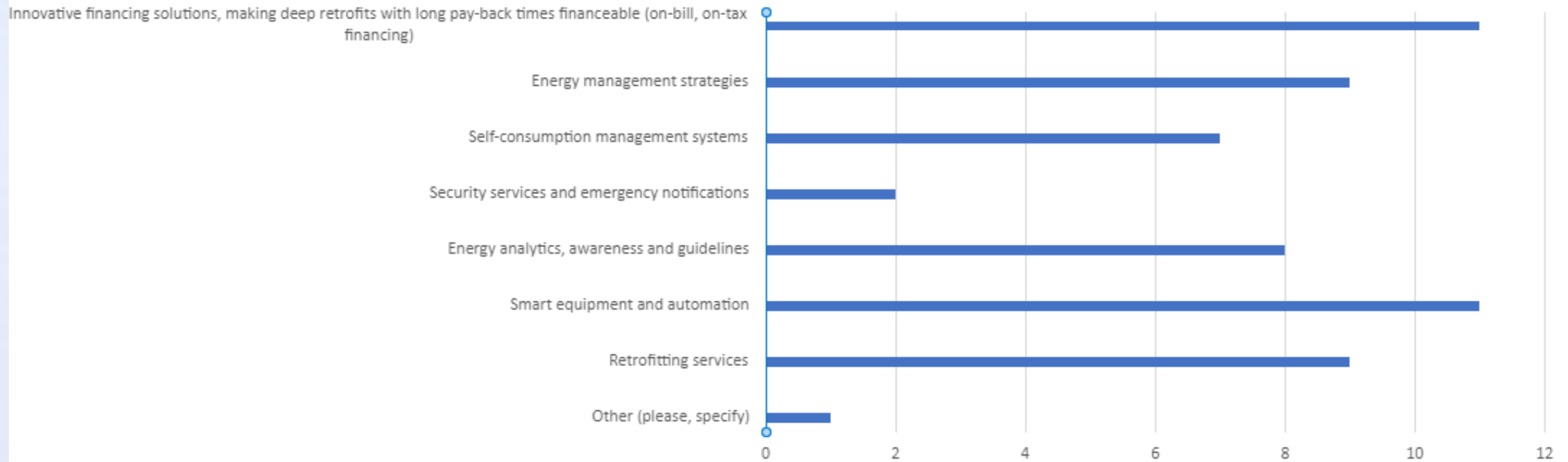
Extending energy performance guarantees related to energy efficiency to include the valorisation of flexibility through Demand Response (DR) services

Tailor EPCs to a broad scope of building types: residential, hospitals, education, offices, commerce, etc

Extending the scope of EPCs to groups/clusters of buildings under the concept of (local) energy communities.

Strategies to promote energy efficiency and reduce costs of the energy transition in the residential sector

What are the main services that should be provided to achieve an energy efficiency upgrade in the residential field?



2. Strategies to promote energy efficiency and reduce costs of the energy transition in the residential sector



- Combining all possible revenue streams in one package.
- Data driven solutions to improve ease of implementation.
 - Engaging prosumers/consumers, user centric.

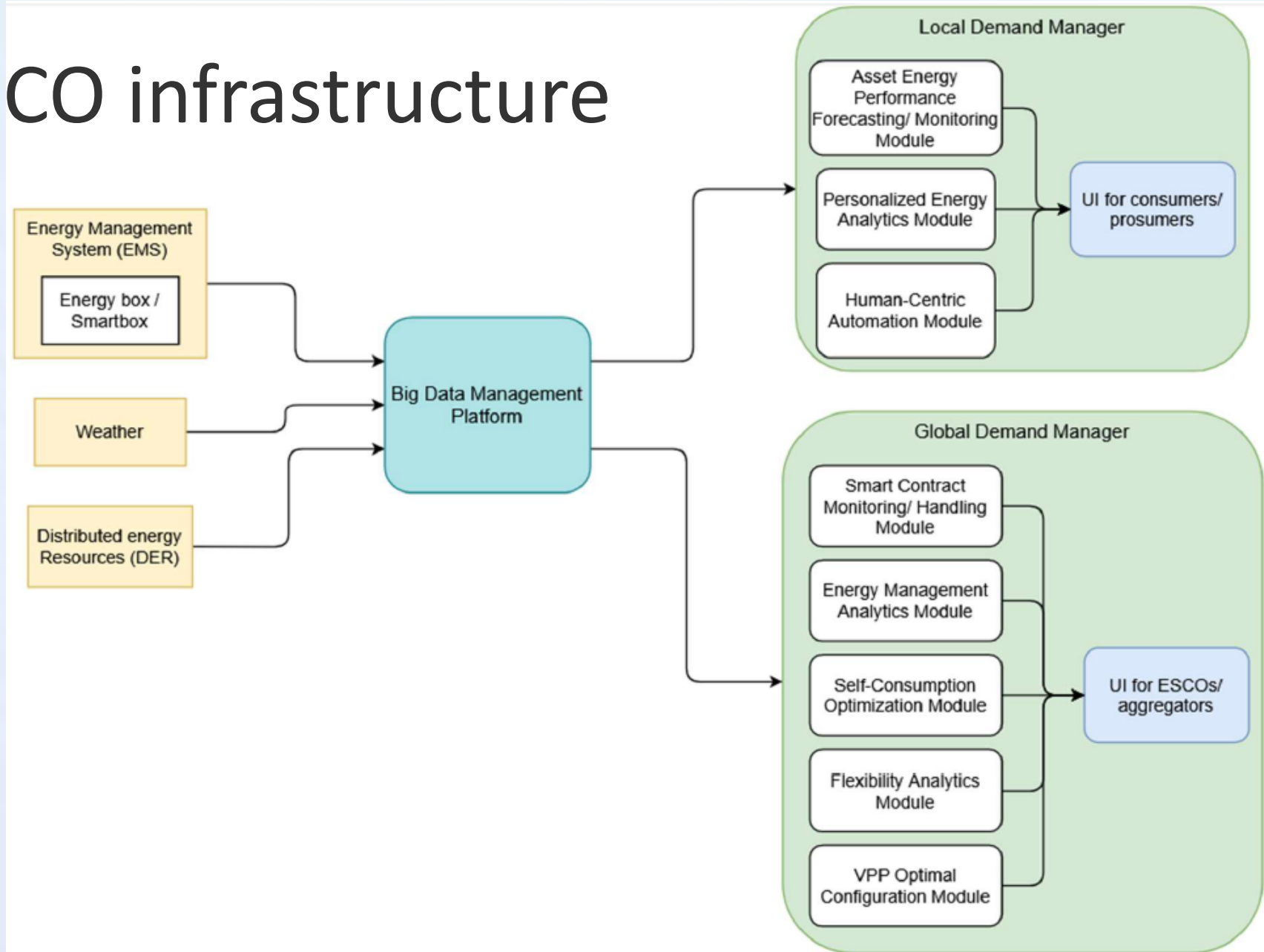


- Aggregation into portfolios can unlock private investment in EE
- The current energy crisis shows the real potential of performance-based EE
- P4P allows to quantify and market the extra benefits of EE to system operators and energy utilities



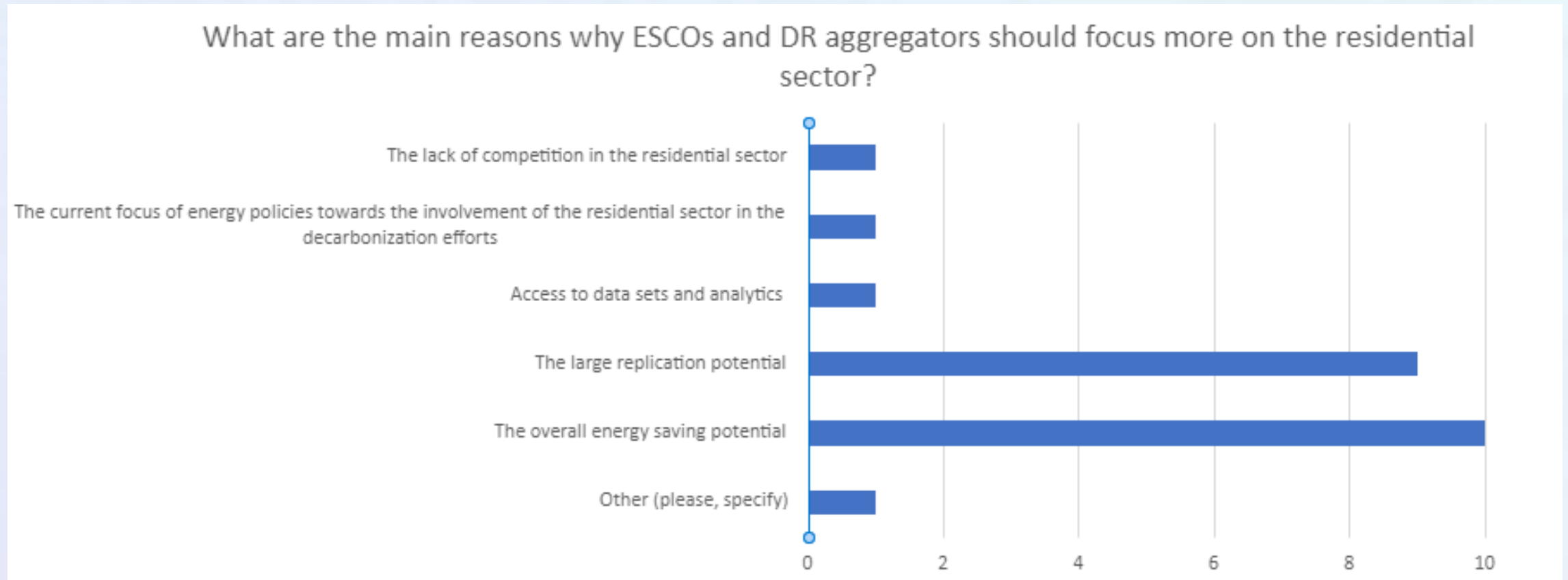
- Improve the basic EPC business model via AEPC
- Electrification of heat supply in combination with PV and intelligent insulation strategy
 - Active smart heat control, smart EV control

FrESCO infrastructure



Emerging business models and actors

- Results from the survey:



3. Emerging business models and actors



- Short PBP to stimulate financing
- Automation/analytics: financially more viable
- Maintain comfort levels for residents
- Aggregators more than ESCOs - Produce revenues

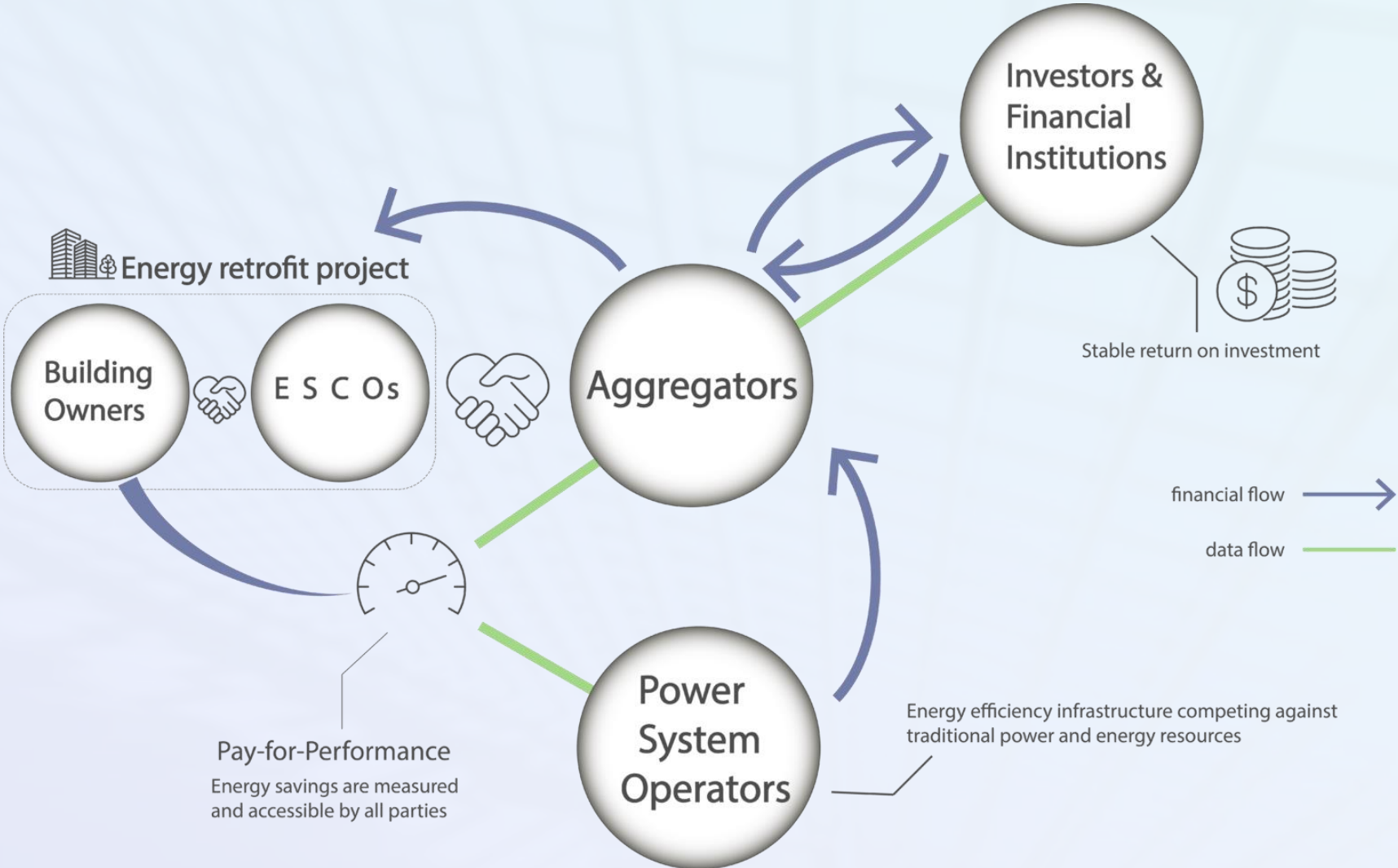


- P4P to improve EPCs with metered savings and performance guarantees:
- EE Aggregator: aggregator can be an integration of a technical role and financial role
- Advanced Measurement & Verification technologies, can dynamically estimate and market energy efficiency savings and demand side flexibility resources

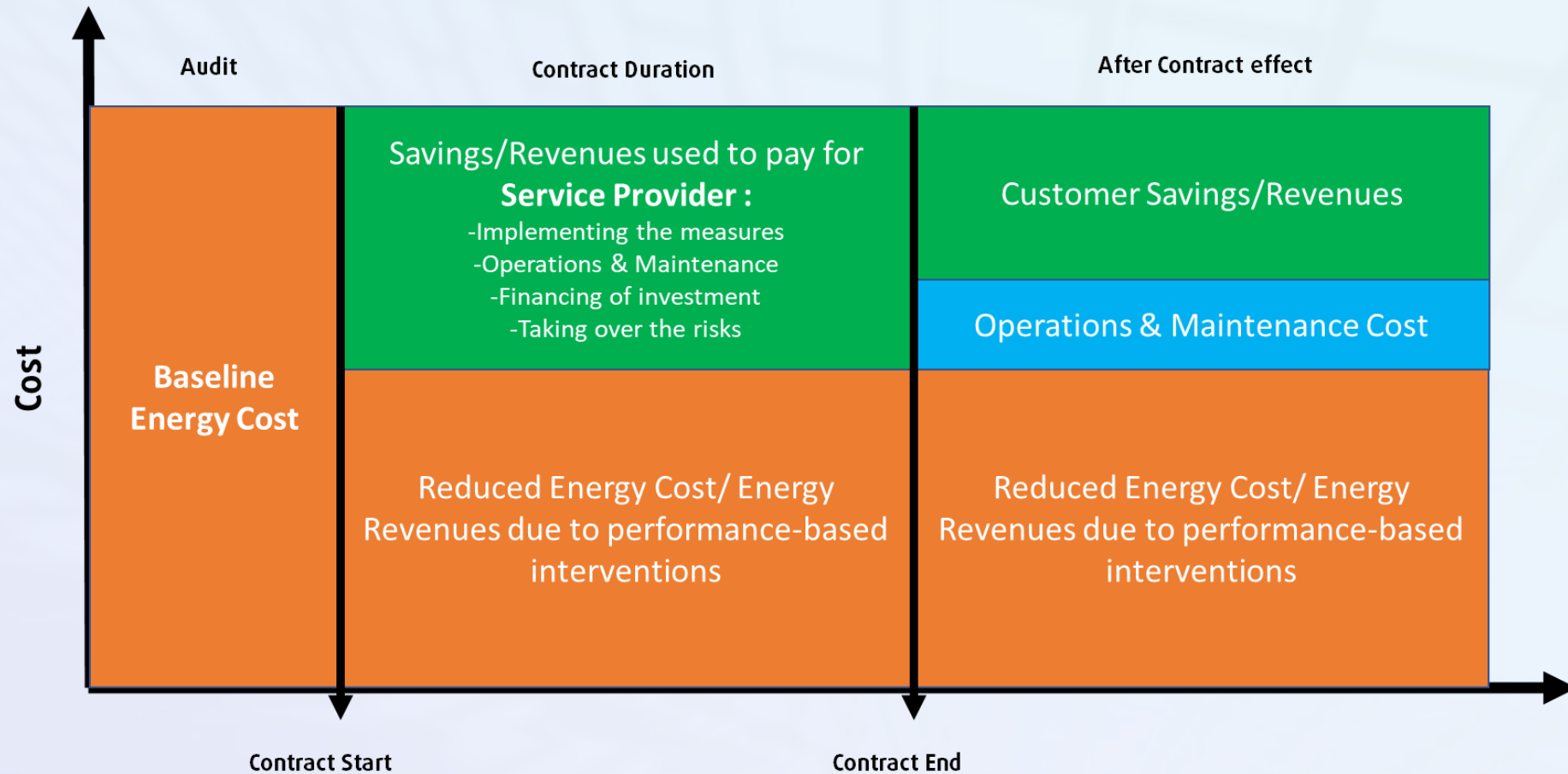


- AEPC business model for additional cost & CO₂ savings
- The role of ESCOs as flexibility aggregators
- The integration of active control software for global building flexibility optimization into existing BEMS/EMS systems

SENSEI P4P business model



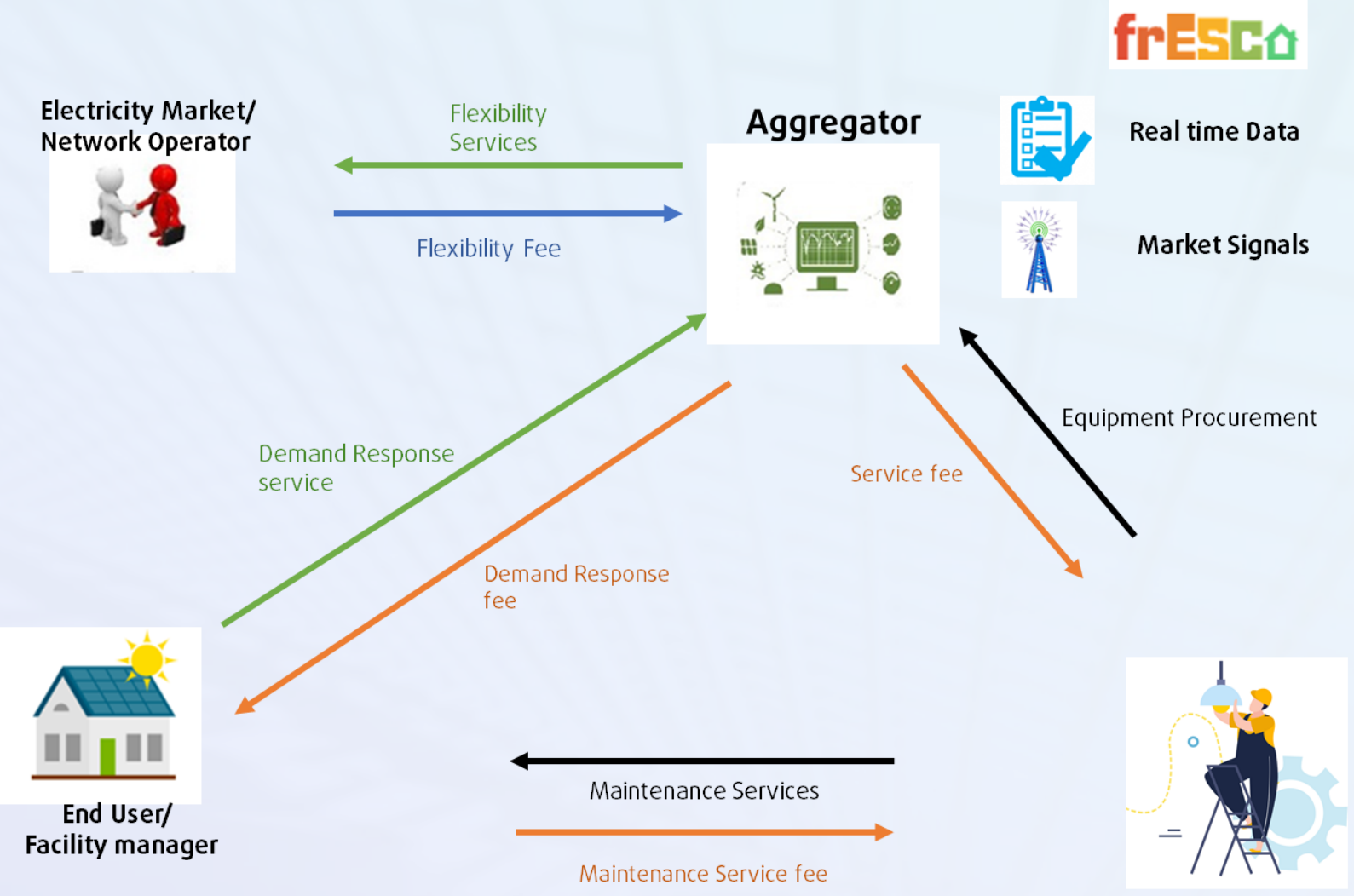
Pay-Back-Period



frESCO Proposition for ESCOs



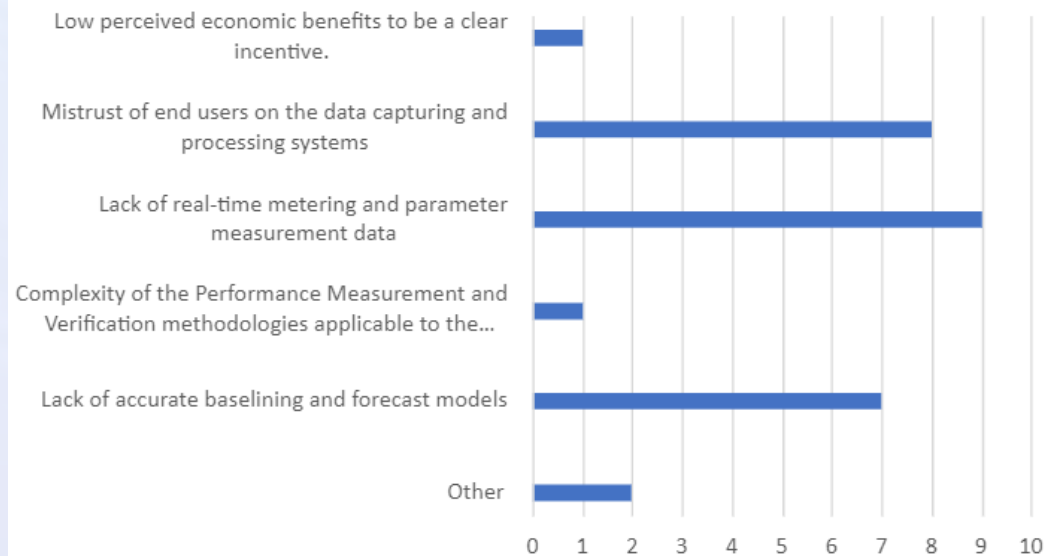
frESCO Proposition for Aggregators



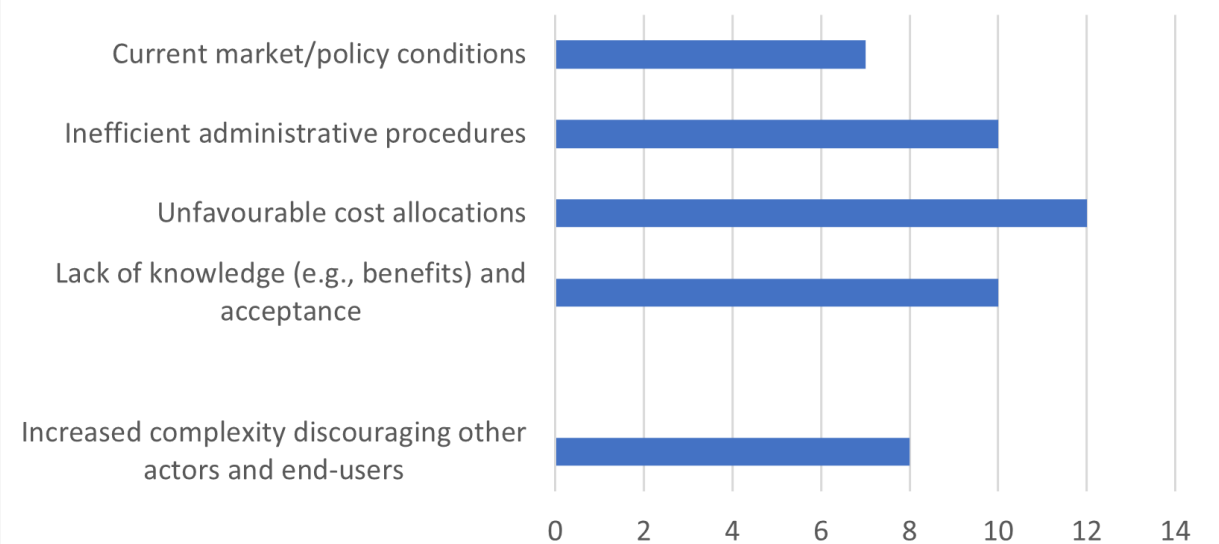
Risks & Opportunities

- Results from the survey:

What are, in your opinion, the main barriers for ESCOs to deploy full Pay-for-Performance contracts in the residential sector?



What would be the main barriers/ risks when aggregating energy upgrade projects?



4. Risks & Opportunities



- Digital infrastructure/ technological developments improve the viability of the solutions.
- Large opportunity to reduce energy consumption and provide network services.
 - Risk in Regulatory /market fragmentation and non standardized, not compatible infrastructure.



- The market is too reassured with deemed savings and the switch to metered savings is not a priority at EU level
- Little incentive in the EU so far because grid capacity limits have not been reached yet
 - The current energy crisis is showing that renewables are not a silver bullet and decarbonizing the evening peak hours will be a real challenge



- Advanced M&V to cater for dynamic pricing
 - Market uptake driven by commercial opportunities (chicken & egg situation)
 - Role of AEPC project facilitators and project aggregators, besides ESCOs
 - Push for deep renovation might limit support to AEPC projects.

Smart buildings and smart grids



Q&A session

- Speakers' contacts:



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