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LCA OF ENERGY COMMUNITIES

A STRATEGIC TOOL FOR BUSINESS MODELS

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Local Energy Systems: the opportunities arising will increase significantly in the next 5 years

Take a deep dive understanding the different business models

Understand the different value streams for Local Energy Systems: flexibility, EVs

Exploit better your market position: our databases help you monitor the EU competitive space

Rita Desmyter
Business Development / Project manager



Rita supports the development and commercialisation of Delta-EE's research services and consulting offerings.

Challenges and distractions

Overcoming the hype

There is significant interest in blockchain from a wide range of stakeholders, but an equally significant gap between the hype and market reality.

Blockchain is still in an early stage of development and faces significant challenges before achieving the necessary scale for commercial application.

- There is a long way between proof of concept pilot projects and delivering a commercially viable package
- Most blockchain offerings are too immature for large-scale production and in some cases, solution providers who have used blockchain in pilot projects have rejected alternative solutions when they move to commercialisation.
- Furthermore, the blockchain market is diverse and fragmented. Even organisations which seek to encourage collaboration and partnerships have widely differing objectives and platforms.
- At the early stage of development, interoperability between different blockchain platforms thus presents a challenge.

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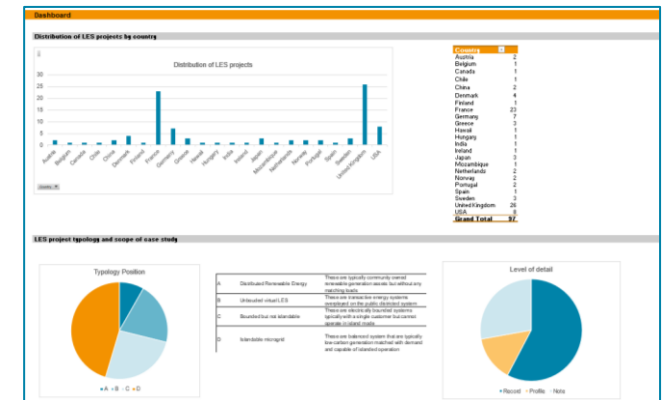
BLOCKCHAIN FOR LOCAL ENERGY SYSTEMS © Delta Energy & Environment Ltd 2020 21

Case Studies

A library illustrating the variety of business models across Europe

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A variety of business models across all segments; collective self-consumption (CSC) is the most innovative model

Energy communities are taking a large share of the ownership of projects

Trends and illustration of Local Energy Systems in France

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Third party engagement with energy communities

Contents

Value 'stream' from the community perspective.

Different values are achieved depending on the business model of the energy community

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LES PROJECT	Location	Energy	Ownership	Regulation	Year	Capacity	Power	Energy	Storage	Flexibility	EVs	Other	Notes
Australia	Queensland	Solar	Local	Yes	2017	100	100	0	0	0	0	0	First 100% renewable energy community in Australia
Belgium	Antwerp	Solar	Local	Yes	2018	100	100	0	0	0	0	100% renewable energy community	
Denmark	Denmark	Solar	Local	Yes	2017	100	100	0	0	0	0	100% renewable energy community	
Germany	Germany	Solar	Local	Yes	2017	100	100	0	0	0	0	100% renewable energy community	
Italy	Italy	Solar	Local	Yes	2017	100	100	0	0	0	0	100% renewable energy community	
Spain	Spain	Solar	Local	Yes	2017	100	100	0	0	0	0	100% renewable energy community	
United Kingdom	United Kingdom	Solar	Local	Yes	2017	100	100	0	0	0	0	100% renewable energy community	

About Delta-EE

Our Research

How it works

Delta-EE enables organisations to develop the best strategies, business models and customer propositions for the energy transition. We do this, depending on clients' needs, through our subscription research services and bespoke consultancy projects requested by clients.



Subscription Research Services

Our yearly subscription research services focus on a particular area of the new energy transition. They allow clients to fully understand the areas of new energy their business is focused on, and future market direction.

Whether you're a smart home provider looking for the next market to target or a network company needing to keep up to date with the developing flexibility market, we'll find the relevant services for you.

Ad hoc support from our team of energy experts is also included.



Consultancy

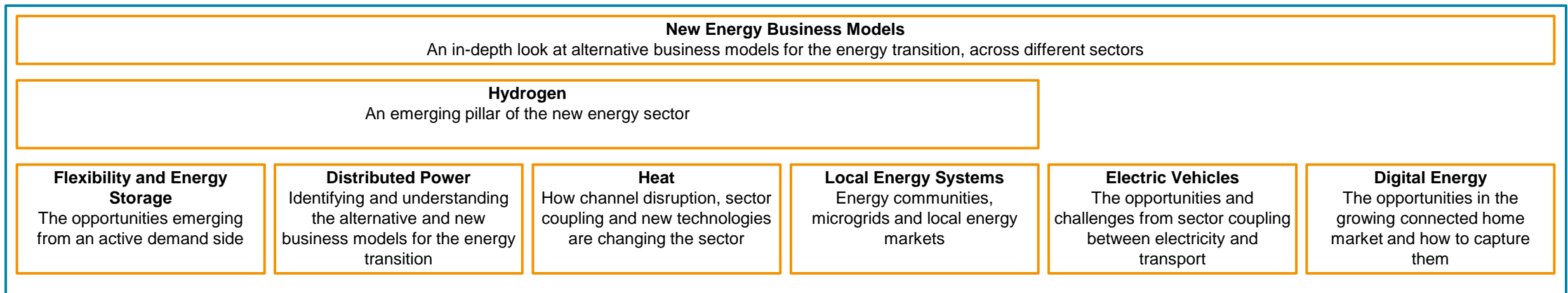
Delta-EE's consultancy team provides clients with bespoke confidential research and insight to answer the critical questions that are impacting their business.

Where subscription research services provide an overarching view of the energy transition, for more specific needs – and to take a deeper dive into the opportunities and challenges the energy transition creates for your business – our consultancy team can help.

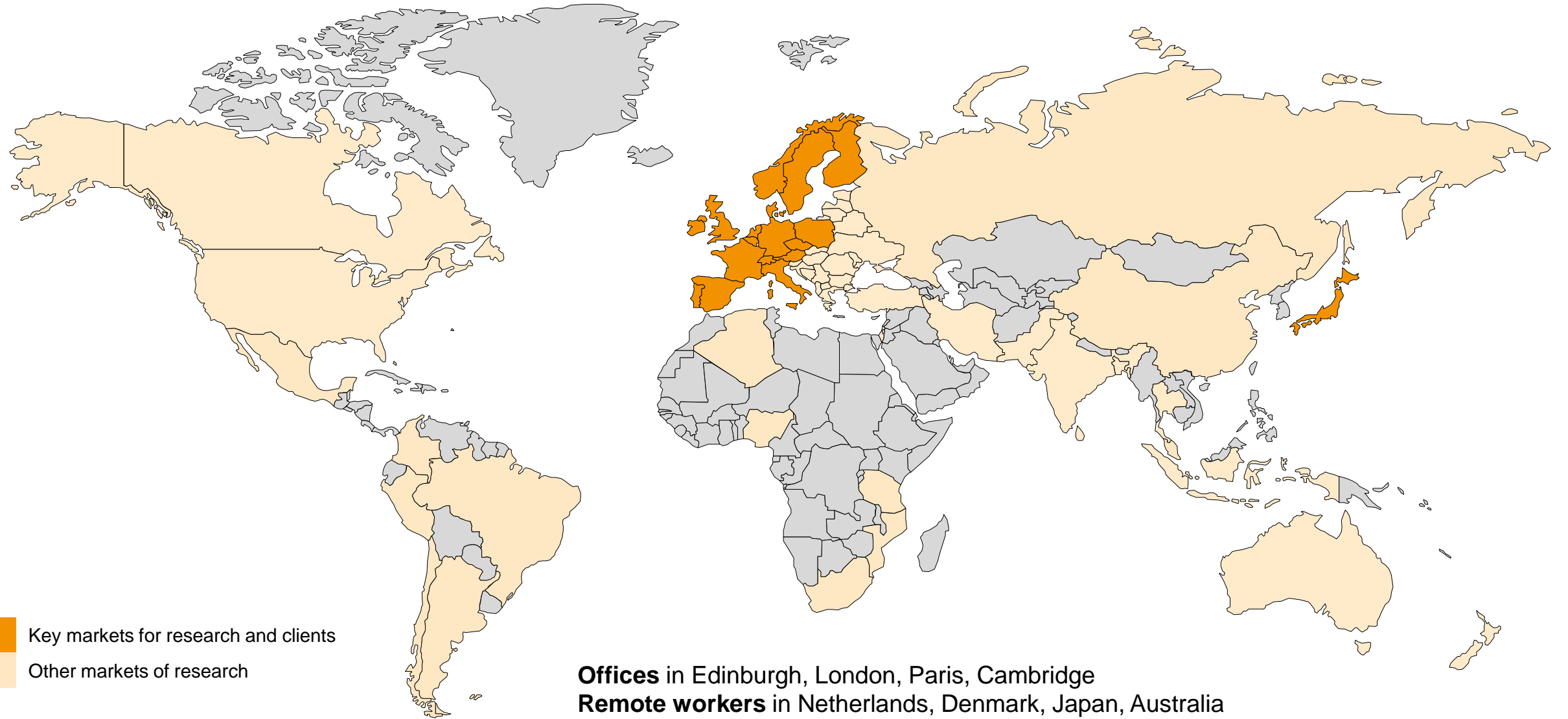
Delta-EE enables organisations to develop the best strategies, business models and customer propositions for the energy transition.

Our team of experts has a depth and breadth of knowledge across the new energy space, providing unparalleled research to clients around the world.

Our research covers a range of topics across the new energy space including:



Delta-EE's international presence and research



Agenda

- > **What business models are emerging?**
- > **Life-cycle analyses of Energy Communities**

What business models are emerging?

A combination of triggers and drivers can explain the scale of interest for energy communities

Triggers are intervening events, such as the two directives from the Clean European Package.

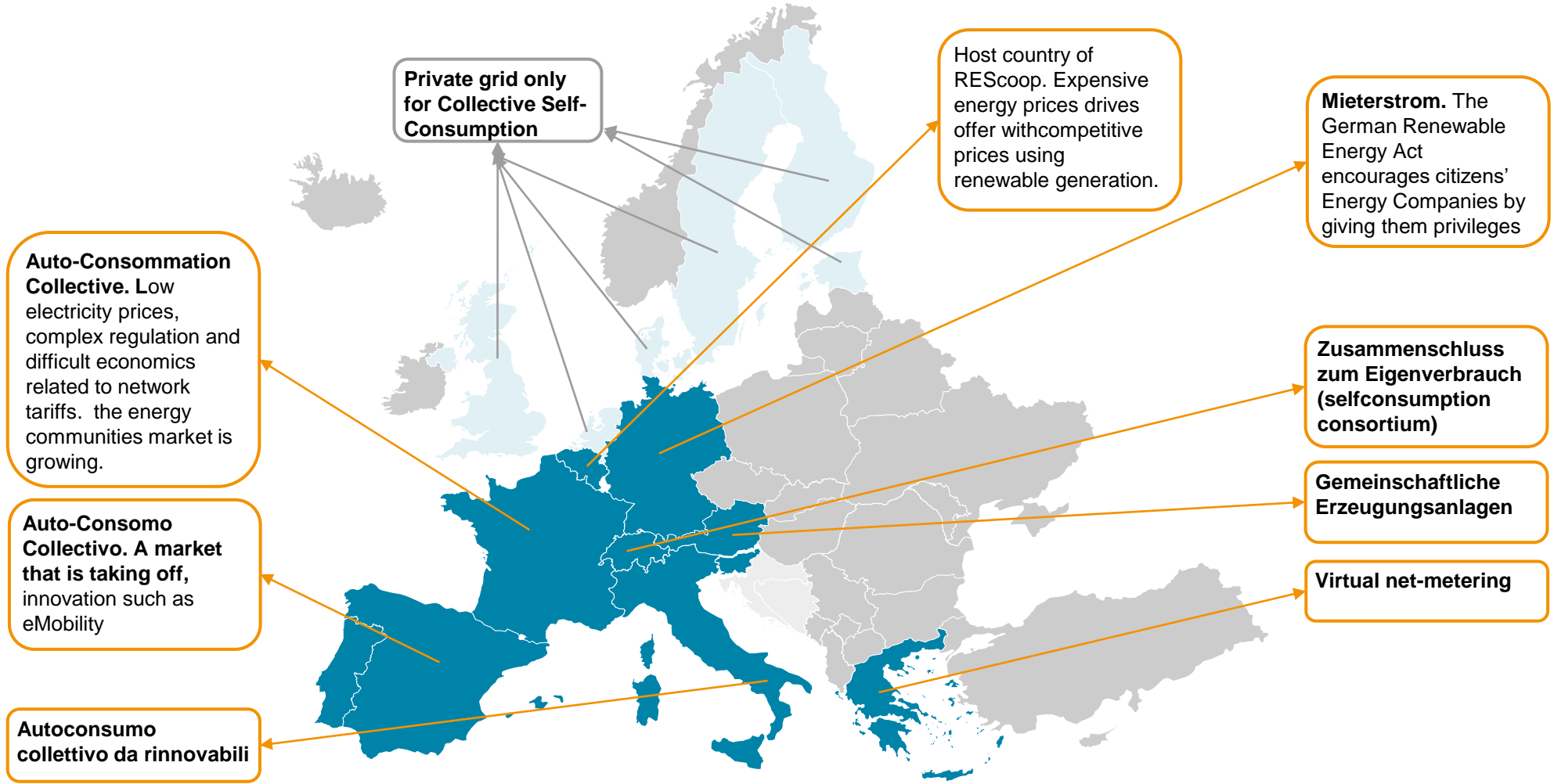


Drivers are long-time processes that change the environmental structure of an energy community

- Climate change emergency,
- Decentralised generation
- Development of flexibility markets,
- Subsidies phase-out,
- Development of technologies

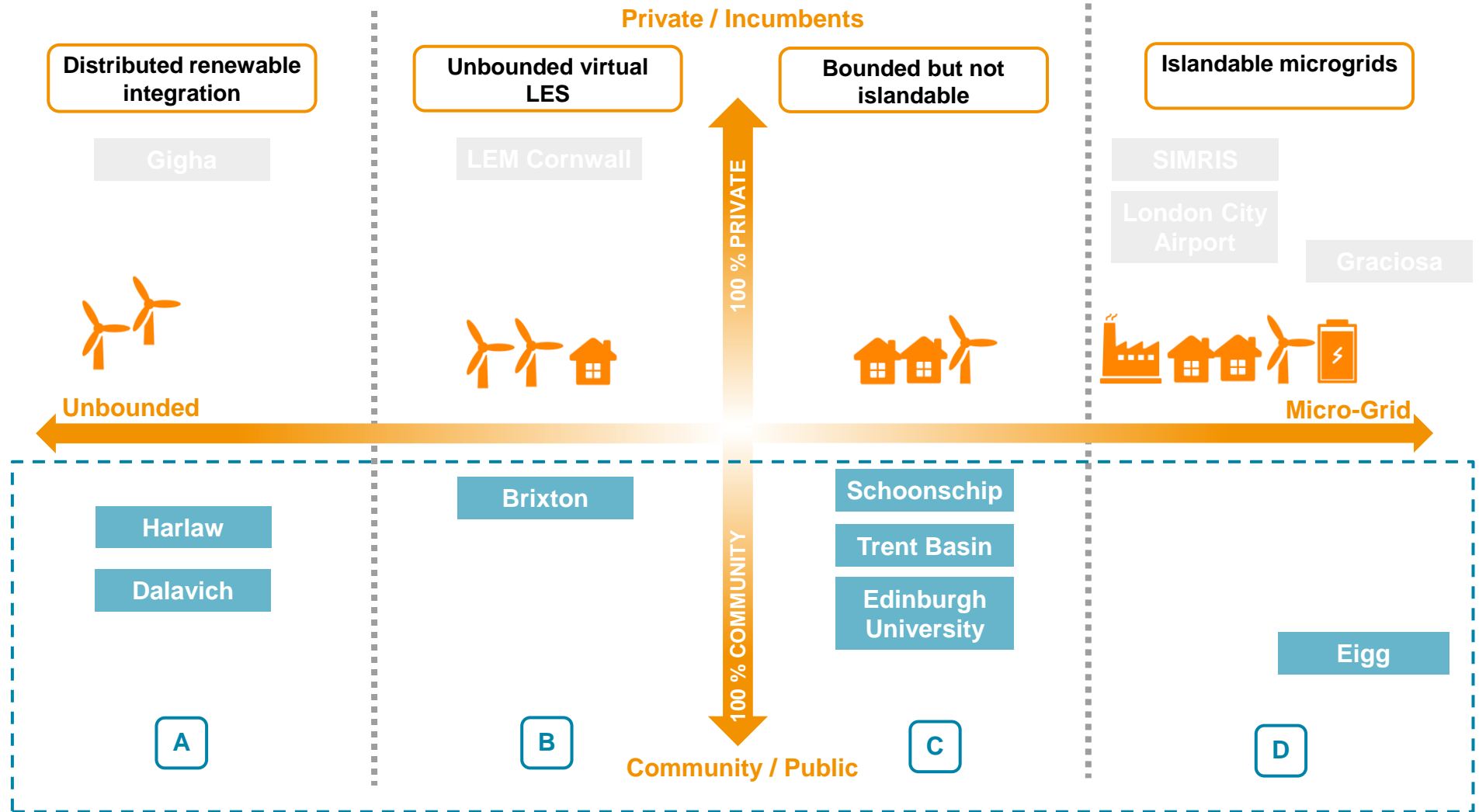
Development of energy communities across Europe is not homogeneous - Belgium is a market leader

Since the removal of government backed feed-in-tariffs the regional difference in renewable generation opportunities and political opportunity/barr iers has increased



■ Regulatory framework in place
 ■ Limited CSC provision

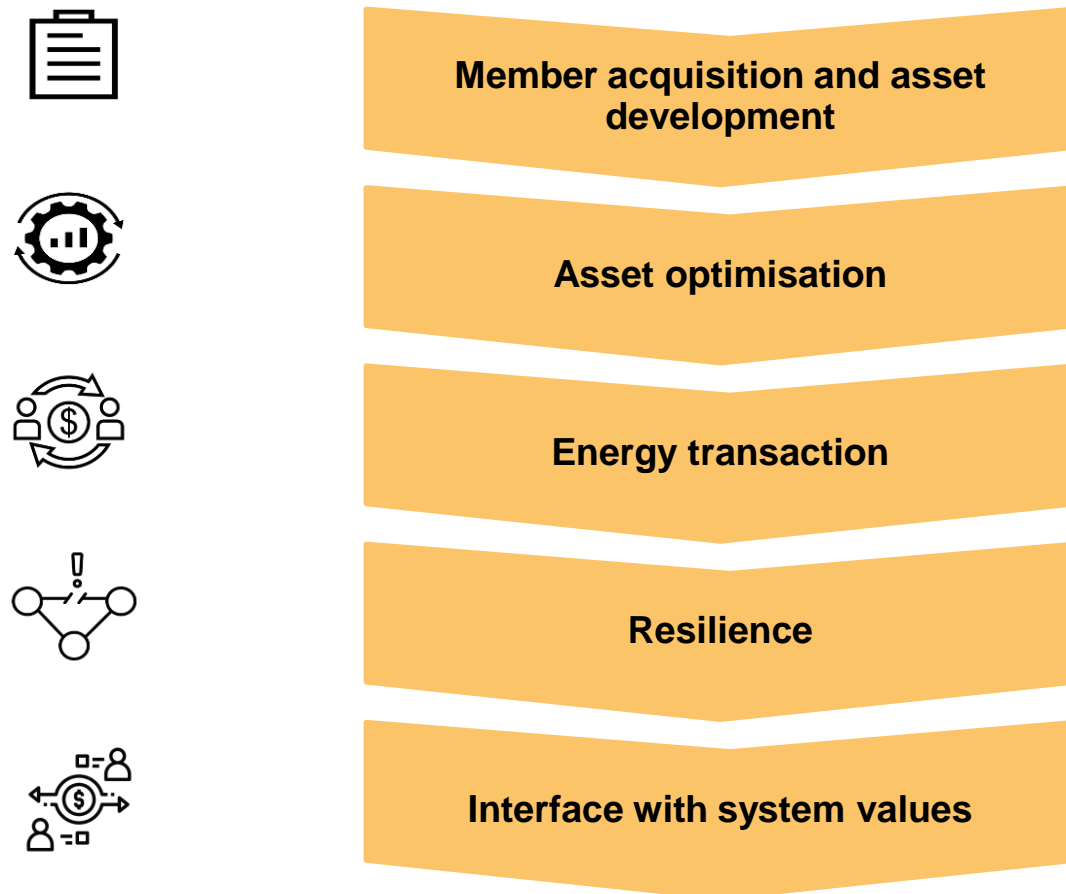
Energy communities in the Local Energy System Typology



We are seeing four energy community business models

1. **Generation/export**
 2. **Co-operative energy supplier**
 3. **Collective self-consumption**
 4. **Virtual allocation (P2P)**
- **All energy communities strive to interface with value streams**
 - **Virtual allocation and bounded systems also seek optimisation and self/collective consumption**

Value 'stream' from the community perspective.



Energy communities bring a range of benefits to third parties:

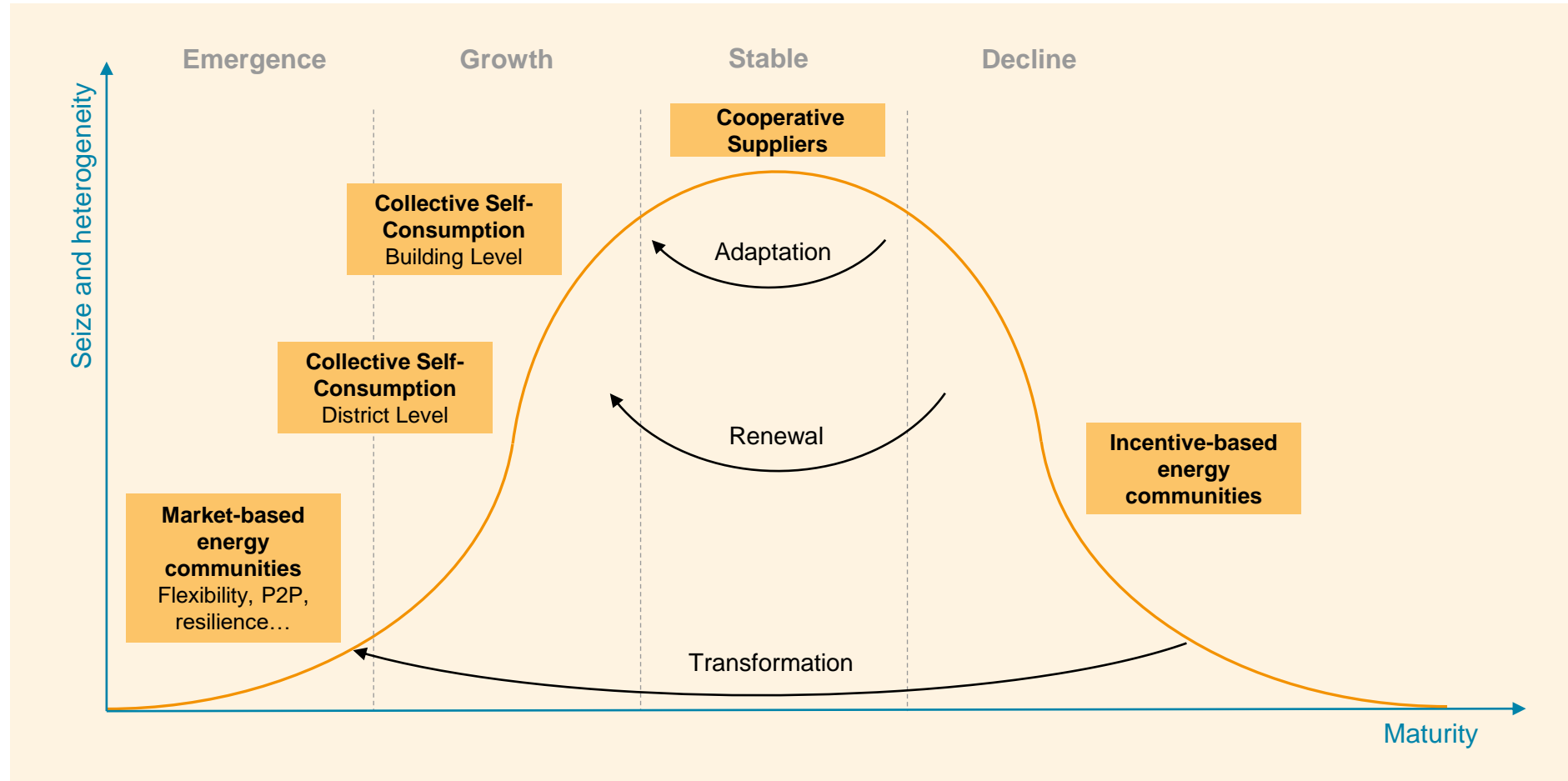
- Increased flexibility
- Membership fees
- Energy savings

Value generation within energy communities and long term viability differ depending on the business model

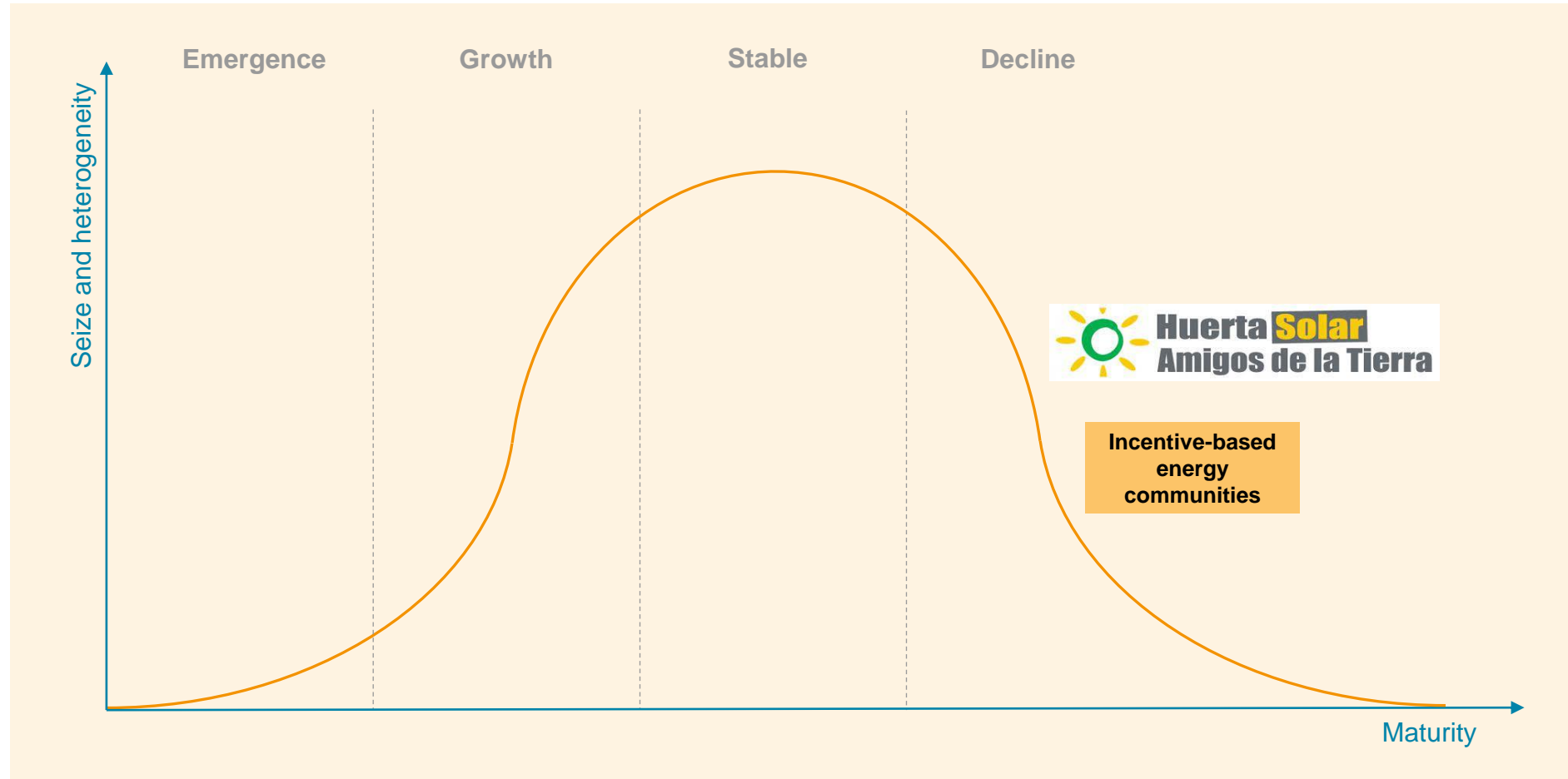
	Member acquisition and asset development	Asset optimisation	(Collective) self-consumption	Resilience	Interface with system values
Generation/ export					
Co-operative energy suppliers					
Bounded collective self-consumption					
Virtual allocation					

Life-cycle analyses of Energy Communities

The LCA of energy communities can be used as a strategic tool for business model

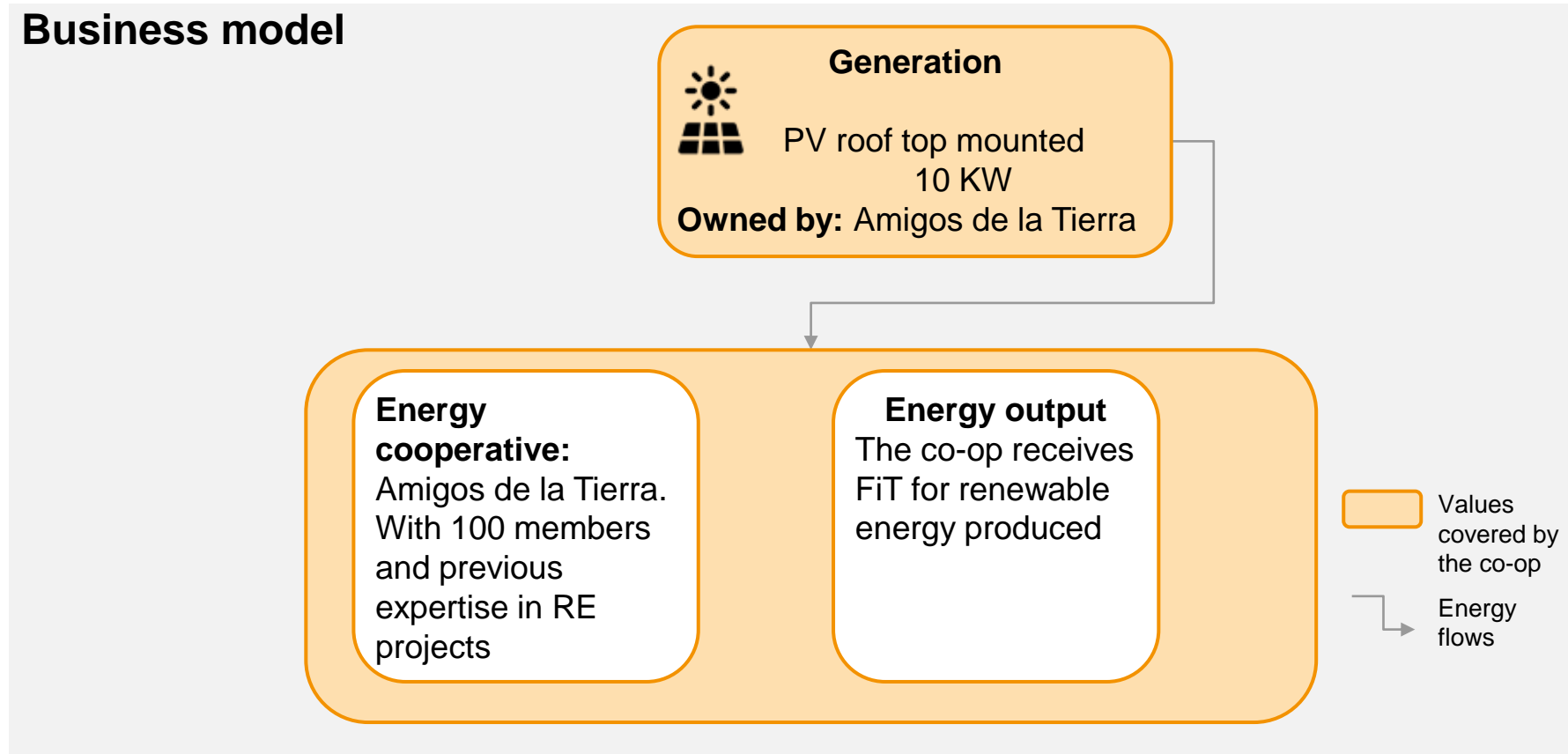


An example of incentive-based energy communities



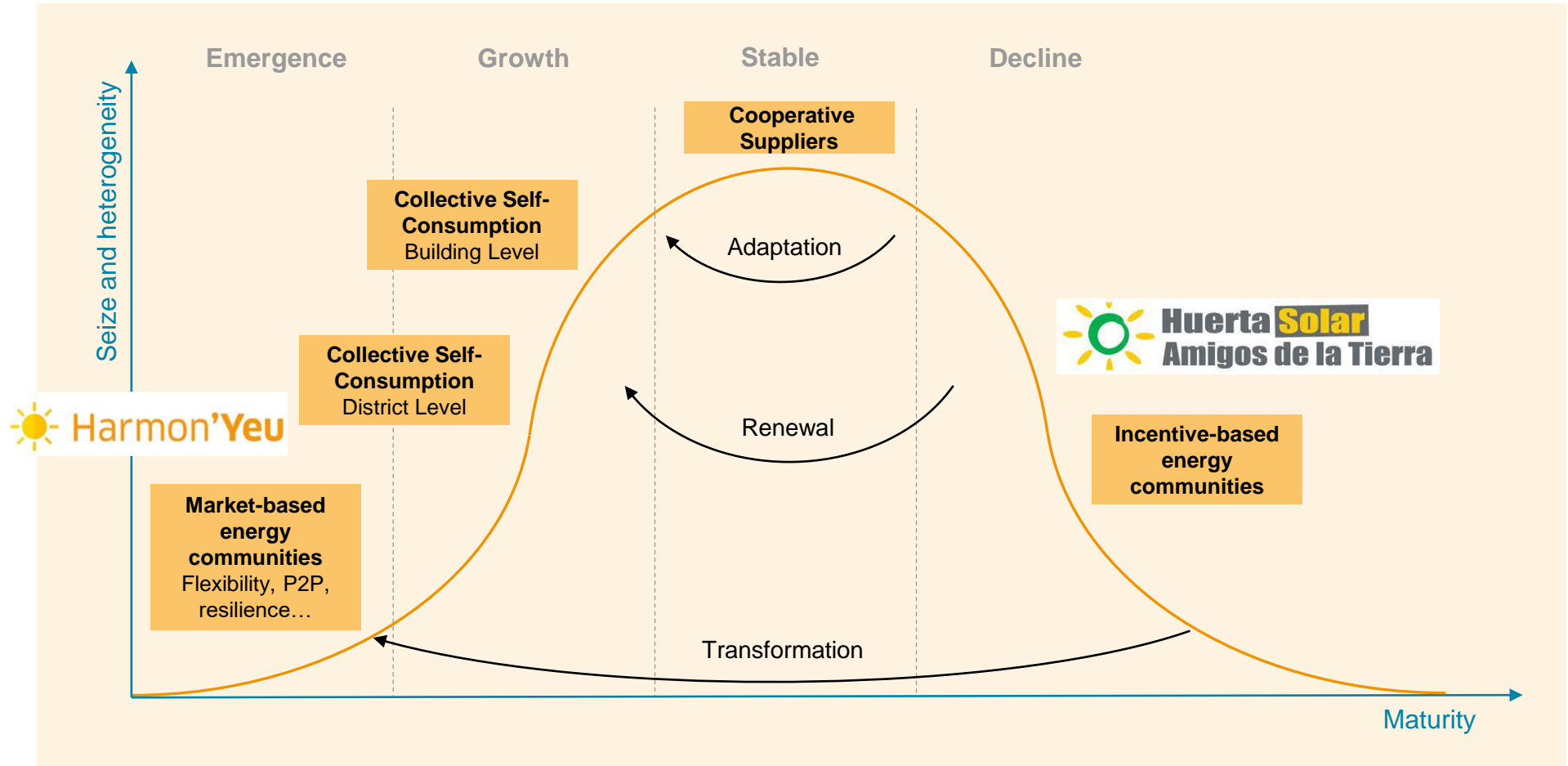
Huerta Solar by Amigos de la Tierra in Leganes is an energy community creating revenue through FiT

Energy cooperative investing in renewable energy assets to benefit the local community



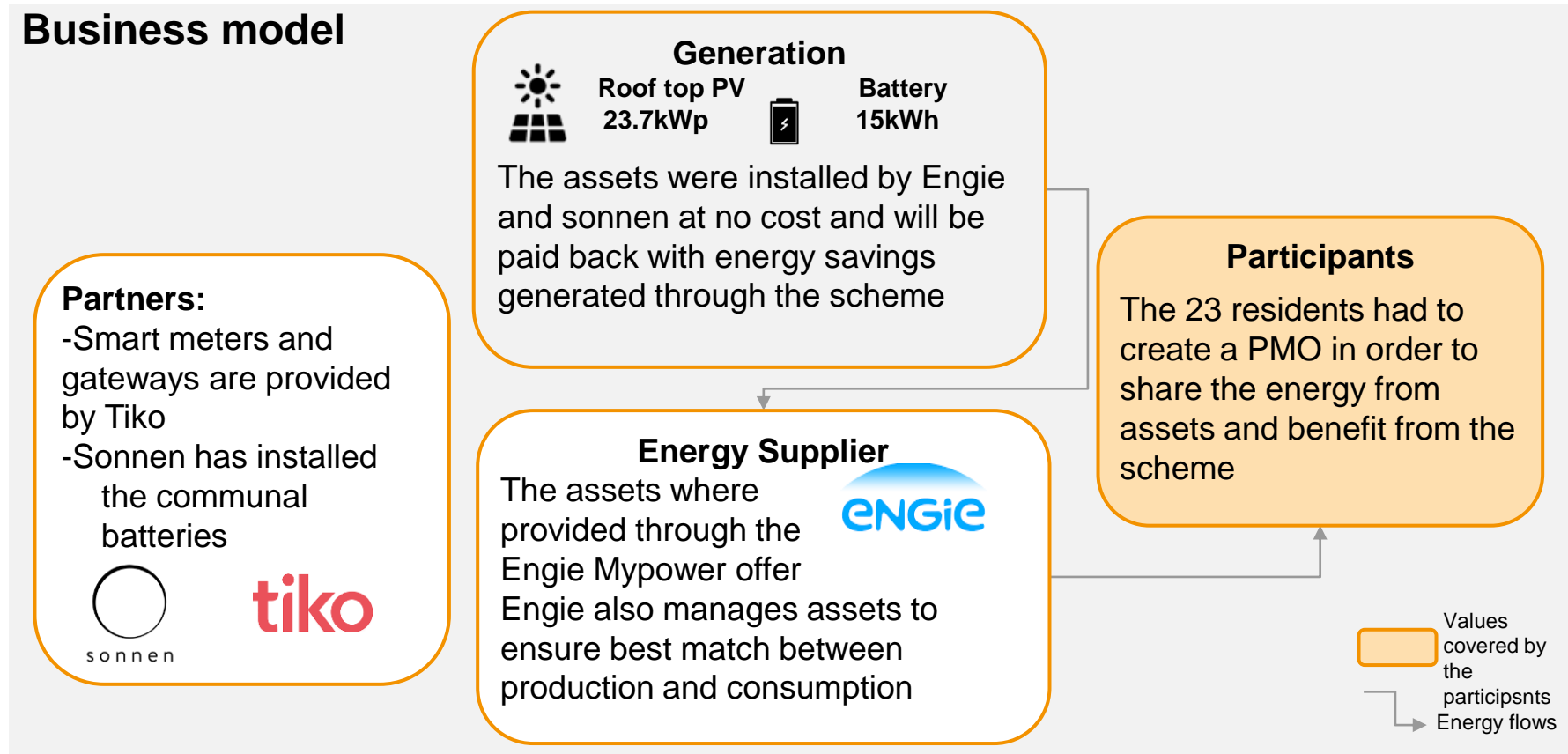
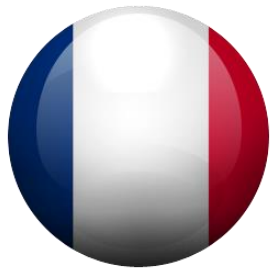
*FiT are now guaranteed for 30 years, but their value was reduced and depend the type of installation, energy wholesale price and cost of operations in small amount

Opportunity to adapt or renew



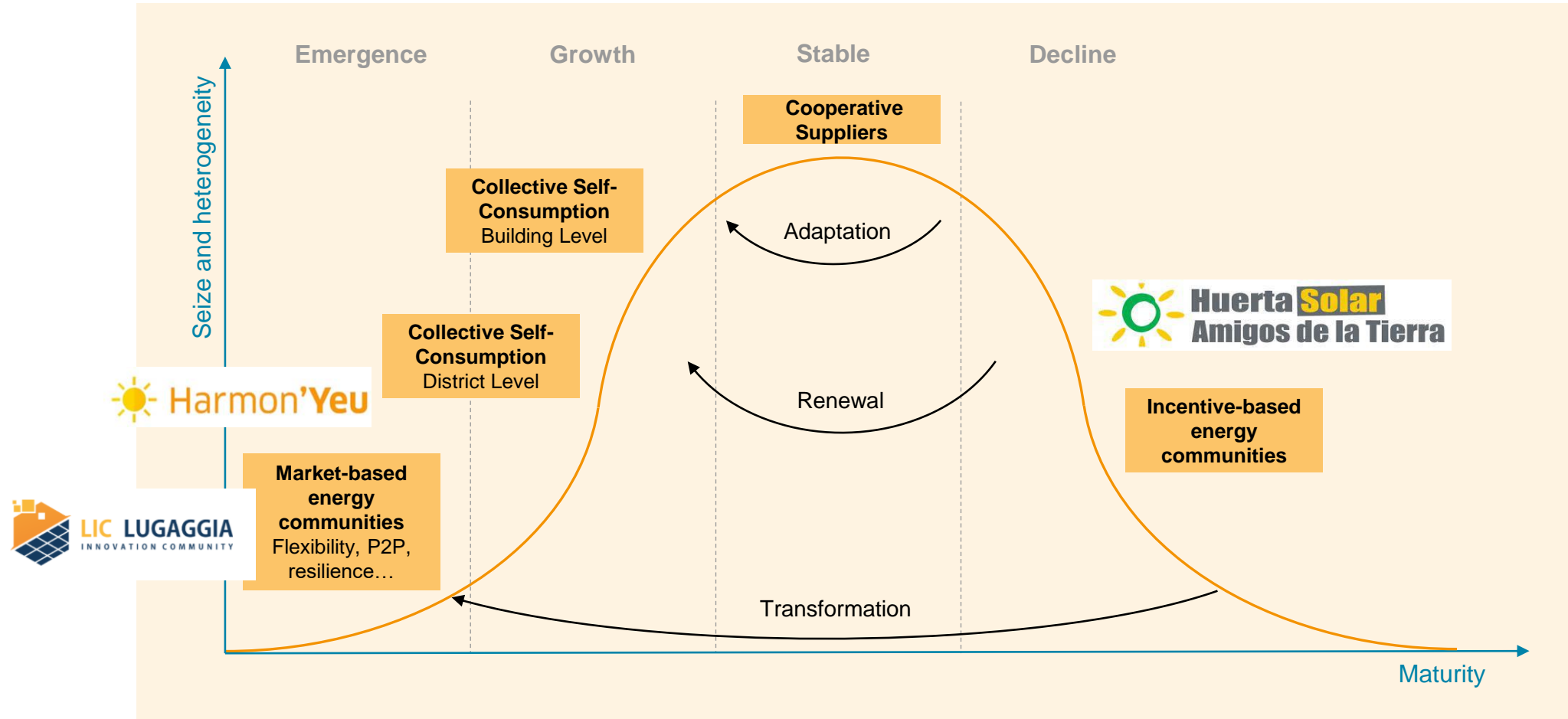
Harmon'yeu an innovative Collective Self-Consumption project

A collective self-consumption scheme run by incumbent energy supplier, with the collaboration of the local municipality.



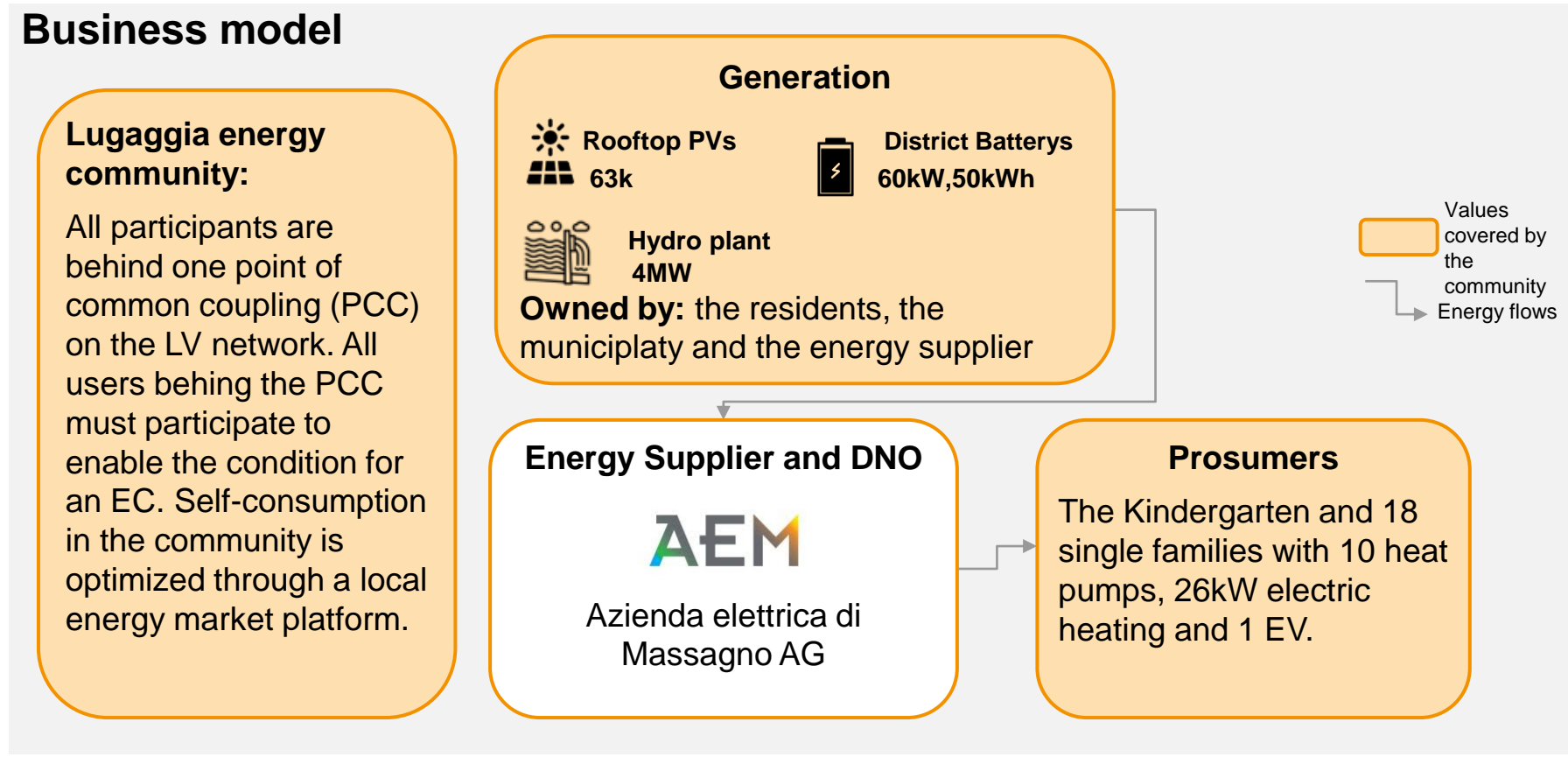
Values covered by the participants
 Energy flows

Opportunity to transform



The Lugaggia innovation community, a local energy market within an energy community

The local energy market optimizes the local consumption through price signals.



Thank you for your attention!

Any questions? Ask me!

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Energy communities and the role of suppliers

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