WILL ENERGY COMMUNITIES REPLACE CONVENTIONAL ENERGY SUPPLIERS?

WEBINAR – 20TH OCTOBER 2020

CONTACT:
Rita Desmyter – rita.desmyter@delta-ee.com
Delta-EE - Local Energy Systems Research
Will energy communities replace conventional energy suppliers?

© Delta Energy & Environment Ltd 2020
Will energy communities replace conventional energy suppliers?
Agenda

- How enthusiastic are consumers about investing in energy communities?
- What business models are emerging?
- How will this impact the existing energy supply industry?
How enthusiastic are consumers about investing in energy communities?
How do Local Energy Systems business models appeal compared to other customer propositions?

Energy communities and peer to peer trading are as appealing as having a PPA agreement or HEM service. They are more interesting than having heat as a service.

LEŠ customer research at DELTA-EE

online/mobile quantitative survey amongst 1021 adults, filtered on energy decision makers in the home across 5 European countries: Italy, Germany, France, Netherlands, Great Britain. Fieldwork was conducted in the time frame 2019-2020.
Energy communities will grow differently across Europe

- Overall UK customers are less engaged than other markets but legislation are being developed independently from the EU.
- More respondents are interested in taking part in EAS than just having a simple RE tariff.
- The interest in EAS and P2P is high even though the system charging regime is still not favourable.
- German respondents show willingness to pay more for RE produced in their vicinities.
- Over 35% of customers find EAS and P2P “very appealing”.

Customer driven – high appeal could drive uptake
Regulations driven – regularity push needed
Early adoption – driven by a few highly motivated innovators
What business models are emerging?
Two European directives for collective renewable energy prosumers in the Clean Energy Package

Citizen Energy Communities (CEC)  
**EMD: Electricity Market Directive**
- Participation of members that are in the proximity of the renewable energy project
- Shareholders or members are natural persons, SMEs or local authority
- Their primary purpose is to provide environmental, economic or social benefits rather than financial profits.
- Must include renewable generation

Renewable Energy Communities (REC)  
**RED II: Renewable Energy Directive**
- Open to natural person, local authorities that do not have to be in proximity
- May include renewable generation and/or energy services that benefit members or shareholders.
Policy dictates regulation, which determines business models types

The Collective Self-Consumption (CSC) market is developing in Europe and lessons from pilots are beginning to reflect.

- Is the regulator allowing Collective Self-Consumption in the country?

- What is the perimeter?

- What is the maximum cumulated power?

- What are the possibilities of governance structure, organisation, and assets ownership?

- How is the energy produced allocated to the participants of the projects?

- What value streams are accessible to sell electricity excess or flexibility?
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 generation within energy communities and long term viability differ depending on the business model.

<table>
<thead>
<tr>
<th></th>
<th>Member acquisition and asset development</th>
<th>Asset optimisation</th>
<th>(Collective) self-consumption</th>
<th>Resilience</th>
<th>Interface with system values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation/ export</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-operative energy suppliers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bounded collective self-consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual allocation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Development of energy communities across Europe is not universal with Belgium and the Netherlands leading.

Since the removal of government backed feed-in-tariffs the regional difference in renewable generation opportunities and political opportunity/barriers has increased.
National frameworks are established in some countries
Other member states still lack elements of EU legislation.
Collective Self-Consumption is a business model
It is one way of interpreting the intention of the CEP directives

Collective Self-Consumption (CSC) is a local energy model which shares the output of pooled generation assets amongst a group of consumers with the aim of optimising self-consumption within the community.

CSC is a model pooling generation which can be shared amongst consumers.

It has a legal perimeter:

- A distance
- Under a substation
- Multi-family building
- At the neighbourhood level

2 kms
The Mieterstrom model allows tenants to share renewable generation in their own apartment block

- The Mieterstrom business model is intended to enable tenants in apartment blocks to benefit from electricity produced from generation on their premises.

- The Mieterstrom supplier avoids grid charges and levy but still needs to pay the EEG surcharge.
The collective self-consumption model in France
A model involving many stakeholders

There is no legal obligation to buy excess electricity under a CSC scheme from the DSO (Enedis) or EDF. The PMO should find a buyer, otherwise, surplus is exported to the distribution network for free.

The DSO allocates produced electricity to each participant within 30 min intervals, applying the electricity consumption index given by the PMO.

*PMO: Personne Morale Organisatrice, can have any legal form (association, business, etc). The CSC model applies to consumers and producers within the same LV network and within 2kms of one another, also subject to a 3MW maximum capacity.

© Delta Energy & Environment Ltd 2020
The virtual net-metering system is a form of collective RE prosumers with a very wide perimeter

1. Greece set a virtual net-metering (VNM) scheme as a solution for energy-poverty.

2. The regulator introduced energy community schemes as an improvement from the VNM.

*Prefecture is a subdivision within a province. It is analogous to a county or borough.*
Brooklyn Microgrid
Blockchain-enabled Peer to Peer trading over public network

The world’s first ever blockchain enabled energy trading scheme

The pilot scheme involved only five households

Currently being extended, but the trading still takes place over the public network.

Will energy communities replace conventional energy suppliers?
How will this impact the existing energy supply industry?
Third party involvement is becoming critical in enabling energy communities to create long term value

The removal of feed-in-tariffs has been a catalyst for value driven energy communities

The evolution of energy communities

- Originate in Northern Europe
- Traditionally aided by subsidies to achieve economic viability
- Need to engage in more commercial and market driven forms of value creation, such as the collective self-consumption model.

Motivation towards third party engagement

- Expertise
- Financing
- Assets
- Technical skills
Levels of engagement with third parties is impacted by the complexity of the energy community

For both incumbents and communities there is an increasing need for third party support as typology includes increasing levels of complexity (left to right).

As the component of energy communities increase in complexity so does their requirement for technical, fiscal and management support from third parties. Similarly as energy communities become more complex there are more opportunity for third parties to engage and increase the energy communities value proposition.
Not every aspect of the value chain is obtained by each third party

- **Core focus**
- **Widely used**
- **Few examples**
- **Not present**

**DSO**
- Member acquisition and asset development
- Deep engagement with system values

**Energy suppliers**
- Member acquisition and asset development
- Energy Transaction

**Technology Providers***
- Member acquisition and asset development
- Resilience

**Enabler**
- Asset Optimisation
- Energy Transaction
- Resilience
- Interface with system values

*includes data, platforms and aggregators
Question: in 5 years time, at which stage of engagement so you think the majority of suppliers in Europe will be?

1. Residual demand
   Suppliers fulfil balancing supply requirements to energy communities.

2. Contract to buy excess generation
   Suppliers contract with the energy community to purchase excess generation.

3. Full package
   Suppliers work with energy communities closely to aid in developing, planning, contracting and interfacing with value streams.
**Question:** in 5 years time, at which stage of engagement do you think the majority of suppliers in Europe will be?

<table>
<thead>
<tr>
<th>Stage of Engagement</th>
<th>Percentage</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual demand</td>
<td>25.6%</td>
<td>32</td>
</tr>
<tr>
<td>Contract to buy excess generation</td>
<td>39.2%</td>
<td>49</td>
</tr>
<tr>
<td>Full package</td>
<td>35.2%</td>
<td>44</td>
</tr>
</tbody>
</table>
Thank you for your attention!
Any questions? Ask us!

Will energy communities replace conventional energy suppliers?

Webinar
Tue, Oct 20, 11:00 AM-12:00 PM CEST

Rita.Desmyter@delta-ee.com