Smart Energy Systems ERA-Net | Spotlight

WG CaCI 2021

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ERA-Net SES has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements no. 646039, 775970 and 883973.

ERA-Net SES Projects´ Perspectives on

(Renewable) Energy Communities (RECs) as a means to alleviating energy poverty

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Building on „Energy Communities under the Clean Energy Package" by REScoop and ClientEarth

RESCOOP.EU ClientEarth

Energy Communities under the Clean Energy Package

Transposition Guidance

(Renewable) Energy Communities (RECs) as a means to alleviating energy poverty

"RECs can play a significant role in using renewable energy sources and other clean technologies to help alleviate energy poverty and improve living conditions for low-income and vulnerable households. To date, some RECs have adopted a specific aim to alleviate energy poverty, usually through a combination of renewables generation and interventions that address energy efficiency. The Recitals of the RED II confirm the importance of participation of vulnerable and low-income households in RECs. They recognize that empowering collective forms of self-consumption (including through RECs) help fight energy poverty (through reduced consumption and lower supply tariffs)." *(Energy Communities under the Clean Energy Package, pages 47-48)*

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CLUE

- found that perceived benefits of RECs are rather idealistic than monetary, i.e. income is not the main driver for consumers' involvement in RECs
- suggests trusted leaders on the regional level as multipliers for establishing REC

Further resources
www.project-clue.eu

SONDER

- agrees that RECs need to be open to any participant
- stresses that, nevertheless, participation has to remain voluntary
- transparency as well as an atmosphere of openness – from the very start of the different processes – are key to gain trust

Further resources
Technical Framework on LEC
www.project-sonder.eu

Match-IT & TOP-UP

- agree that RECs should be inclusive
- stress that RECs should empower consumers to contribute to more sustainable energy systems
- have identified various barriers for the effective inclusion in RECs

Further resources
www.matchit.info
www.top-up.info

Joint Conclusions

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There is a wide agreement that RECs need to be inclusive in order to ensure that a diverse community benefits from the financial and social advantages of RECs and is empowered to support the sustainable transition. However, voluntary participation is crucial. Considering potential motivations and obstacles to the participation in RECs, empirical research reveals citizens' and consumers' different perceptions and perspectives on the potential benefits of RECs as well as a complex set of factors which influence their readiness to engage in RECs.

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Interreg North-West Europe RegEnergy

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ERA-Net SES
Projects´ Perspectives on

- Defining energy communities
- Defining energy sharing for (jointly acting) self-consumers

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Building on "Transposition Guidance for citizen energy policies" by PROSEU, Community Power Coalition, RNP, EREF and SCORE

PROSEU · COMMUNITY POWER · SCORE · EREF

Transposition Guidance
for citizen energy policies

Recommendations to strengthen prosumers and energy communities when transposing the Clean Energy Package (RED II, IEMD)

Objective: This paper aims to inform and facilitate the transposition and the implementation of the Renewable Energy Directive (RED II, 2018/2001) and the Internal Electricity Market Directive (IEMD, 2019/944) in combination with the Governance Regulation (GR, 2018/1999). It focuses specifically on the provisions regarding the newly established rights of citizens like self-consumption and energy communities. It provides recommendations to be applied when drafting national legislation and regulation; it addresses policy makers on EU and national level as well as civil society advocacy groups.

The transposition of the RED II and the IEMD into national laws will provide opportunities to define national policies that aim towards a "citizen and prosumer-centred" Energy Union and strengthen citizens' rights. Most important is, however, that the transposition needs to ensure that national legislations align with the Paris Agreement in its ambition. To that end, laws and regulations need to be rigorously implemented and enforced. For both, implementation and enforcement, citizen engagement will be a crucial over the next years.

Transposition Timeline: Ideally, civil society representatives are already involved in the drafting process. We recommend a two-stage consultation process on national level so that stakeholders are involved early on when all options are still available (1st consultation) and then when a more elaborate draft is available (2nd consultation). It is proposed to have parallel stakeholder consultations in September/ October 2020 for both directives as decisions on the IEMD transposition is expected to directly impact the RED II transposition – especially since provisions on Citizen Energy Communities (defined in the IEMD) are linked to the definition of Renewable Energy Communities (defined in the RED II), see Figure below.

Recommended transposition timelines for IEMD and RED II with two-stage consultation

These timelines are proposed according to the principles of the Aarhus convention and Regulation 1367/2006.

The following table provides guiding answers to typical questions arising during the transposition process. It is important to get clarification early-on in the process, i.e. by summer 2020.

Defining energy communities

"Ideally, CECs and RECs should be combined into one meta-type of Energy Community to avoid confusion and explain it better. For instance, any REC that deals with electricity would automatically also be a CEC. In case the two concepts are kept, their definitions and relation should be coherent. Control by citizens should be secure and mandatory. Engagement of CECs in fossil fuel related or otherwise unsustainable activities should not be allowed." *(Transposition Guidance for citizen energy policies, page 2)*

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Perspective

The perspective of the SONDER project supports the statement that it remains a challenge to establish concise, easily understandable definitions for emerging concepts (in this case, CECs and RECs) which remain viable for emerging and upcoming variants thereof:

- Collective self-consumption can be facilitated by less complex arrangements than CEC or REC and their further benefits do not manifest short term.
- Compared to many exemplary local energy communities developed and established prior the new EU directive, one of the most important and distinguishing aspects of CEC and REC is that they enable the involvement of energy customers that cannot directly contribute to the energy transition, either because they cannot afford the investment or because their environment hinders them.

Further resources

Technical Framework on LEC
www.project-sonder.eu

SONDER

About

SONDER deals in detail with the definition for Energy Communities, in particular for CECs and RECs.

Defining energy sharing for (jointly acting) self-consumers

"Energy sharing and self-consumption should be allowed beyond a building or premise, i.e. via the distribution grid, ideally over distances of several kilometres […]. It should be possible to organise energy sharing as jointly acting self-consumers but not exclusively: Other options should be possible, like for instance peer-to-peer arrangements where a prosumer can sell excess energy to a neighbour or other local citizen(s)."*(Transposition Guidance for citizen energy policies, page 4)*

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RegEnergy

Interreg North-West Europe RegEnergy

Considers peer-to-peer sharing mechanisms as the potential incubator to facilitate prosumers to engage with the market and integrate renewable energy technologies locally to suit their communities aggregated demand.

Further resources: www.nweurope.eu/projects/regenergy

SONDER

SONDER

Argues that sustainable tariff design should cover any situation imaginable; even a rather unrealistic reversion of the tariff accumulation in case big power plants could all be replaced by DER one day. Any energy purchased from or sold to a wholesale energy trader shall be charged the full grid tariffs because these commonly use all grid levels to achieve their energy balancing.

Further resources: www.project-sonder.eu

Joint Conclusions

Smart Energy Systems ERA-Net

- Limiting collective self-consumption to concepts such as CEC and REC might hinder the development of alternative less complex settings for self-consumption.
- Increased self-consumption does not lead to increased share of renewables per se.
- Peer-to-peer sharing mechanisms can facilitate prosumers to engage with the market and integrate renewable energy technologies locally.
- Cooperative peer-to-peer energy sharing might be difficult within CECs which, as a market construct, foster selling instead. In contrast to REC, though, they are a good fit for jointly owned assets.

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EPC4SES Digital Building Twins

EPC4SES
EVA
MatchIT & TOP-UP

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ERA-Net SES
Projects´ Perspectives on

The need for a data economy based on open platforms

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Building on „Digitalization of the electricity system and customer participation" by ETIP SNET Working Group 4

ETIP SNET

DIGITALIZATION OF THE ELECTRICITY SYSTEM AND CUSTOMER PARTICIPATION

Technical Position Paper WG4

The need for a data economy based on open platforms

"Open platforms offer rapid development solutions in a cloud environment. A proper combination of open source and proprietary solutions creates a dynamic eco-system in which concepts such as open API reported above can support rapid development and innovation in service provision." *(Digitalization of the electricity system and customer participation, page 59)*

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EPC4SES

- considers making EPC data accessible as a key step in making it useful for citizens, academia and business.
- stresses the importance of harmonizing open data for research purposes across Europe
- proposes the integration of an aggregating layer in a privacy aware system architecture in order to secure data privacy and thereby increase acceptance

Further resources
www.smartenergy.nu

EVA

- stresses the need for managing data to be accessible for all interested groups through open platforms
- stresses the need for clear structures and guidance in data management
- stresses the need for a collaborative framework as a basis for open data platform provision

Further resources
www.evaproject.eu

Match-IT & TOP-UP

- heavily rely on energy, sensor, social and behavioural data within buildings (MatchIT) and communities (TOP-UP), which is used in control models, algorithms and smart solutions
- point at the importance of sharing open data solutions in a targeted manner
- point at the need for more integrative and transdisciplinary perspectives

Further resources
www.matchit.info
www.top-up.info

Joint Conclusions

While there is general agreement on the importance and high relevance of open platforms, the projects point at several aspects that need to be considered when building a data economy based on open platforms. The latter include i.a.:
data security

- the need for common standards;
- the need for transdisciplinary approaches towards data collection to allow for data homogenization;
- issues of under-representation of certain stakeholders.

The discussion makes clear that collecting, having and providing open data requires good organization and a collaborative effort on various levels.

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ERA-Net SES Projects´ Perspectives on

- **Need for communication campaigns to increase public awareness, acceptance and engagement**
- **Adoption of technical solutions to bring higher socio-economical return**

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AISTOR, DISTRHEAT, FlexSUS, REgions, SONDER, ZEHTC

More info on expera

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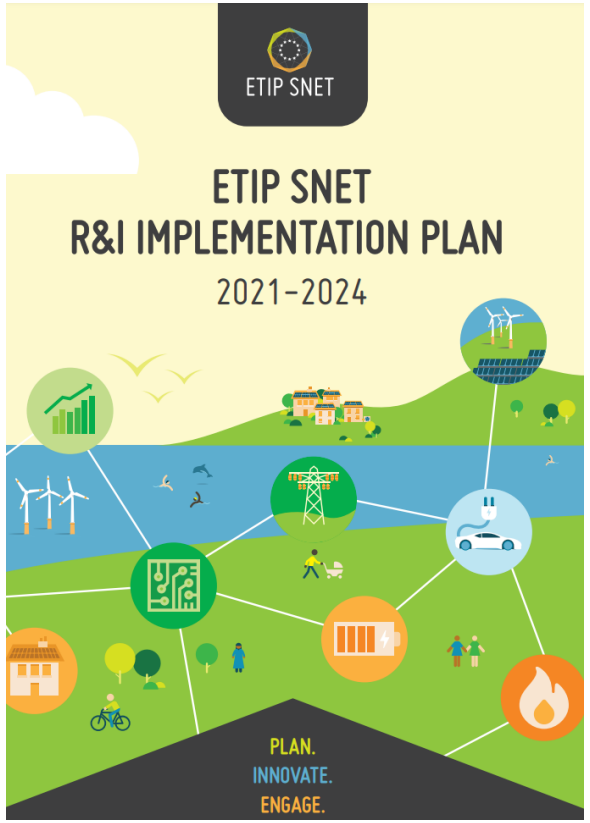
Building on „ETIP SNET R&I Implementation Plan 2021-2024" by ETIP SNET



Need for communication campaigns to increase public awareness, acceptance and engagement (I)

"The integration of RES needs communication campaigns to increase public awareness, acceptance and engagement." *(ETIP SNET R&I Implementation Plan 2021-2024, page 33)*

WG CaCI

AISTOR

Agree, especially designing products and models easily scalable and replicable is important. As well as providing relevant pilots and of-concepts that can educate the general public and serve as a case studies to give confidence to conservative potential users.

Further resources
www.be-aistor.com

REgions

We value awareness and engagement of different stakeholder groups on local and global levels, e.g. TSO to discuss value and potential market for ancillary services from distributed RES.

Further resources
www.regions-project.info

ZEHTC

We support the statement since more information on renewables and their role in society is necessary for a fossil free future is vital in order to reduce the man made climate change. The general knowledge and utilization in all sectors needs to be spread.

Further resources
www.zehtc.org

Need for communication campaigns to increase public awareness, acceptance and engagement (I)

"The integration of RES needs communication campaigns to increase public awareness, acceptance and engagement." *(ETIP SNET R&I Implementation Plan 2021-2024, page 33)*

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DISTRHEAT

According to DISTRHEAT, all studies related to the involvement of end-users/citizens/stakeholders are fundamental to provide a better understanding of social needs, customer requirements and strategies to make the energy system smarter.

Further resources: www.distrheat.eu

SONDER

Very true, it is hard to integrate the industry customers in our project. They hesitate providing consumption data for a hypothetical optimisation. Campaigns explaining the basics seem necessary. Presenting complex concepts on grid and energy supply are not helpful.

Further resources: www.project-sonder.eu

Joint Conclusions

The communication need is seen by all projects. This is related to a general knowledge and acceptance of RES as well as engagement of stakeholders and development of easily scalable and replicable products and models.

Adoption of technical solutions to bring higher socio-economical return

"Adopt technical solutions to bring higher socio-economical return for society in general and that [this is] not linked [/restricted] to specific social groups."
(ETIP SNET R&I Implementation Plan 2021-2024, page 34)

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AISTOR

AISTOR considers that the wide adoption of innovative energy technologies will place the consumers at the center of the future energy system, which in turn will facilitate the emergence of new regulatory frameworks that will provide access to abundant, affordable, secure, safe, and clean energy for all.

Further resources: www.be-aistor.com

FlexSUS

We use a socio-economic perspective to test the impacts of policies on consumers and in long-term city planning. We argue integrating RES through general measures cannot overlook the redistribution impact they will have on specific social groups if we want to achieve a sustainable, affordable transition.

Further resources: www.flexsus.org

Joint Conclusions

FlexSUS and AISTOR support the statement. FlexSUS stresses redistribution impacts of general policies and suggests complementing measures for specific groups. AISTOR hopes wide acceptance and adoption of innovative technologies will put citizens in the center of the energy system.

Funding Partners

Smart Energy Systems ERA-Net

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