

EPEE – Economics and Policy of Energy and Environment

SPECIAL ISSUE

Self-production, self-consumption and Renewable Energy Communities initiatives

The irreversible transition to decarbonisation, together with the adoption of EU policies on energy and climate changes, determined the progressive transition to a new energy production system, aimed at increasing generation with renewable energy sources. Decentralized production is thus on the rise, changing the system's perspective from centralization to localization.

At the same time, the pressure for a more active role of citizens, consumers and prosumers (see the European Clean Energy Package), in the guise of small-scale producers and/or responsive actors, seems the natural basis for the development of local energy markets.

In this renewed energy landscape, local Renewable Energy Communities (RECs) are an emerging, boosting decentralised initiative centred on local collaborative solutions that can be put in place by groups of individuals, households, small businesses, individually or in a structured way, often with the support of local authorities, associations or companies (publics and privates).

More active participation of individual consumers or collectively acting citizens as self-producer and self-consumer of renewable energy, alongside other activities such as management of smart local grids, are declared and shared international goals.

These initiatives are expected to play an important role in the energy transition as they can enable the development of sustainable energy technologies – preferably complementary, as renewable energy clusters - and bring a variety of benefits to local communities. However, some new relationships in RECs emerge between actors and they must be organised to insure an acceptable level of reliability, efficient and fair economic transfers between all stakeholders.

Moreover, their engagement and responsiveness could be boosted with the adoption of enabling technologies and, more generally, with the help of the recent improvement in digitalization and Information and Communication Technologies (for example, innovative blockchain-based peer-to-peer trading platforms). Public authorities support this deployment using well-designed incentives policies or regulations. Utilities and networks operators must also reorganise their activities to consider RECs, their new needs of services and pricing schemes.

It is expected that, in the coming years, energy communities will become increasingly professional and commercial oriented, looking for innovative business models, including additional services such as, for example, EVs services, energy efficiency models, and demand-side management. Another remarkable evolution could be the rise of networks, coalitions, and collaborative dynamics among communities, helping existing and aspiring ones with various aspects of the project. The emergence of these new trades and

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consumption behaviors are worth of interest to improve the reliability of this new decentralized models, rising new allocative efficiency issues.

RECs might have, therefore, the potential to become a standard mode on energy markets.

Nevertheless, RECs are still at an infant stage, highly heterogeneous and characterized by a relevant degree of complexity. Their actual implementation and long-term survival require further investigations on several open questions, attaining different dimensions. In particular, they are facing changing regulatory and technological landscapes, which represent both opportunities for and barriers to their development, while their actual profitability, arrangement and benefits for the communities need further investigation.

This special issue intends to gather contributions concerning the theoretical background, practical implementation and lessons learned about local RECs models, governance and arrangements. New roles of utilities and networks operators facing these RECs could also be proposed for this special issue.

More specifically, guest editors encourage submissions of original research articles that report significant research contributions and communities, industry, company or institutional case-studies covering topics including, but not limited to:

- The role and the empowering of consumers in the design and management of energy systems: from the individual to the collective;
- The allocations of costs and benefits between stakeholders and into the RECs;
- The role of energy communities in energy and social innovation/citizen and community engagement;
- New (cooperatives) business models and market design, profitability, revenue models, actors and stakeholders coordination;
- Cost-benefit analysis
- Renewable energy communities and their connections/interactions with wholesale and ancillary markets;
- Opportunities and impacts of digital/ICT technologies for self-production, consumption and energy communities, policy reforms needed;
- How national/international frameworks and regulations are (re)shaping energy communities; changing role and responsibilities;
- Energy communities as multidimensional, multidisciplinary initiatives;
- Utilities and network operators issues facing RECs and local markets;
- Governance issues;
- The role of privates.



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Submission Information

All submitted papers must contain only original work, which has not been published by or is currently under review for any other journal.

Detailed guidelines for editing are available at the following link:

<http://www.francoangeli.it/riviste/NR/Efe-norme.pdf>

Manuscripts should be submitted via this link:

http://ojs.francoangeli.it/_ojs/index.php/fr/about/submissions

Key dates

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