



newcomers
EXPLORING NEW ENERGY COMMUNITIES

KEY NEWCOMERS PROJECT FINDINGS

A short overview



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KEY FINDINGS

3.1 Definition of new clean energy communities (CECs)

How can (new) clean energy communities be defined?

We define clean energy communities (CECs) as 'associations of actors engaged in energy system transformation through collective, participatory, and engaging processes, seeking collective outcomes'. This definition is wider than that proposed in the EU's Clean Energy Package as it explicitly recognises the array of actors involved in contemporary activity, including for-profit enterprises.

Read on: [Blasch et al. \(2021\)](#)

KEY FINDINGS

- A common focus uniting new clean energy communities is finding ways to consume locally generated power.

 Read on: [D4.6, Section 5 \(forthcoming\)](#)

- Different types of energy communities can be identified, by foregrounding the actors involved, technologies employed, or business models pursued in energy communities.

 Read on: [Barnes and Hansen \(forthcoming\)](#)

- To capture contemporary activity and support further experimentation in energy communities, a sufficiently broad definition of energy community is required in national policy.

 Read on: [D3.3, chapter 3](#)



TYPES OF ENERGY COMMUNITIES

In 'Governing energy communities: the role of actors and expertise in business model innovation' (Barnes and Hansen, forthcoming), we identify different types of energy community business models as resulting from the actors involved in their creation. For example, renewable energy cooperatives are typically developed by local individuals coming together.

3.2 New clean energy community business models

What characterises energy community business models?

To survive and flourish within transforming energy systems energy communities have to develop new, often highly innovative business models.

KEY FINDINGS

- The viability of new business models is strongly influenced by the national energy markets in which they operate. For instance, national policies around the deployment of renewable generation technologies have provided a vital catalyst to the development of energy communities.

 Read on: [D3.3, chapter 4.3 and 5](#)

- Relatively standardised and stable business models can be identified and linked to national policy frameworks.

 Read on: [D3.3, chapter 4.3 and Barnes and Hansen \(forthcoming\)](#)

- Despite differing contexts and operational models, clean energy communities usually share one motivation, amongst others: contributing, in some form, to the success of the energy transition.

 Read on: [D4.6, chapter 3.1 \(forthcoming\)](#)

- Communities do not operate in a vacuum. The development of new business models therefore means reordering relationships within energy systems and the development of multiple value propositions to different system actors.

- Only a small number of energy communities are currently engaging with the active management of electricity networks or seeking to engage with emerging flexibility markets.

 Read on: [Distributed energy resources and energy communities, a working paper, chapter 3](#)



GOOD PRACTICE: POSTCODEROOS REGULATION IN THE NETHERLANDS

One example of the effect of favourable policy frameworks on business models is the Dutch postcoderoos regulation. The scheme offers a partial tax exemption for owners of distributed renewable generation technologies who live in the postcode area of a generation asset or in postcode areas adjacent to it. The scheme was introduced in 2014 and supported a reasonably standardised energy community business model up until its closure at the end of March 2021: community members invest in cooperatively-owned generation assets in their own or a neighbouring postcode; a portion of members' electricity imports are matched to their share of power generated by the cooperative installation, which is then eligible for a tax deduction of approximately 12 c/kWh (at 2020 tax rates) up to 10,000 kWh/year for 15 years. Such regulations support the replication of CECs.

3.3 Actors, networks and the role of skills and learning

Why and how do clean energy communities collaborate with other actors?

CECs are largely dependent on volunteering citizens and may lack the full professional expertise needed to set up viable renewable energy projects. This makes them dependent on external parties with specific knowledge and skills. For new clean energy communities this is especially relevant as they are pioneering innovative business models, technologies, and citizen engagement practices. To address their needs, new clean energy communities are increasingly building up networks, partnerships and alliances with a broad variety of actors, such as municipalities, companies and CEC networks and associations (umbrella organisations). Partnering with others opens up a wider array of possibilities for CEC business models.

How do members of clean energy communities interact and learn from each other?

Learning processes are taking place within energy communities in various ways, as members are very active in sharing knowledge with other members. Consequently, CECs may impersonate real 'knowledge banks' from which information is shared among community members in different ways.

KEY FINDINGS

- Energy communities typically rely on third party actors, especially grid operators who are responsible for electricity networks. If off grid, they will still need technical expertise, probably from a professional operator, to run the microgrid/microsystem.

 Read on: [D4.6 \(forthcoming\)](#)

- There are considerable differences between EU member states in terms of supportive infrastructures for energy communities. Some have dedicated umbrella organisations in place, whereas others have none. Such organisations may help in diffusing technical, financial and legal information, and may also function as arenas for networking and lobbying.

 Read on: [D3.3, section 4.4.1](#)

- Energy communities are increasingly forming partnerships with each other and also with local governments in order to accelerate local energy transitions.

 Read on: [Barnes and Hansen \(forthcoming\)](#)

- Energy community members are acquiring and sharing all kinds of knowledge and technical and non-technical skills in the area of renewable energy and energy efficiency.

 Read on: [D6.1, section 5.5.](#)





GOOD PRACTICE: LOCAL NETWORKS

NEWCOMERS case study community Zuiderlicht is the founder of Platform 02025 which brings together all energy communities active in the city of Amsterdam in order to achieve the full energy transition in the year 2025 as the city will celebrate its 750th year of existence.

CEC umbrella organisations in the six NEWCOMERS countries:

Country	Umbrella organisations and networks
United Kingdom	Community Energy England Community Energy Scotland Community Energy Wales
Germany	German Cooperative and Raiffeisen Confederation (DGRV) Citizens Energy Alliance (BBEn)
Netherlands	Energie Samen HIER opgewekt Participation Coalition Platform 02025
Sweden	-
Slovenia	-
Italy	-

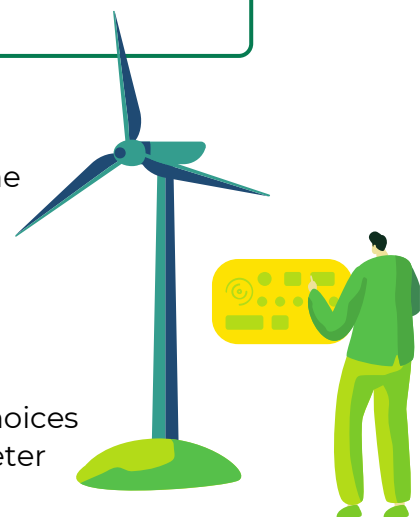
3.4 Role of technologies for ‘newcomers’ to emerge and thrive

What technologies do clean energy communities use? Why?

CECs may use a variety of technologies for generation, storage and distribution of clean energy, for a variety of reasons.

KEY FINDINGS

- Renewable energy generation is at the heart of most CECs. The most widely used technologies are solar photovoltaic followed by wind power, but innovative technologies are increasingly explored.
 - i** Read on: [D4.5, D3.3, chapter 3](#)
- Infrastructure regulation has a strong effect on the technology choices that CECs can make. An example is the challenge of smart meter rollouts (see box below).
- Different technologies bear different levels of risk. CECs often choose well-established technologies to minimise the risk of the technology not working as planned. Financial risk also needs to be considered.
 - i** Read on: [D4.5, Summary report on the NEWCOMERS international workshop](#)
- More advanced technologies involve more risk and require more expertise in their implementation. CECs with more sophisticated technologies therefore tend to involve more third party and commercial actors.
 - i** Read on: [Hansen et al. \(2021\)](#)



EXAMPLE OF HOW REGULATION AFFECTS TECHNOLOGY / OPERATIONAL CHOICES

To realise some activities, CECs rely on data from smart meters. This can create challenges. For example, our case study communities Energy Local and the SonnenCommunity both had to overcome delays in smart meter roll-out. In contrast, Power Zone decided to operate in a way that wouldn't require smart meters, to avoid such challenges.

3.5 Benefits for individual members and local communities

How do “newcomers” meet their members’ needs better than more traditional energy services business models? What motivates consumers to be part of CECs?

The benefits of clean energy communities (CECs) are wide-ranging and extend beyond environmental and financial aspects. Each NEWCOMERS case study provides a means for owning physical assets and/or a means to contribute to energy system changes through use of these assets and/or innovative governance arrangements.

KEY FINDINGS

- There is not a single but a multitude of motives for joining CECs that individuals mention. The four main categories of motives are: (1) *financial* motives (lowering the costs of energy consumption in the household and profiting from investing in a clean energy assets), (2) motives related to *self-sufficiency* (using local renewable resources), (3) *environmental* motives (contributing to energy transitions and to reduction of CO₂ emissions), and (4) motives related to *communal living*.

 Read on: [D6.1, section 5.1](#), [D6.2, section 5.5](#), [D6.3, section 3.5](#)

- CEC structure and governance affect the *empowerment* of its members. There is a clear relationship between the extent to which the organizational structure of the CEC enables empowerment, and members’ perception of their own empowerment regarding energy issues. Empowerment transforms CEC members’ roles - passive energy consumers become active agents who have an opportunity to influence and shape the future of energy systems in their country through collective engagement.

 Read on: [D6.2, section 5.3](#)

- One of the observed benefits of CECs is that their members have become more *environmentally conscious*, after joining the community. A spillover of their environmental concern is also evident. It often expands beyond the energy focus to other areas of daily lives of CEC members aiming to decrease their environmental footprint in general.

 Read on: [D6.2, section 6](#)

- CEC membership in place-based CECs also enables several *social benefits*, such as: the communal way of living, social recognition and social approval, connecting and acting with like-minded people, being part of a community, and building up the community identity.

 Read on: [D6.1, section 5.3](#)

- For both CEC members and non-members alike, economic and ecological benefits are perceived as important motivations for membership in a CEC. While non-members are strongly attracted by economic benefits, CEC members additionally emphasize the social benefits of CEC membership.

 Read on: [D6.1, section 5.3](#) and [D6.3, section 3.6](#)

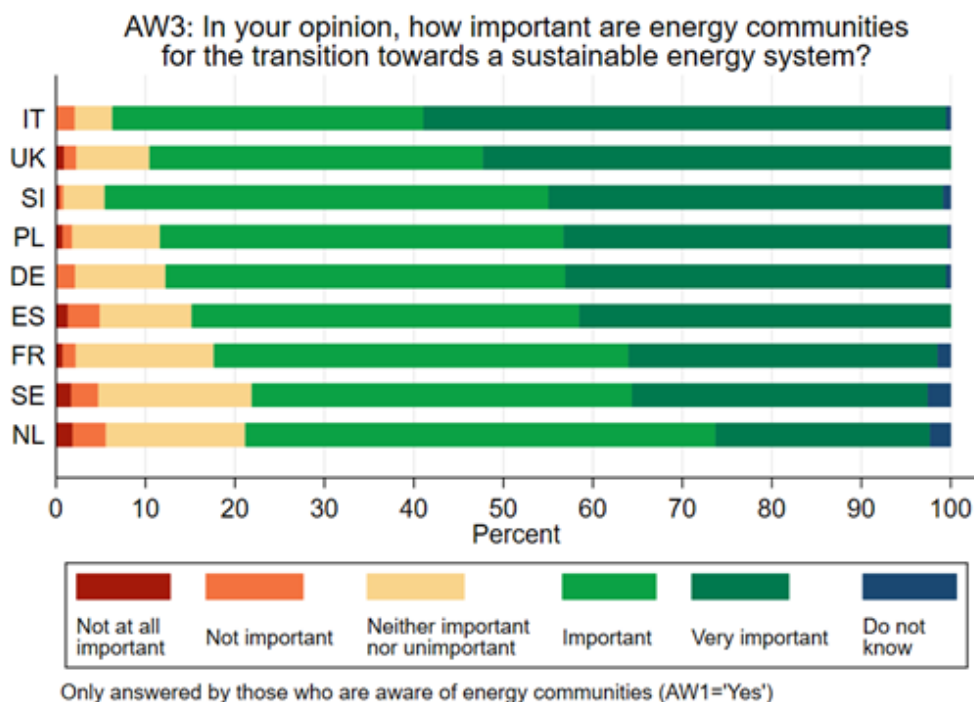
3.6 Benefits for society

What are possible positive spillover effects of CECs to society as a whole?

It is not hard to demonstrate benefits from energy communities to their members, such as social cohesion, financial benefits, satisfaction from taking part in a vital transition to renewable energy and increased knowledge and skills. But what kind of benefits do they offer to non-members and society?

KEY FINDINGS

- CECs mobilise people to invest and take action, they increase the contribution of renewable energy to the system as a whole, displacing what would otherwise be contributed via fuel/thermal sources with their associated carbon emissions and/or local pollution impacts.
 - i** Read on: [D4.4, section 3](#)
- CECs can promote learning and encourage people to take action, by spreading knowledge and practical know-how regionally or nationally.
 - i** Read on: [D6.2](#)
- By promoting consumption of locally generated electricity, and by aggregating demand response, some communities offer value to the network operator (and, indirectly, to society) by reducing the need for system balancing.
 - i** Read on: [D4.4, section 3.5, 3,10](#)



- An energy community can offer value to non-members by keeping money within a local economy that would otherwise be lost to it, by implementing new energy tariffs and/or energy efficiency measures
 - i** Read on: **D4.4, section 3**
- Non-members perceive CECs as most beneficial if they are run by citizens, involve their members in decision-making and lead to reductions in energy expenses.
 - i** Read on: **D6.3, section 3.6**
- A remarkably consistent finding from our citizen survey of around 13,500 household in nine different European countries is that the vast majority (>80%) consider CECs as an important or even very important element in the transition to a more sustainable energy system.
 - i** Read on: **D6.3, section 3.3**

INTERDEPENDENCE OF CECs AND THE WIDER SYSTEM

We found that ‘individuals with a background in energy systems often act as project initiators and (...) are important as mediators of trust between communities and other organisations (...). Business models typically involve an alliance of actors and the interconnections between them make it difficult to draw clear boundaries around a community. This indicates how energy communities depend on other actors and the wider system, and also suggests that energy communities can provide multiple benefits to multiple stakeholders. (from the Executive Summary, D4.4).



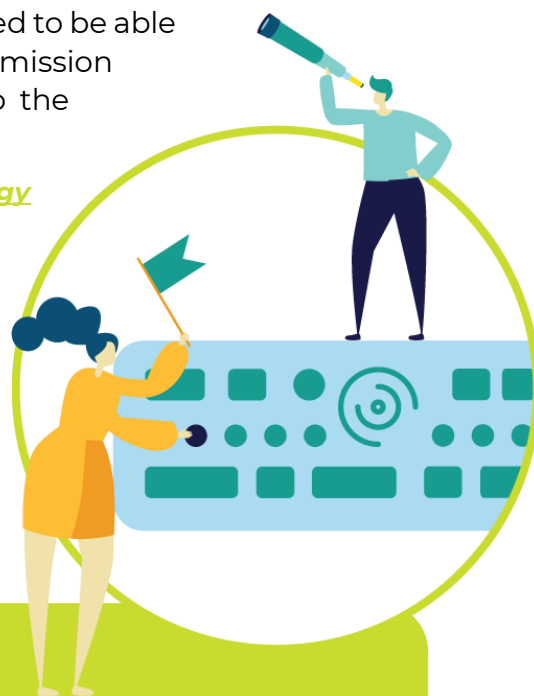
3.7 Benefits for distributed energy systems

To what extent do “newcomers” create value in distributed energy systems?

Distributed Energy Systems (DES) can include local generation, storage, microgrids and monitoring. Advantages associated with increasingly distributed energy systems include their potential to increase overall system efficiency. They can also facilitate sharing of locally produced energy between e.g. members of an energy community.

KEY FINDINGS

- The most common resource our energy communities offer energy systems is distributed generation from renewable sources, increasing the proportion of renewable energy in the supply mix.
 - i** Read on: [D3.3, chapter 3: Distributed energy resources and energy communities, a working paper, chapter 2 & 3](#)
- Clean energy communities are often not (yet) designed to be able to create value for the distribution network or transmission grid (beyond the environmental value of adding to the amount of renewables-based supply).
 - i** Read on: [Distributed energy resources and energy communities, a working paper, chapter 3](#)
- At present there are few incentives for clean energy communities to offer flexibility services. Where an energy community does offer flexibility there is usually a commercial actor facilitating this.
 - i** Read on: [Distributed energy resources and energy communities, a working paper, chapter 3](#)



GOOD PRACTICE: ENERGY LOCAL CLUBS

Established in 2016, Energy Local is one clean energy community that is designed to create value for distributed energy systems as well as for members. Through time-of-use tariffs and by facilitating the local sharing of energy, Energy Local reduces stresses on the local network and incentivises the use of local renewable generation, when it is being produced. Each Energy Local Club is set up as a cooperative. Read more about Local Energy within our short [research brief](#) and at [Our Energy platform](#).

3.8 Favourable environments for ‘newcomers’

What could help increase the number of CECs in different local or national environments?

The development of the CEC sector varies strongly by country. In some countries, CECs have emerged despite, rather than because of, specific governmental support (national or supranational). In others, governmental support paved the way for CEC development. But what is important for their future development?

KEY FINDINGS

- Positive publicity for clean energy communities influences the perceived value of engagement in CECs and raises awareness about the roles of CECs in energy transformations for addressing climate change.

i Read on: [D6.1, section 5.8](#)

- Commitment of (local) governments is needed to support the development of renewable energy solutions and overcome the various administrative and legal hurdles for energy communities

i Read on: [D3.3, section 4.4](#); [D6.1, section 5.8](#):

- The housing market (structure of property (housing) ownership) can significantly affect dissemination of CECs. There is a need for (new) housing legislation that would encourage investments in clean energy for renters and landlords.

i Read on: [D6.1, section 5.8](#):

- Lack of information about benefits of CECs for individual households and communities can be addressed with better knowledge dissemination regarding successful CEC practices.

i Read on: [D6.1](#)

- Promotion of a societal culture that is less consumption-oriented supports environmental consciousness that positively affects the formation of CECs.

i Read on: [D6.1, section 5.8](#):



KNOWLEDGE DISSEMINATION: Our-Energy.eu PLATFORM

The Our-Energy.eu platform is an online platform for education, awareness-raising, and networking, focusing on energy communities, energy transitions and related topics. It offers short, interactive multimedia content about the current and future role of new clean energy communities. It includes a networking feature for registered users. The platform allows users to learn from other communities and share their knowledge and experience. Link to Our Energy platform: <https://our-energy.eu/>



3.9 Observations on the (potential for) diffusion of energy communities

How do energy communities scale or diffuse?

NEWCOMERS are the result of interplay between diverse actors, motivations, and contexts. Because this makes every model unique, there is no one-size-fits-all approach to scaling them. Often, elements of energy communities scale or diffuse, rather than energy communities in their entirety.

KEY FINDINGS

There are several ways in which CECs may be scaled or their benefits diffused:

- Elements of energy communities can diffuse via members sharing knowledge, experience and information with others outside the community, thereby promoting the CEC's benefits. This diffusion may occur informally or formally. It can occur online via platforms and social media or by word-of-mouth sharing of information within social networks it can also involve official community ambassadors.

 Read on: **D6.4**, (forthcoming)

- Another way a CEC's impact may be diffused is via replication of parts of its activities' business model. For example, a CEC may involve a community organisation and a licensed supplier working in partnership. The licensed supplier may then seek to replicate the partnership with a new community elsewhere, thereby setting up a new CEC.

 Read on: **paper in progress**

- Legislation, regulation and policy have important implications for the diffusion of (and benefits achieved by) energy communities. CECs exist within market structures and are affected by them. Actors involved in CECs therefore need (financial) incentives to scale their CEC business models.

- There is currently a lack of guidance for the development of CECs, as well as for the wider promotion of the benefits of CECs. Moreover, politicians and decision-makers often lack the knowledge and understanding that is necessary to effectively support the development of CECs. Here simple guidelines can help enhance the scalability of CECs.

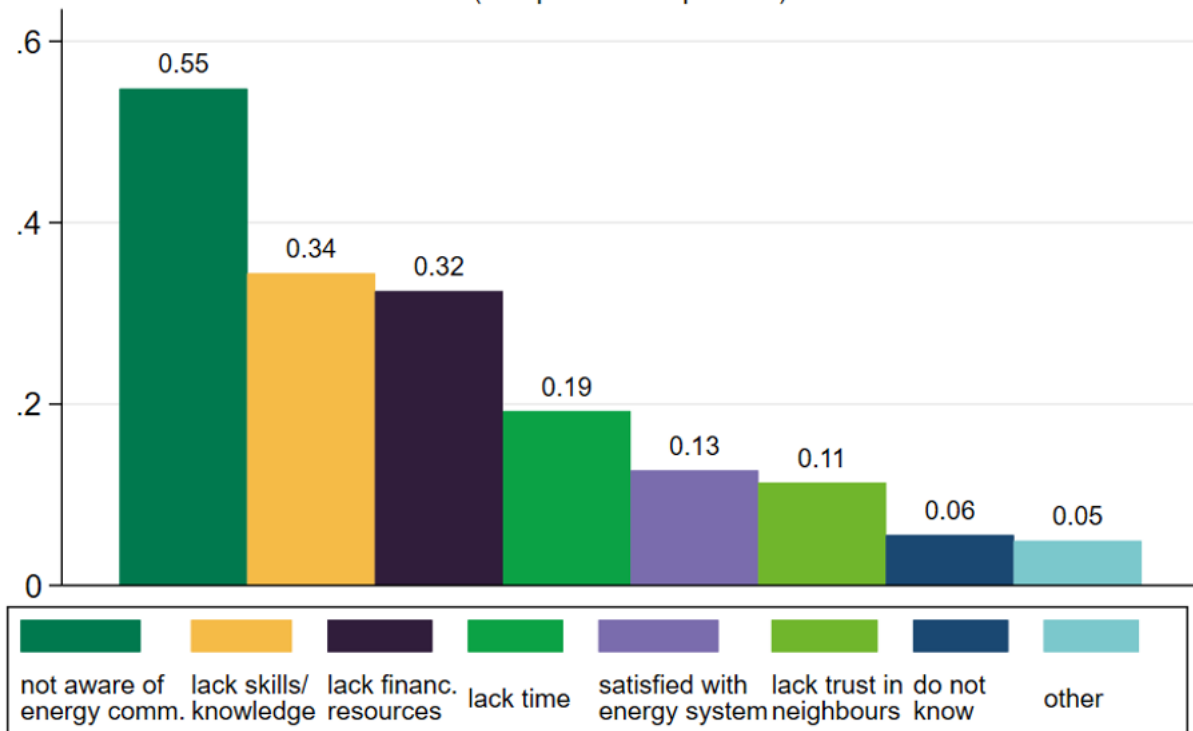
 Read on: **D6.4** (forthcoming)



- In the nine European countries in which we ran our citizen survey, the main reason given by citizens for not joining a CEC is that they were not aware of energy communities. Other important self-reported reasons are a lack of skills/knowledge and a lack of financial resources. These constraints suggest scope for upscaling of energy communities because they can be addressed through, for example, information campaigns and financial incentives.

i Read on: **D6.3, section 3.3, 3.5**

DB1: What is holding you back from joining an energy community?
(multiple answers possible)



Only answered by those who are not a member of an energy community

3.10 'NEWCOMERS' and existing EU policies and regulations

To what extent is the Clean Energy Package (CEP) definition of energy communities a barrier or an enabler for them to emerge?

The CEP was finalised in 2019 and its implementation in the member states will contribute to further developing national policy and legal frameworks for energy communities.

KEY FINDINGS

- It is important to acknowledge the need for adaptation of regulations to national circumstances in order to enable the development of local versions of energy communities, and not to exclude initiatives
 - i** Read on: [D2.2; D3.3, chapter 3:](#)
- It is less the EU legal definitions as such and more the way the CEP has been transposed nationally that affects the development of energy communities. Regulatory change in member states may enable energy communities to emerge
 - i** Read on: [D3.3, chapter 4.3.1](#)
- Novel types of energy communities have emerged in alliances between different types of actors, e.g., citizens, public and private actors. Projects that go beyond the production of renewable energy seem to be especially dependent on partnerships with for-profit businesses.
 - i** Read on: [D2.2; D4.6 \(forthcoming\); Barnes and Hansen \(forthcoming\)](#)
- More research is needed about how to stimulate alliances between energy communities and for-profit businesses without denying members (citizens and SMEs) control of the CEC.
 - i** Read on: [D3.3; D4.4; Barnes and Hansen \(forthcoming\)](#)

GOOD PRACTICE: REGULATIONS TARGETING CITIZEN INVOLVEMENT

Italy has introduced a version of Feed-in-Tariffs (FITs) specifically targeting CECs.

In its national climate agreement (Klimaatakkoord) and linked to its policy on Regional Energy Strategies, the Netherlands has set the goal of 50% local ownership for local renewable energy projects.

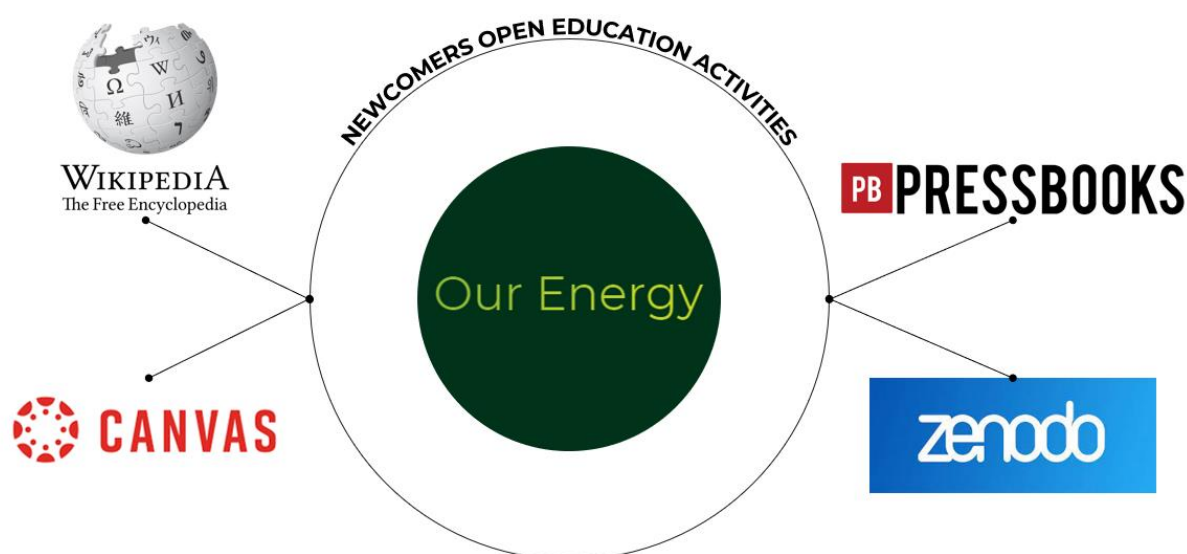
4 NEWCOMERS open educational resources and activities

Lastly, the NEWCOMERS research has highlighted the importance of **open knowledge exchange** both within and between new clean energy communities. They are eager to share their knowledge and skills and at the same time, they are open to learning from other communities.

Through open knowledge sharing practices, new insights on the operations and possible improvements of energy communities' future developments can be gained effectively. Therefore, the NEWCOMERS project is activating several areas of openness to provide added value for both the new clean energy communities as well as for other key stakeholders like researchers, policymakers and society at large.

Our approach towards 'open' (open science, open education) started in 2020 by launching the Our Energy online platform for education and awareness-raising of new clean energy communities. In 2022, our open educational activities will spread into the following four key areas:

- Open knowledge about new clean energy communities will be shared on Wikipedia, the free online encyclopedia;
- An open handbook, titled Energy Literacy for Energy Communities will be offered for collaborative multistakeholder enrichment;
- An open online course will be launched for energy communities' education and awareness-raising to strengthen their energy literacy and
- Open access to all our public deliverables and other materials like presentations, videos, reports etc. will be provided in the Zenodo open repository.



More from the NEWCOMERS

  **NEWCOMERS H2020**  newcomersh2020.eu

 **NEWCOMERS_H2020**  our-energy.eu

 [Energy community network - LinkedIn group](#)

