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Summary

The report identifies the most viable business models, social innovation models and new forms of organisation appropriate for advancing energy citizenship (ENCI) in different conditions. It offers an innovative approach based on business and social innovation models (BSIMs) of the ENCI detailed case studies for the elaboration of strategies for upscaling and advancing energy citizenship in the nine countries participating in the EnergyPROSPECTS project. To this aim, it proposes a clustering of the main BSIMs, distinguishing between publicly-run, organisation-based and community-based initiatives, presenting a set of nine good practice cases out of the forty detailed case studies. The analysis of the clusters revealed a set of characteristics for each cluster that has to be taken into account for the scaling of ENCI. Following on from an examination of some of the main issues and challenges related to the three main forms of scaling (scaling out, scaling up and scaling deep), this report presents four possible parallel strategies to be developed within each cluster, in order to advance ENCI for each type of BSIMs.

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1 Introduction

In recent times, alternative, social and environmental values (such as justice, community cohesion, sustainability or ENCI) have shifted from the periphery to the centre of several business models of energy generation, supply and use (Foxon 2015). Following the approaches that try to combine ethical perspectives, such as energy justice, with an extended business model framework (Hiteva and Sovacool 2017) or the perspective of sustainability-oriented innovation (Dylick and Muff, 2015; Adams et al., 2016; Lüdeke-Freund, 2018; Mihailova 2023), we elaborated a framework aimed at capturing ENCI in various existing models or forms of initiatives.

Energy citizenship refers to “forms of civic involvement that pertain to the development of a more sustainable and democratic energy system” (Pel et al. 2021). The aim of this deliverable is to explore business models and social innovation models of initiatives that seek to create a more just, sustainable and local energy system. This is achieved in two main ways:

Firstly, this deliverable report identifies the main areas in which ENCI can inspire the creation of new practices of value creation and, therefore, new business and social innovation models (BSIMs) or a wider integration of new concerns within existing BSIMs. Secondly, it enables to question the scalability of both BSIMs and the related forms of energy citizenship and – based on this – the potential strategies to advance ENCI. An additional objective of this report is to examine how ENCI is embedded in BSIMs “that work” or, in other words, how collective agencies/initiatives convey BSIMs that enable a viable and growing integration of ENCI in the energy system. By BSIMs we refer to both the usual, traditional or, more precisely, little-innovative models of economic activities as well as ambitious “new ways of doing, thinking and/or organizing energy” that aim at reconfiguring the energy system, labelled as social innovations (SI) (Wittmayer et al. 2022).

According to Randles and Laasch (2016), mainstream approaches on business models cannot be simply adapted to consider societal cares, concerns and values. This suggests that true sustainability-oriented economic activities require different organisational forms to be able to integrate new values. In this deliverable we examine the models of three types of collective¹ BSIMs that embed energy citizenship values: community-based models, organisation-based models and publicly-run models. Such initiatives differ radically from the usual business model frameworks of value creation, capture and monetisation (Grünewald et al. 2014). The focus of our analysis is the nature of the business and social innovation model and the scalability of these models, where the meaning of value creation is shifted to aspects other than monetised value, towards a conception of value that includes various key features of ENCI.

Against this background, the following ENCI features (inspired from Pel et al. 2021) are considered as basic principles for BSIMs analysis: 1) Participation of citizens and citizen collectives, which includes the possibility to take part in the decision-making process of the organisation;

1. Individual cases have not been considered here. First, because the detailed case studies were focusing on collective cases; second, because individual BSIMs raise different issues in terms of scalability and advancement of ENCI.

2) Transparency, fairness and openness of the organisation/initiative; 3) Affordability and accessibility to a large public. Those three principles are then linked to the configurations that enable the case to sustain in order to identify the most viable BSIMs conducive to ENCI among the 40 detailed case studies analysed in the EnergyPROSPECTS project.

The BSIMs are examined in light of various non-business aspects to explore the following questions inspired from the business model development for sustainability (Bocken et al. 2014; Schaltegger et al. 2016) and business models for sustainability innovation (BmfSI) (Lüdeke-Freund, 2018; Mihailova 2023):

- *Who* is involved in the initiative,
- *who* are partners and
- *what* are the types of partnerships and how decisive are they for the model
- *what* is form of the organisation,
- *what* value(s) is/are created (including social and environmental values),
- *what* sort of economic activity is involved and
- *what* are the sources of funding?

The answers to these questions are also meant to include some features that specifically address the viability of the case, such as:

- *When* was the case created (did the case last over time)?
- *How diversified and secure* are the sources of income/revenue of the case (public fundings, economic activity, etc.)?
- *How professionalised* is the case?

These series of questions do not provide a clear-cut assessment of the viability and/or scalability of the case, yet they provide a synthetic picture of the case that enable and systematise an ENCI-focused analyse in terms of BSIMs.

The twenty detailed case studies of the EP project for which BSIMs components have been identified have been analysed further through these lenses, on purpose of sorting out a set of “*good practice cases*” that appear to be *particularly viable while supporting decisively ENCI*. The methodology of this first step of our analysis is described in chapter 2, which also presents the main results of the BSIMs analysis undertaken in D4.5, underlining the salient characteristics of the clusters and subclusters. Chapter 3 builds upon the good practice cases to question the scalability of ENCI regarding that of specific initiatives´ BSIMs and proposes BSIMs-based pathways to advance ENCI at the national level² according to the clusters and subclusters, taking into account the insights from both EU and national PESTEL analyses.

2. The nine countries are that of the partners of EnergyPROSPECTS project, namely Ireland, Belgium, Hungary, the Netherlands, Bulgaria, France, Latvia, Germany and Spain.

2 Material and methods: cluster analysis and BSIMs of “good practice cases”

This section is based on the empirical inputs provided by all EP partners during the detailed case study analysis and the first analyses of this data undertaken in *D4.5 Viable business models and strategies for growth and expansion* (Debourdeau and Markantoni 2023). Key results of D4.5 are synthesised here to serve as a basis for exploring further the issues related to the scaling of ENCI and the possible national strategies to advance ENCI. First, we present the comparative clustering that was elaborated to enable the joint consideration of key features of cases and of the context framework and factors impacting ENCI. Then we synthesise the first results of the BSIMs analysis for each cluster before introducing the nine “good practice cases” which are used to question further the scalability of ENCI. Figure 1 synthesises the consecutive steps of the data treatment process.

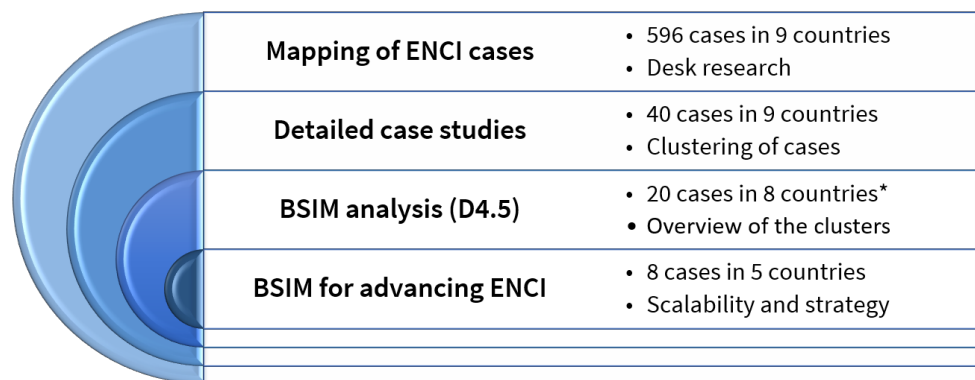


Figure 1: Data treatment process

2.1 Clustering the ENCI cases

A comparative clustering of the forty detailed case studies was undertaken in the first instance in order to consider both the BSIMs characteristics of the ENCI cases and the national PESTEL factors (see Hajdinjak et al. 2023, [D5.2](#)) as well as the main framework conditions that might impact the cases. Four main clusters and six subclusters were then identified, as represented in Figure 2.

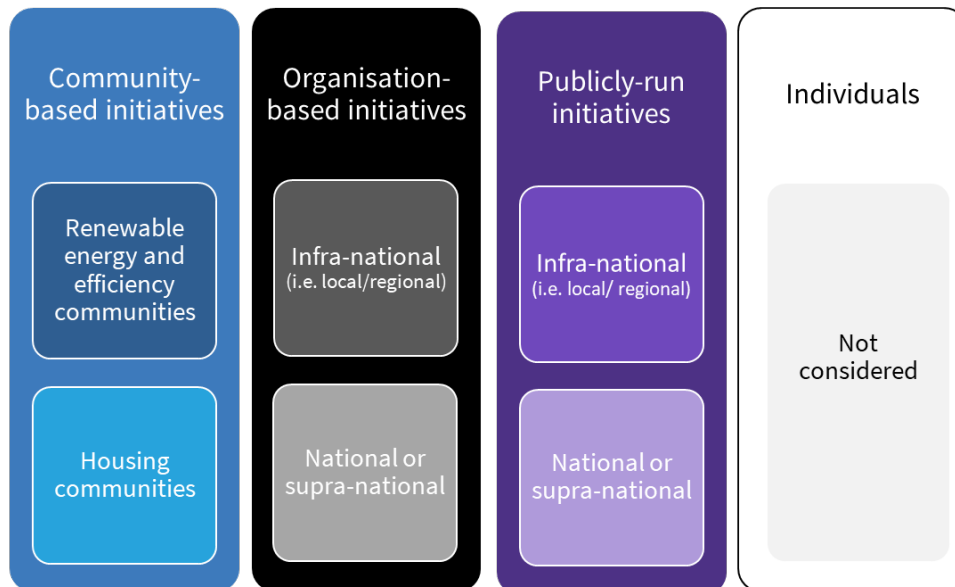


Figure 2: Clustering of ENCI cases

- Community-based initiatives:** This cluster consists mostly of cooperatives but encompasses also Renewable Energy Communities (REC) and Citizen Energy Communities (CEC) as defined at the EU level. These initiatives focus either on RES and efficiency or housing or mobility³ and, therefore, relate to different policy frameworks. The cases composing this cluster foster primarily collective citizen-based or hybrid forms of ENCI but may address secondarily individual forms of ENCI within organisations (like ECTC or Nagypáli) or within the household (ECTC, Goiener)⁴. Some of the community-based initiatives are also part of social movements when they are politically active (e.g., the energy cooperative Bürger Energie Berlin in Germany or Goeiner in Spain, or Lavidaverde and La Borda in the same respective countries).
- Publicly-run initiatives:** This cluster consists of initiatives led mainly by public institutions and/or governments at various administrative and regional levels. In these cases, which might also adopt a hybrid form (public/private), public institutions play a predominant role in their organisational and funding structure. Most relevant distinction regarding the policy frameworks is observed between infra-national and national or supra-national levels. Publicly-run initiatives entail various forms of ENCI, such as individual public forms through consultation or referenda (such as the consultation “shaping our energy future” in Ireland), but also individual forms of ENCI within the household (Pass renovation, Nagypáli) and/or organisations (Nagypáli)

3. Among the 40 detailed case studies, only two were dealing with mobility, Railcoop and Cargonomia. They could not be considered further for the BSIM analysis: the Railcoop cooperative is still facing massive challenges to achieve its goal to operate a train line, whilst the Cargonomia case does not have any legal existence or structure, thus making any analysis in terms of BSIM irrelevant. Consequently, only the RES/efficiency and housing subclusters appear in the figure.

4. The categorisation of the various forms of ENCI refer to the typology of energy citizenship developed in Debourdeau et al. 2021.

- **Organisation-based initiatives:** This cluster consists of initiatives from various types of organisations, such as NGOs, NPOs and companies. Most of these organisations exert an economic activity as a source of income and endurance, yet a few do not and depend fully on external funding sources (like LSA). They can also exert their activities at various scales, from the very local to the national level. The initiatives entailed in this cluster meet a large variety of forms of ENCI, both at the collective (citizen-based and hybrid sometimes with added social movement components, such as Solocal Energy) and the individual (within the household or organisationally embedded, such as LSA and Solocal Energy) levels.
- **Individual initiatives:** Despite the large variety of individual initiatives mapped in EP, those sorts of initiatives may hardly be investigated in terms of BSIMs, of which focus is mainly collective forms of ENCI. However, as underlined for the previous clusters, individual forms of ENCI are largely entailed in collective cases, and therefore encompassed along our analysis.

This clustering of initiatives thus encompasses all the main forms of ENCI identified in the conceptual typology (Debourdeau et al. 2021), while accounting altogether for the key sorts of BSIMs and the sets of framework conditions that are directly impacting the related kinds of initiatives. As such, the clusters will serve as a basis for the elaboration of the core BSIMs-related strategies to advance ENCI (section 3).

2.2 BSIMs data treatment

The detailed case studies conducted within EnergyPROSPECTS entailed one question dedicated to BSIMs, focusing on the aspects that enable the cases to persist over time. To answer the research (sub)-questions, a mixed-method approach was applied combining, desk-research and in-depth interviews with key informants. Forty cases were selected from the larger EnergyPROSPECTS database of 596 cases of ENCI in Europe⁵, of which twenty presented with relevant inputs for the analysis of the BSIMs conducive to ENCI. The corresponding inputs have been treated, synthesised and (if needed) updated to create Table 1, which is aimed at collecting the critical information to assess the viability of the BSIMs and their contribution to the development of ENCI.

5. The detailed methodology and selection criteria of the cases are elaborated in detail in the Deliverable 3.3 (Pel et al., 2022) and Deliverable D3.4 (Vadovics et al., 2022).

Table I: Data treatment for BSIMs analysis

Business Model	ENCI principles	Viability components
<p><i>Who is involved in the initiative?</i> Agency of the case.</p> <p><i>Who are partners and what are the types of partnerships (how decisive for the model)?</i> Extended agency of the case.</p> <p><i>What is form of the organisation?</i> Organisational and legal form.</p> <p><i>What value(s) is/are created (including social and environmental values)</i> Social and environmental values encapsulated in the BSIM.</p> <p><i>What sort of economic activity is involved and what are the sources of funding?</i> Financial aspects and economisation processes</p>	<p>Participation Citizen involvement and possibility to take part in the decision-making process of the organisation</p> <p>Transparency Fairness and openness of the organisation/ initiative</p> <p>Affordability Affordability and accessibility to a large public</p>	<p>Endurance across time Case creation and sustainability, degree of institutionalisation</p> <p>Diversity and security/ reliability of the sources of incomes Financial robustness and independency of the case</p> <p>Professionalisation Institutionalisation (to balance with commitment of volunteers)</p>
Purpose/intended outcome of BSIM		
Who is involved in the value creation	Value co-creation activities	

The completed tables are available in D4.5 *Viable business models and strategies for growth and expansion* (Debourdeau and Markantoni 2023). This report builds on the outputs of these analyses to explore further the scalability issue and the potential national strategies to advance ENCI in the 9 partner countries.

2.3 Cluster analysis of the BSIMs

The twenty cases analysed in detail in D4.5 (Debourdeau and Markantoni, 2023) were confronted with the comparative clustering to check the analytical relevance of the clustering and identify general patterns of BSIMs for each cluster. Table II below synthesises the main results of D4.5 by underlining some key characteristics of each cluster and subcluster and sketching their respective replicability/translatability in various contexts.

Table II: Overview of the clusters and subclusters main characteristics

Cluster	Publicly-run cases		Organisation-based cases		Community-based cases	
	(Supra-)national level	Infra-national level	Local-scale activities	National (large) sphere of activities	Renewable energy and efficiency	Housing conditions
Cases	<ul style="list-style-type: none"> • Consultation: Shaping Our Electricity Future (IR) 	<ul style="list-style-type: none"> • Drechtsteden Energy (NL) • Energy Transition of City of Burgas (BU) • Hauts-de-France Pass Renovation (FR) • Nagypáli (HU) 	<ul style="list-style-type: none"> • Bike evolution (BU) • Solocal Energy (DE) • Cargonomia (HU) 	<ul style="list-style-type: none"> • Shared Energy (FR) • HOSe (BE) • TreeDependent (HU) • Naturstrom (DE) • National Association of Active Residents - LSA (NL) 	<ul style="list-style-type: none"> • Loenen Energy (NL) • Aran Islands Energy Cooperative (IR) • GoiEner Taldea (SP) • Citizen energy Berlin (DE) • ECTC (IR) 	<ul style="list-style-type: none"> • Energy Community Tipperary Cooperative - ECTC (IR) • La Borda (SP) • LaVidaVerde (DE)
Main Features	<ul style="list-style-type: none"> • Orientation towards common good and public services at various scales (mostly local or regional), mostly reformative • Just and equitable energy transition as a core value for the communities. • Low citizen participation and control ("top-down" initiatives, in which energy transition is done <i>for</i> the citizens rather than <i>by</i> the citizens themselves) • Involvement of a large range of stakeholders and partners • Rather complex structure/ organisation • High dependency on public fundings, resulting in both viability and fragility of the case • Innovative cases show various processes of "economisation" (financial mechanisms enhancing new markets or strategy of increasing attractiveness for businesses to settle there and take part in the local transition process) 		<ul style="list-style-type: none"> • Transformative cases at the local scale: strong values: deep sustainability, sociocracy, energy democracy and justice concerns • Emphasis on citizen empowerment at the local/community scale • Local networks and informal partnerships • Single organisation (or no organisation), with a rather simple structure • Financially „independent“ cases, that develop an economic activity to sustain over time, with little use of public funding sources 	<ul style="list-style-type: none"> • High number of citizens involved, incl. financially • Multiple activities for value (co)-creation, up to finance-intensive cases • Numerous partnerships and large networks (advocacy coalitions and policy activities) • Key importance of regional/local relays • Rather complex structure, mixing several organisational forms (cooperative, LLC, investment fund...) • Development of specific tools and financial mechanisms and ENCI-related economisation processes • Rather long-lasting cases 	<p>Single organisational structure</p> <ul style="list-style-type: none"> • Either community wellbeing- or more politically-oriented ENCI • Key partnerships to sustain • Classic cooperative model and difficulty in achieving financial security and independence from public fundings • Ongoing diversification of foci towards sources of incomes <p>Complex organisational structure</p> <ul style="list-style-type: none"> • Citizen empowerment through the cooperative • Cooperative completed by other kinds of organisations for more efficacy (projects, fundings, etc.) • Various sources of fundings: production and supply of energy combined with public fundings 	<ul style="list-style-type: none"> • Create and promote an alternative model of living (management and ownership), and community self-organisation • Citizen empowerment beyond ENCI and consensus culture and high focus on environmental sustainability • Key partners enabling the alternative model (e.g. Mietshäuser Syndikat) • Complex organisational structure: cooperatives completed by other kinds of organisations, notably to get out of the speculation • Various sources of fundings: energy production, public fundings, academic partnerships
Replicability/translatability	<ul style="list-style-type: none"> • Replicability / translatability of such cases in other contexts depends highly on pro-active policy makers or political actors at the local/regional levels, and their capacity to mobilise a wide range of stakeholders to support their views on energy transition. • ENCI still need to be further enforced in such kinds of initiatives 		<ul style="list-style-type: none"> • High replicability / translatability potential of such cases in enabling contexts • Deeply depending on engaged individuals and local conditions 	<ul style="list-style-type: none"> • Challenging replicability / translatability of such cases in other contexts due to the complex organisation • High potential for transformative change and advancement of ENCI 	<ul style="list-style-type: none"> • Challenging replicability / translatability of such cases in other contexts • Long pathway towards self-sustainability • Local community focus and change potential? • Limits of the "single" cooperative model 	<ul style="list-style-type: none"> • Challenging yet feasible replicability / translatability of such cases in other enabling contexts • Limited citizen participation due to project size • Development of alternative socio-economic model and sustainable lifestyles

2.4 “Good practice cases”: overview of the most viable BSIMs

Within the twenty cases selected, the sample was further refined to focus on the BSIMs that are the most viable and potentially the most supportive to advance ENCI. Several criteria have been applied for this purpose:

- The case is still ongoing and largely considered as successful (internally and externally) in achieving its goals according to the survey data inputs.
- The BSIM of the case is quite innovative or presents remarkable features: this criterion resulted in a lower focus on cases which have adopted a cooperative model, given that energy cooperatives have been largely studied within the literature (Reis et al. 2021, Brauholtz-Speight et al. 2020, Ahlemeyer et al. 2022, Funkhouser et al. 2015). Learnings from such initiatives (reported in D4.5) are mobilised to consider the REC and CEC within the strategy elaboration.
- Building on the criteria setup by Lowitzsch et al. (2023) to select collective models enabling the participation of citizens in the energy transition, the selected cases were sorted out to enable a balance between models that: 1. appear to be replicable and scalable; 2. have an economic activity or generate substantial community benefits; and 3. consider sustainability issues.

Based on those criteria, a short list of good practice cases was established to question in depth the scalability issue (Table III). These cases are shortly described below.

Table III: Short list of case studies for the study of scalability

Cluster and eventually subcluster		Short listed initiatives
Publicly-run cases (infra-national)		Hauts-de-France Pass Renovation (FR) Nagypáli, the renewable energy village (HU)
Organisation-based cases	incl. economic activity	Shared Energy (FR) Solocal Energy (DE) Hydro Electricity Ourthe and Sambre (BE) TreeDependent (HU) Naturstrom AG (DE)
	No economic activity	National Association of Active Residents - LSA (NL)
Community-based ⁶		Energy Communities Tipperary Cooperative (IR)

6. Among the community based cases, ECTC was the only one to be short-listed, considering its remarkable already-existing replicability. For the other cases, in the light of the important literature on energy communities and cooperatives and their rather stable and well-known BSIMs, the focus has been put on other kinds of initiatives that could appear as more innovative within the publicly-run and organisation-based cases. However, energy communities and cooperatives will be part of the elaboration of strategies.

2.4.1 Publicly-run cases

Hauts-de-France Pass Renovation

Pass renovation⁷ is a pilot project launched in 2013 by the Hauts de France region and operated by the one-stop-shop PSEE (Regional Public Service for Energy Efficiency) that aims at enhancing energy efficiency in private buildings. Founded on an innovative “third party financing” economic model, through a dedicated public fund, the PSEE advances the amount allocated to renovation works; beneficiaries repay this completely or in part through financial savings generated on their energy bill. At the time of its initiation, there was a strong political will to pilot third party financing and support households’ access to renovation by certain regionally elected representatives.

BSIM: The case relies on an innovating financing mechanism which helps Pass Renovation to provide financial assistance to households with limited self-financing capacity. The main idea is to convert energy savings into financial resources for households, so that they can engage in deep energy renovation works. The financial mechanism consists of: 1) pre-financing of government subsidies and loans; 2) taking into account the energy savings generated by the work in the financing plan; 3) long repayment periods (15 to 25 years depending on the work carried out); 4) collective loans to condominiums, which are currently not widely distributed by the banking sector. Key to its operation is the process of economisation of energy renovation at the regional scale that involves a complex ecosystem composed of public institutions, regional and local authorities (e.g., municipalities) and more than 700 local companies and craftsmen.

ENCI: Citizens are not directly taking part in the governance of the project itself but benefit from it, and therefore the case can be described as top-down in the sense that the “Pass renovation” mechanism is setup by institutional actors to govern civil society (here the households owning their homes).

Nagypáli, the renewable energy village

In 1996, the rural village of Nagypáli⁸ elected a mayor with ambitions to improve quality of life in the village by various measures. Back then Nagypáli was a settlement in the Hungarian countryside in the brink of extinction not having an attractive profile neither for residents nor for local businesses. Based on the mayor’s personal interests and skills a development plan was developed, entitled “Green Road” involving a variety of developments and especially related to renewable energy.

BSIM: The municipality created a strong non-governmental organisational support (Foundation for the Village, Tender management office) to develop local projects (incl. renewable ones). Key stakeholders are businesses (mostly from the transportation sector) which were attracted by financial/tax reductions of the village to create a financial basis for development. This business settlement resulted from bilateral agreements, i.e. negotiations between the municipality and each new potential enterprise, which is offered (or at least used to be offered) reduced taxes and

7. <https://www.pass-renovation.hautsdefrance.fr/>

8. <http://www.nagypali.hu/>

asked for giving something back to the village in some ways as e.g. investing. Some businesses got also involved in the life of the village in terms of sponsorships, investments, social networks, events, sharing ideas. This business model has a strong local scope with long-term innovative changes for the village (beyond political interests).

ENCI: The municipality involves citizens from the very beginning of the development planning process by giving them the opportunity to express their ideas, problems and suggestions in different forums and platforms. Citizens are involved in the implementation process and are partners in various actions to promote environmental awareness. According to the mayor, everyone needs to be listened to but then it is one´s own responsibility to decide what to act upon.

2.4.2 Organisation-based cases

Shared Energy - Energie Partagée

Energie Partagée⁹ is a movement dedicated to citizen-based energy created in 2008 through the mobilisation of local citizen-led organisations working in the field of renewable energy, the social and solidarity economy, and participatory local development. The case unites citizens´ organisations and actors that are engaged for and support a citizen-based energy transition, particularly local authorities and citizens´ energy communities.

BSIM: The purpose of the model is to build a strong ecosystem favourable to citizen-energy projects by supporting and financing initiatives that are in line with the Shared energy Charter. This ecosystem encompasses different types of partners including: 1) Advocacy coalition 2) Local authorities; 3) Regional support networks; 4) Funding partnerships; 5) Private partnerships with companies for joint actions. In addition, Énergie Partagée´s Investissement is the first innovative financial tool for citizen investment in the production of renewable energy and energy efficiency in France, called the ‘Société en Commandite par actions Énergie Partagée Investissement (EPI)’. The fund collects savings from citizens and invests them in equity in the capital of citizen renewable energy project companies. This tool enables project promoters and regional stakeholders to raise the capital required to launch a project and to maintain citizen control of it. This equity investment allows the project to be consolidated over time and makes it easier to obtain bank financing.

ENCI: Energy Partagée is open to everyone and reducing energy poverty is an objective of renewable energy citizen projects in the Charter. For marginalised communities, Energie Partagée´s investment tool offers shares for €10 to make shareholding more accessible (the price of one share is otherwise €100). Democratic governance is one of the criteria that a citizen renewable energy project must fulfil to be supported and/or part of the Energie Partagée movement and labelled as a citizens´ project (Energie Partagée Charter, 2010).

9. <https://energie-partagee.org/>

Solocal Energy

Solocal energy¹⁰ is a non-profit organisation (association) which involves and directly empowers citizens at the local scale through three pillars: balcony power plants, DIY groups for PV plant installations and climate neighbourhood circles. Core values of solidarity, justice, sustainability and personal responsibility are an important part of the association model. In the initiative's vision, solar energy is central to the energy transition in cities, representing the most important building block for a decentralised energy transition in cities and enabling solidarity-based economy strongly oriented towards the needs of the people.

BSIM: Solocal's business model focuses on the balcony PV plants pillar as a source of income and lever to empower citizens and communities from the bottom-up, while also financing the development of the two other pillars. Decisive for the case's model are its networking activities which contribute to anchor the case in social entrepreneurship dedicated to DIY and energy literacy, and local/regional partnerships (incl. Kassel municipality) to establish its legitimacy at the local level. The case has however a challenge with its 'hybrid status'. Though a non-profit organisation, it also has an economic activity as a source of incomes to sustain – through the installation of balcony PV plants. The legal form of an association that does also “sell” balcony power plants is therefore facing a constant uncertainty: that of getting its associative status removed because of its economic activity. The legal form of the case thus reflects a strong socio-economic choice i.e., making the organisation belong to the community rather than a few individuals.

ENCI: Membership is open to all, with various possibilities according to the time and financial resources of the members. Therefore, financial capacities are taken into account by the association, which adapts its offers accordingly, either for the membership or for the installation of balcony PV plants. The basic democratic principles applicable to associations are guiding decision-making processes, in which each member has one vote.

Hydro Electricity Ourthe and Sambre¹¹

HOSe is a cooperative company and is the result of an extensive collaboration between ten RESCOOP cooperatives. HOSe is operating several hydro-powerplants on the Ourthe and Sambre rivers, on the lead of Emissions Zéro cooperative and the private shareholder (Hydro-B) who is providing technical expertise. It is therefore a 'hybrid case' relying on an innovative organisational form: a cooperative of cooperatives and a private company. The HOSe has a commitment to renewable energy and sustainability, considering hydroelectricity as a creative nature-based solution and the way it reappropriated this energy technology brings the company quite close (qua business model and social innovation model) to the cooperatives.

BSIM: HOSe is a SCRL (*Société Coopérative à Responsabilité Limitée* - cooperative company with limited liability), composed of 50% cooperatives (with more than 15,000 citizens shareholders) and a 50% share of the enterprise Hydro-B. The cooperative company with 50% public

10. <https://www.solocal-energy.de/>

11. <https://hesbenergie.be/nos-projets/hydroelectricite-ourthe-et-sambre/>

shareholding has been set up to develop and operate the new hydroelectric power stations. HOSe has been set up as an institutionally hybrid collaboration. It is a cooperative-of-cooperatives, but also includes a private sector partner (Hydro-B). The participation of the latter introduces profit, or return-on-investment. The model of HOSe works as follows: the electricity produced is sold to a green supplier, with a marked preference for [COCITER](#) (a supplier that already provides households with electricity produced by 12 citizen cooperatives - notably wind and photovoltaic). Thanks to this hydroelectric project, COCITER is able to supplement its sources of green electricity production throughout the year.

ENCI: HOSe has a consensual decision-making and trusting relationships among all partners. The cooperative model and the shared commitment to environmental gains and societal surplus, indicates the commitments of the case to equity and justice. The importance of local ties follows from the commitment to horizontal, democratic and consensual decision-making, which is an explicit objective of the associated cooperatives. The commercial partners do not pursue this business model/social innovation model actively, but they have embraced it.

TreeDependent

The TreeDependent¹² programme is a service provided by the GreenDependent Institute (GDI), a non-profit, public benefit ltd. The programme has multiple goals including: 1) awareness raising about environmentally conscious lifestyles; 2) carbon footprint calculation and compensation by planting trees and 3) to connect the involved participants. GDI is managing and disseminating activities, including technical help to develop the calculator for measuring a company's carbon footprint. TreeDependent has developed a socially aware and ecological carbon compensation tool.

BSIM: The purpose of the case's model is the development of a fair and sustainable carbon compensation tool that contributes to raise awareness and reduce carbon footprint of individual or collectives in events and transport uses. TreeDependent's key partner is the Business Council for Sustainable Development in Hungary. The Council actively communicates their efforts, including organising responsible low-carbon events in the framework of the TreeDependent programme. TreeDependent's economic activities include: 1) Clients - organisations or individuals/ communities; 2) Following needs assessment, a contract is drawn up; 3) A report is drawn up by the TreeDependent team documenting both the footprint and the planting process; 4) The clients pay for the services. The income supports both the "fairy garden" and the TreeDependent programme, both directly, and more indirectly the schools and non-profit organisations who receive the trees. Although the case grew over time especially by developing the carbon compensation tool, there is a continuous need to increase the clientele to help self-sustain the programme,

ENCI: TreeDependent is fully open to individuals and collectives/communities and follows socially aware pricing of services. Apart from the environmental aspect, it pays special attention to the people/collectives in need – for example adjusts the price accordingly.

12. <https://intezet.greendependent.org/hu/TreeDependent>

Naturstrom AG

Naturstrom AG was created in 1998 by members of environmental and renewable energy associations (BUND, NABU, BWE, EUROSOLAR). In 1999, it entered the newly liberalised energy market as one of the first independent green electricity trading companies in Germany. Naturstrom AG aims to provide a 'clean, safe and economic' energy supply on the basis of renewable energies. More than 320,000 households, companies, and associations are using its energy products, which are focused on the areas of electricity, heating and mobility and include energy delivery, energy production, energy infrastructure and decentralised energy supply. The case follows a holistic approach with a focus on both social and environmental values. Global South energy issues are also integrated, with many philanthropic projects (e.g. solar power plant for a clinic in Gambia).

BSIM: From its start as a green electricity supplier, Naturstrom has continuously expanded its business activities to become an innovative group of companies composed of the joint stock company Naturstrom AG and two subsidiary companies: NaturStrom XL GmbH to supply bundled and commercial customers and NaturStromTrading GmbH to market green electricity according to the market premium model. The share capital of Naturstrom AG amounts to 30.5 million Euros and is divided into 2,440,000 registered shares. The Naturstrom AG share is not listed on a stock exchange. Key stakeholders of the case are the ecoeco AG which has the largest share and small stakeholders that hold 51% of the company. This organisation set-up was taken deliberately, because Naturstrom does not only follow financial goals but also goals oriented towards sustainability and the common good.

ENCI: Citizens can, as employees or outsiders, be stakeholders of the company and in this way take part in the internal decision-making, according to their shares of the company. Citizens, communities, companies that are cooperating with Naturstrom on energy projects/plants have voting rights as well. Furthermore, Naturstrom contributes to various forms of ENCI through its green electricity supply and its various projects (RES power plants, tenant electricity, mobility solutions, etc.)

National Association of Active Residents (Landelijk Samenwerkingsverband Actieve Bewoners - LSA)¹³

The National Association of Active Residents (LSA) was founded in 1985 as a bottom-up, local and neighbourhood development and national network foundation for active resident groups. LSA is working with different types of groups, from residents' businesses to healthcare initiatives and from energy cooperatives to neighbourhood vegetable gardens. Energy transition is also seen within LSA as having a major impact on local communities and towards that end, LSA stands for a resident-driven energy transition by organising local, regional and national workshops, information evenings, trainings for community groups that want to start a project related to inclusive energy transition in their neighbourhood. LSA is also employing energy coaches to help people apply for subsidies, handing-out energy saving products and energy saving advice.

13. <https://www.lsabewoners.nl/>

BSIM: LSA is an NPO (not-for-profit organisation) with a strong collaborative structure, through its '[Participation Coalition](#)', which enables easier access to resources, funding, sharing knowledge and to have a 'bigger voice' in advocacy and lobbying for a resident-driven energy transition. Decisive to the case's model is the multiplicity of partnerships with about 250 different organisations across the Netherlands. LSA's model self-sustains over time thanks to its public funding structure, since it is mainly funded by the Dutch government, but it is independent in its activities. In addition, they get contributions, donations, and funds/grants from various organisations from national (equity) funds. LSA also have paid clients including municipalities, knowledge institutes, private organisations and they receive membership contributions.

ENCI: LSA considers energy transition as a social, justice and collective task, which requires resident participation. To that end in 2018, LSA published a roadmap towards energy transition to inform about its activities and in 2019, they joined forces with the Participation Coalition to influence national energy policy in the Netherlands aiming towards 'a socially supported and nature-inclusive energy transition, in which residents work together with public authorities and market parties'. In the Netherlands, many municipalities are working with neighborhood groups towards heat-transition visions to disconnect from natural gas till 2030 ([NPLW](#), National Local Heat Programme). In this context many residents' groups need to develop a collective and cooperative heat within their own energy neighborhood plan. LSA is supporting and providing guidance to resident's initiatives in developing tailor-made solutions on self-managed heat sources. LSA also helps neighbourhood heat initiatives to collaborate with municipalities as there are not yet existing democratic policy instruments (for self-managed initiatives with represented democracy) that offer action perspectives for both municipalities and initiatives.

2.4.3 Community-based cases

Energy Communities Tipperary Cooperative (ECTC)¹⁴

ECTC is a cooperative where the members are not individuals but community groups, representing a certain community/area in the wider Tipperary region. ECTC is made up of 15 local communities in County Tipperary, which themselves are represented by local community councils and development association. Member communities need to set up a '*Sustainable Energy Community*' (SEC) through the Sustainable Energy Authority of Ireland (SEAI) to get funding under the Sustainable Community grants scheme.

BSIM: ECTC's model purpose is to enable communities in Tipperary and surrounding areas to create local employment and community benefit through reducing their carbon footprint and generating community-owned energy. It helps member groups to develop a vision of a community-run energy transition, which benefits communities, creates warmer, healthier homes while saving homeowners money, helps tackle climate change, and helps create new employment in a post-Covid world. A strong support network of partners has been crucial for the development of the case. These include, a) the Tipperary Energy Agency and b) North Tipperary Development

14. <https://energycommunitiestipp.ie/>

Company which provided essential start-up support for ECTC in the early stages, c) SEAI and Just Transition Fund as they provide consistent financial support schemes around which the main work of the case is designed. ECTC's economic model has been to use economies of scale when leverage funding under different governmental retrofit programs (e.g. Better Energy Communities scheme, Just Transition fund) to support households in member communities. This concerns finding contractors and organising financing for several houses together instead of doing this for each house individually.

ENCI: The cooperative consists of local communities, which themselves are represented by local community councils or development associations. Decisions are made on a consensual basis and not on a majority vote principle. ECTC has gained legitimacy through its expertise and working "on the ground" with local communities/groups and has become a trusted point of contact for the Sustainable Energy Authority of Ireland (SEAI) for questions of community engagement in energy related governance.

3 Strategies for scaling and advancing ENCI

The various BSIMs deployed in the exemplary cases described in this report illustrate possible pathways for advancing ENCI by scaling or amplifying these successful models in other contexts. However, as often underlined in the literature on SI (Westley and Antadze 2010; Moore, Riddell and Vocis 2015; Lam 2020), beyond the variety of their denominations – scaling, amplification, etc.¹⁵, such processes are far from being self-evident ways to scale phenomena up and out to the mainstream. In this section we address the challenges associated with the scalability of BSIMs for advancing ENCI to sketch some possible national strategies based on our various clusters of initiatives.

3.1 Considerations on the challenging scalability of BSIMs for advancing ENCI

The BSIMs highlighted in this report have been identified as salient "good practice" cases, that is initiatives that proved to be particularly fruitful to advance ENCI in a specific context. Addressing the scaling of ENCI thus raises a first core issue: does the scaling of BSIMs as adopted in particular initiatives necessarily contribute to the scaling of ENCI? The analysed cases are in general terms supporting the development of ENCI, but in many of them, ENCI and ENCI features (see Section 1)

15. The abundant literature that attempts to address the challenges of spreading transition initiatives or sustainable innovation provides multiple views and refinements on these processes of scalation, sometimes also called amplification (Lam 2020). Our purpose here is not to add another contribution to this debate but to offer a pragmatic contribution to the possible pathways to advance ENCI alongside energy transition initiatives. We made the choice here to follow Moore and all (2015) model of scaling up, scaling out and scaling deep, since it provides a shared basic understanding that seems to suit to the specificity of ENCI and of its diffusion, though taking into account some refinements brought by the literature.

do not represent the core focus of the initiative, which is mainly on advancing the energy transition and climate mitigation. Within our “ENCI cases”, ENCI can often be seen as a property, a side effect or a positive externality of the initiative which could get lost in the replication or translation of the case in another context. Therefore, any form of scaling of those cases would undoubtedly contribute to the energy transition, yet the contribution to the advancement of ENCI remains uncertain.

This issue is underlined in Moore, Riddell and Vocis (2015) in their description of the two “scaling out” strategies, i.e. deliberate replication or dissemination principles for spreading social innovations. The authors point out the limits of those approaches, related to the minimum specifications and core principles required to protect the integrity of the model to be replicated/disseminated, and the difficulty of any effective translation of a successful model in another context. The statement that “a potential drawback of this approach is the intensive work involved in translating an approach in numerous different contexts, when there is no specific ‘product’ to simply adopt” (*Ibid.*) is particularly relevant for a phenomenon such as energy citizenship, which can hardly be assimilated to a “product” or even to an intended direct output of any kinds of SI. And indeed, though some very successful replications of some SI occur e.g. in energy communities/cooperatives, urban gardening, etc. (Manzini 2014; Westley and Antadze 2010) some gaps may rapidly emerge from any attempt to replicate, transfer or adapt (Weber et al. 2014) any ENCI case, especially if the format and the core principles cannot be adapted straightforward to a new context of implementation.

This remark is relevant and should be considered especially for the publicly-run BSIMs, since they show a lower degree of citizen involvement and control than the other good practice cases (see Debourdeau and Markantoni 2023). Whether in Hauts de France Pass renovation or in the Nagypáli cases, the initiatives are still top-down ones, in which a dichotomy is built up between one set of actors that are governed by another (Shove and Walker 2010). More generally, the BSIMs seldomly contribute to the advancement of ENCI on their own, unless ENCI is a key part of the core values that give shape to the BSIM. Similarly, the cooperative model does not in itself convey a high degree of citizen commitment, especially within hybrid configurations. Just like in publicly-run BSIMs, the citizen control seems to be limited, notably to financial and/or consultative modes of participation that remain shallow forms of commitment if not associated with changing practices and values. At the same time, the development of energy communities represents an essential potential for advancing active forms of ENCI alongside the energy transition (Vernay et al. 2023), which would however require improvements in the community models and practices in terms of financial accessibility, inclusiveness and citizen involvement beyond financial participation, e.g. by shaping the governance model so that power is in the hands of its members. In that respect, cases such as Bürger Energie Berlin (BEB) or Energie Partagée are somehow exemplary considering both their willingness to make the participation to the cooperative affordable even for the most vulnerable households, without any geographic boundaries, and the politicised side of the initiative towards a citizen participation in the ownership and management of the Berlin power grid for the former and in the whole energy system for the latter.

Like —and even more than—social innovations, ENCI can hardly be promoted through the simple replication or dissemination processes of BSIMs of specific cases. More, if SI can be envisioned in a

non-normative (Kaufmann et al. 2022) and non-teleological (Pel et al. 2020) perspective, the added focus on ENCI embeds necessarily normative ingredients in terms of citizen’s engagement and decision-making, energy democracy and environmental sustainability. Questioning further the scalability ENCI as conveyed by BSIMs thus requires further elaboration. To that end, the three forms of scaling described by Moore et al. (2015): *scale out*, *scale up* and *scale deep*, which are meant to be mixed in the process of spreading SI (Figure 2), are envisioned as possible paths for scaling of ENCI associated with ENCI initiatives according to their specific BSIMs.

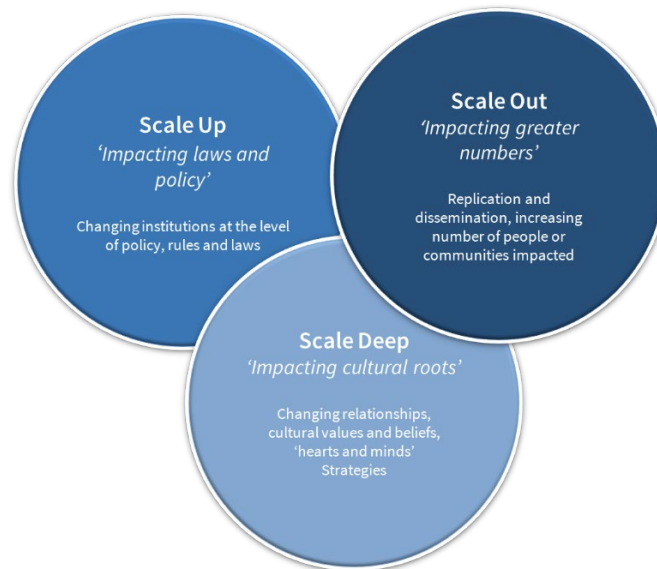


Figure 3: Scaling out, scaling up and scaling deep for social innovation (Moore, Riddell, Vocisano 2015)

Our good practice cases illustrate all three forms of scalability and the ways they have been part of spreading ENCI through the cases (Figure 3). Referring to the ability to reach another scale within the MLP (Van den Bosch and Rotmans, 2008) or, in other words institutional, political and legal changes (Moore, Riddell and Vocis 2015), *scaling up* processes of particular interest can for instance be found in the National association of active residents (LSA) and Energy community Tipperary cooperative (ECTC) cases: LSA progressively involved such a large number of citizens that the case is influencing policies [e.g., LSA played a key role in the [‘Strengthening the Decentralised Participation Act’](#) in the Netherlands passed in 2022 by lobbying and providing evidence from other countries such as Scotland – a pioneer in local democracy and decentralisation, ECTC is consulted by national governments and departments for input when developing new regulation as a result of their expertise in the area]. In a rather different way, centred on the personality of its frontrunner Mayor, Nagypáli highlights that a strong political commitment is necessary to induce transformative changes.

By enhancing the number of concerned people through dissemination or replication (Moore et al. 2015, Lam et al. 2020), *scaling out* processes are encountered more frequently among our short list of cases. For ECTC it appears for instance a key process for the case, since the model provided by ECTC is being replicated in more and more communities in the Tipperary region (and therefore, the ECTC scale up can also be seen as a spillover from the scale out process). Similarly, the Hauts

de France Pass Renovation has been replicated in other French regions, while also raising interests abroad e.g., within the ECTC. Another remarkable case is that of Naturstrom, which has scaled out a lot based on diversifying its business model, while remaining very political. Those four cases underline that the scale out and scale up processes are operated more easily for cases that benefit from a high institutional support, either because they are publicly-run or -supported initiatives (LSA or Hauts de France Pass renovation), or because they can be considered as very institutionalised cases (ECTC, Naturstrom), thus having the capacity to influence both the framing conditions and the diffusion of their model. For cases that do not operate with similar massive means as the four previous ones, the scaling out approach consists more in envisioning a dissemination of their core innovation through replication/adaptation processes that would convey their innovative BSIMs and the associated core values and tools. Examples are the carbon footprint compensation within the TreeDependent case, which replication is envisioned in India and in the UK, or as the Solocal energy case, whose local anchorage for empowering people towards RES and climate-change issues could indeed be replicated or translated in the various contexts in which balcony power plants are not forbidden.

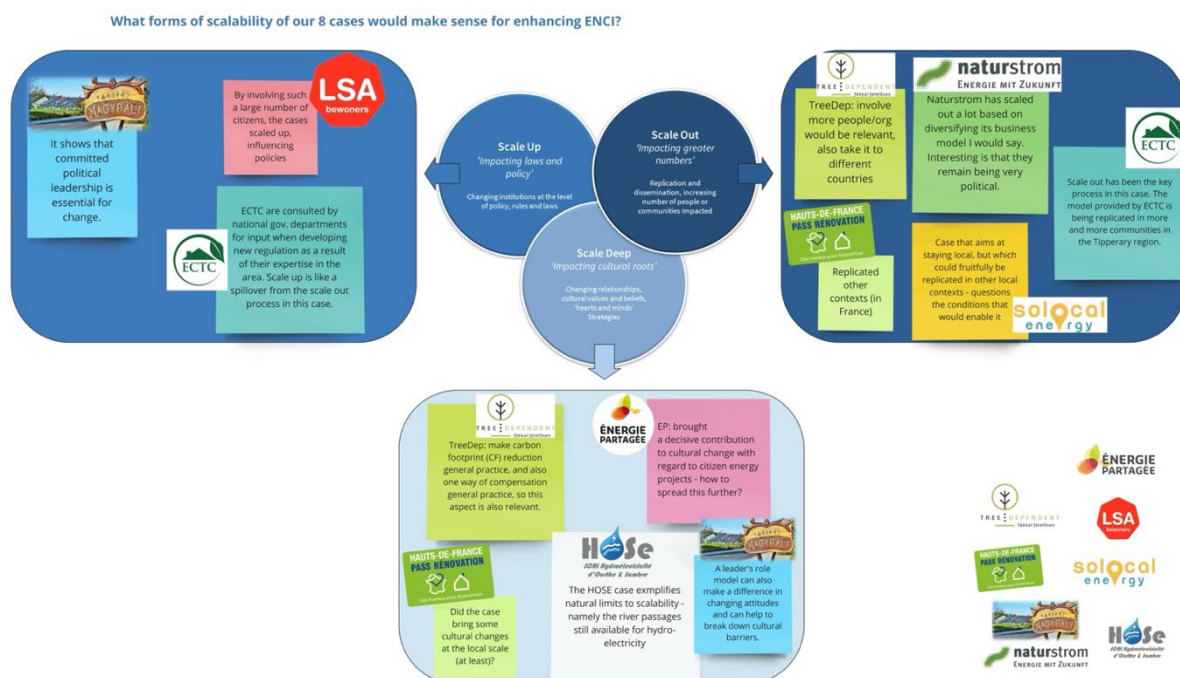


Figure 4: Scaling out, scaling up and scaling deep activities of the nine “good practice” ENCI cases

Related to cultural values, social norms, beliefs, mindsets, perceptions, practices and routines, the *scaling deep* processes are not the easiest to identify, since they often raise more questions, such as for the Hauts de France Pass Renovation or the Shared energy cases: Did the initiative bring some cultural change at the local scale? How to spread further the cultural change initiated by Shared energy regarding citizens renewable energy projects? Role model and generalisation of tools such as carbon footprint can also be considered as part of changes in mindsets, as in the Nagypáli and TreeDependent cases. Therefore, *scaling deep* represents both a major challenge and a key form of scaling for advancing ENCI that requires to be specifically addressed despite the lack of literature on this issue (Lam et al. 2020). Whether underlining the spread of big cultural

ideas or the intensive share of knowledge and new practices (Moore et al. 2015), or the changes of values within a (local) constellation of culture, or practices and structures that fulfils a societal need in a fundamental different way (Van den Bosch and Rotmans 2008), the process of scaling deep involves highly complex entanglement of cultural features. This entanglement of mindsets, perceptions, beliefs, practices, social norms, knowledges, competences, meanings and narratives cannot be accounted through a linear causal chain, since all those features reshape and reframe each other constantly, through quasi-imperceptible adjustments rather than radical breakthroughs.

Furthermore, scaling deep occurs within, beside and beyond ENCI cases or initiatives, in the sense that initiatives can have an extended sphere of influence that may overcome limits that are inherent to the case itself. The HOSe case illustrates this quite exemplarily. This initiative focuses on the cooperative owning and operating of hydropower plants on the Ourthe and Sambre rivers in Belgium, so that its potential for activating and spreading ENCI – here through about 17,000 shareholders - is somehow finite because of the physical-geographic potential for this RES (i.e. the finite number of hydropower plants that might be put on those two rivers). However, the case also contributes to advancing ENCI through enhancing energy literacy, particularly through initiative such as organising visits by school classes to hydropower plants to learn about its collective ownership, as well as the ways HOSe worked on making the plants more environmentally sustainable, caring for the fish species and water quality. In a rather different way, Solocal energy exemplifies a case illustration the scaling deep mode , by addressing empowerment, energy-justice, literacy and democracy and environmental sustainability issues in its core activities, especially by enabling the people to install themselves their balcony PV plants (the costs are adapted according to their financial resources), but also through the DIY building-groups for solar plants and neighbourhood climate circles to tackle climate and energy challenges at the local scale in a more holistic way. The two members of the case who were interviewed underline clearly the scaling deep approach of the Solocal energy initiative:

Member1: The self-build group, that's the idea of SoLocal, is that many or several people who are interested in putting these solar panels on the roof help each other. So in our case there were three, that is, three roofs and three lots and we then helped each other, so to speak. SoLocal organised, planned, organised and guided us and we helped each other, that is, it was always a good weekend with a few days before or after, depending on how complex it was. And the person or persons whose roof was on, also took care of the catering for the other participants. And beyond the pure self-build members, there were also many helpers from outside. So SoLocal has, I think, networks through the university and circle of friends that there were just many other people involved.

Member2: First of all, we have our own PV system on the roof at home with the family, of course, and the good feeling of generating and using renewable energy. And we also feed some into the grid so that others can benefit from it as well. And, well, what I found great is that I could bring in my knowledge and my work performance to support the others in their projects, well, we have a community, a self-construction community means yes, the others help with me and I help the others. And, yes, that has something to do with the common good, that has something to do with cooperation, you have to

have a corresponding attitude to it, and that is not only present in me, but in the family, and that's why we looked at it closely and then actually decided for that very reason. And the third aspect is that unfortunately I couldn't keep it a secret here at the company where I work. So, for example, there was an interview with the local radio station here, i.e. with Hessischer Rundfunk specifically here in Kassel, and after the interview it was also published on the website of Hessischer Rundfunk as information and as a podcast, and since then I'm constantly asked about it in the company and can just pass on the great idea as a multiplier.

Scaling deep, as it appears within these two interviews, relies on several key aspects: learning and sharing of know-how processes (Van den Bosch and Rotmans 2008) engaged within a group or a community that also create a sense of common good by helping each other to install their own PV plant on their rooftop, the critical importance of materialising (Ryghaug 2018; Marres 2012) their energy citizenship by making it tangible and graspable (“the good feeling of generating and using renewable energy”), and last but not least the role of the multipliers in spreading new ideas and values (Moore et al. 2015).

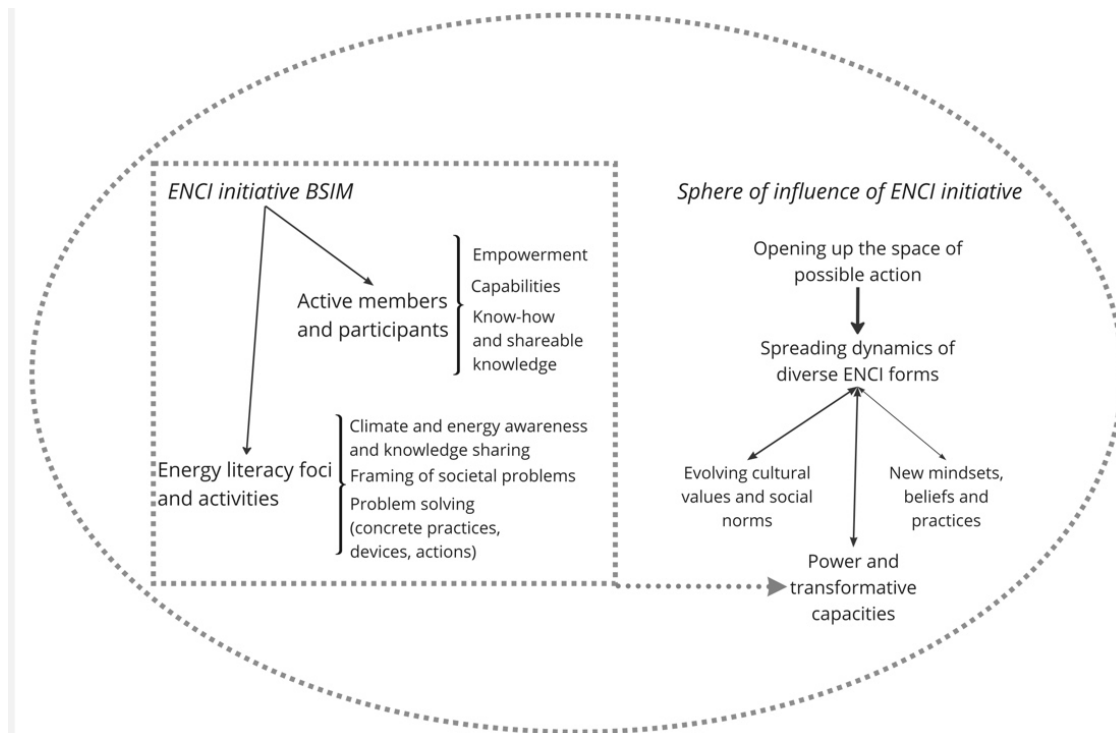


Figure 5: Scaling deep of an ENCI case

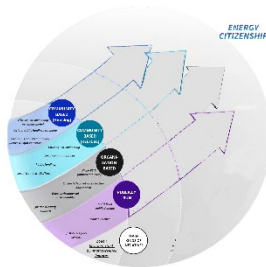
The advancement of ENCI as illustrated in these most viable BSIMs thus relies basically on all three modes of scaling: scaling out, scaling up, and scaling deep, even though the latter can be considered of a critical importance for initiatives to enhance energy citizenship. However, as a normative ideal, ENCI can hardly be promoted through the simple scaling processes of the BSIMs of specific cases. Therefore, the possible strategies for advancing ENCI have been further elaborated here in relation to the clusters and subclusters described in section 2, since the clustering aims at building bridges between BSIMs and specific factors and context conditions impacting ENCI. In the next subsection, the scaling approach is recombined with the clusters and

subclusters of initiatives described previously to allow the design of strategies that can be translated and developed at the national level according to the specific context conditions to further develop the diverse existing and potential ENCI forms.

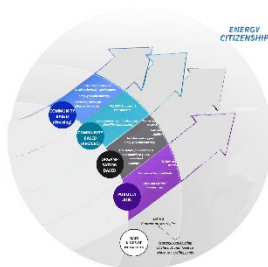
3.2 National strategies for advancing ENCI: overview

The following strategies for advancing ENCI as synthesised in Figure 6 have been elaborated to be relevant to the 9 partner countries, yet the interpretation and operationalisation of these results at a national level are highly context-dependent and require cautious translation/adaptation to the political, economic, social, cultural and legal specificity of each country, as underlined in the national PESTEL analyses of the 9 partner countries (D5.2, Hadjinjak et al., 2023).

To that end, the elaboration of this overview of strategies for advancing ENCI is based on the analysis of the most viable BSIMs clusters and subclusters¹⁶, of which they present:

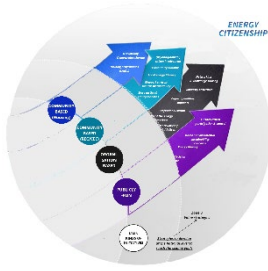


- In the lower part of each arrow (zone 1), the conditions for the emergence and sustainability of BSIMs promoting ENCI are presented, highlighting the specific context-settings and initiative-related features that characterise each cluster. This represents the “bottom line” for the potential emergence of cases or initiatives that are supporting ENCI for each cluster, mixing the necessary context conditions and the core components of ENCI that are considered by the initiatives belonging to the cluster.

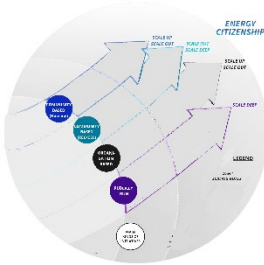


- In the middle part of each arrow (zone 2) are the contextual strategies that need to be developed for enabling initiatives of each cluster to further advance elements of ENCI. In this zone the context conditions that need to be improved/upgraded to foster, deepen or spread ENCI are presented alongside the development of initiatives that belong to this cluster.

¹⁶ This contribution to the elaboration of national strategies based on BSIMs does not claim for any kind of exhaustivity but only to be part of possible strategies aimed at advancing ENCI at the national level. Indeed, EU countries do not have (yet) developed ENCI strategies. If strategies for community energy (corresponding to the compulsory translation of EU legislation) could be seen as part of it, no holistic ENCI strategy does currently exist in any EU country. These pathways based on ENCI can therefore be seen as a contribution to possible future ENCI strategy elaboration. Such strategies could for instance be part of National Energy and CLimate Plans, which entail a public participation part, which could thus be enhanced, considering that these currently developed strategies do not show very good results yet in terms of participation - see here: <https://caneurope.org/new-report-calls-for-drastic-improvement-of-europes-national-energy-and-climate-plans/>



- In the upper part of the arrow (zone 3), the strategies regarding the values associated with ENCI that have to be enhanced are shown. This zone encompasses values that are (still) lacking to meet all the aspects of our ENCI definition (citizen´s engagement and control, energy democracy and justice, environmental sustainability) and possible actions to be undertaken to that end (such as networking and knowledge sharing or further citizen participation and control).



- Above the arrows (zone 4) the main scaling goals to be sought through the strategies to advance ENCI are underlined. E.g. sustainable housing communities need to scale up (change in political and legal framings) and to scale out (i.e. be disseminated and replicated) to contribute to ENCI advancement; publicly-run initiatives on the contrary basically need to scale deep to further contribute to advance ENCI.

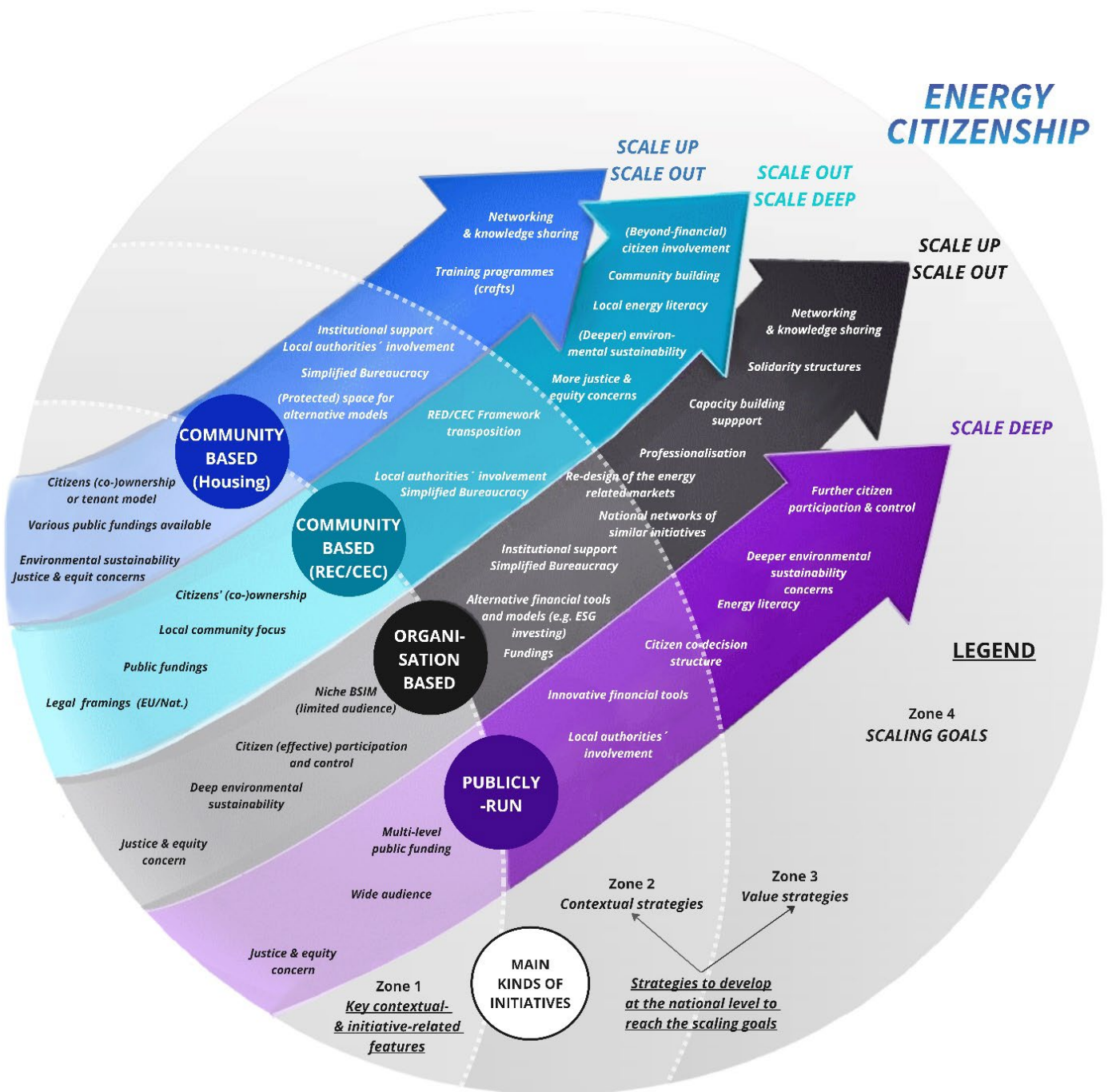


Figure 6: Parallel strategies for advancing ENCI by BSIMs clusters

The **community-based housing cluster**, which refers mostly to sustainable housing communities presenting strong environmental and justice concerns, often depends on the availability of public funding for its realisation and of the space of possibilities that is allowed to emerging alternative models of co-ownership or tenement. On the one hand, strategies to enhance the forms of ENCI embedded within such BSIMs consist of institutional support, notably in terms of local authorities' involvement (for the plot, the building construction or renovation, etc.) as well as removal of bureaucratic obstacles. The creation of a 'protected space' (Smith and Raven 2012) enabling those kinds of models to emerge represents also a scaling up process of critical

importance¹⁷. On the other hand, value strategies could consist of training programmes (including for craftsmen) as well as networking and knowledge sharing to allow such models to scale out.

The **community-based renewable and efficiency cluster** (cooperatives and citizen energy communities) is supported by several key drivers, such as the REC/CEC framework at the EU level, completed by available public funding in the majority of the countries. Citizen co-ownership plays a key role in the corresponding initiatives, which also tend to be highly community centred (Warlenius and Nettelbladt 2023) – resulting in the setting of new geographical boundaries that determine who can belong to the community and who cannot. Regarding this rather well-spread cluster, contextual strategies are still needed in many EU countries regarding the transposition of the EU directives, the bureaucratic hurdles and the lack of local authorities' involvement, which are still constraining the emergence of such initiatives, especially when they represent a high investment compared to the financial resources of the community members. The value strategies to advance ENCI are of particular importance for this cluster, since it is part of the EU energy transition roadmap. Value strategies to enhance ENCI could consist in the intensification of environmental sustainability and justice and equity concerns¹⁸, as well as the development of energy literacy within those initiatives and more generally forms of involvement that are going beyond the mere financial and/or consultative participation of citizens.¹⁹ Especially for initiatives whose activities and membership take place in a strictly defined geographic perimeter, the anchorage within a specific community could be further developed and contribute to a wider community and capacity building and concomitantly to scaling deep ENCI.

The **organisation-based cluster** is the most diverse one in comparison to the others, yet some common features can be delineated. This cluster entails many “niche” initiatives (independent of their scale of activity), characterised mostly by a high level of citizen participation and control, and driven by environmental and justice/equity concerns. Like the two previous clusters, this cluster requires more institutional support and simplified bureaucracy to contribute further to ENCI. On the one hand, contextual strategies to enhance the contribution of those initiatives to ENCI should promote alternative financial tools and funding models within a larger re-design of the energy markets, making them more accessible to niche ´s newcomers. On the other hand, value strategies could consist in supporting capacities and capabilities for the niche emergence, such as capacity building support, professionalisation, solidarity structures and networking and knowledge

17. The Berlin Government has, for example, a regulation that favours housing communities ("Baugruppen") in acquiring community-owned land to construct houses thereby preventing that the land is always giving to those investors that offer most money.

18. One could think of a percentage of "social shares" (somehow like social housing) that each cooperative should include to increase its inclusiveness and enable vulnerable people to come on board. As of the environmental sustainability, an open-source toolbox for the calculation of non-emitted CO2 could for instance be made available for all energy communities.

19. First, this could be achieved through a clearer definition of energy communities going beyond a merely financial engagement, notably to account for the recent evolution of the role devoted to REC and CEC in EU texts, aimed at contributing to tackle energy poverty. The new German definition of "Energiegesellschaften", in that it ensures the citizens participation in the cooperative, can somehow be considered as a first step towards an involvement beyond financial participation. Bürgerenergie Berlin and one of our sister project are (or have been) working together on those justice and equity issues, which could also result in interesting propositions for upscaling it beyond the initiatives themselves - thus also enacting the contribution of EC to tackle energy poverty among other inclusiveness issues...

sharing²⁰. Those strategies could help to scale up and scale out the initiatives that compose this cluster, and therefore contribute to further advance ENCI.

The **publicly-run cluster** encompasses initiatives which are often open to a large audience (which is made possible by the volume of public fundings involved) and often have equity and justice concerns. Contextual strategies to enhance ENCI within this cluster would consist in increasing public authorities' involvement, especially at the municipal level and in developing innovative financial tools (such as third-party financing). Yet, the strategies for advancing ENCI for this cluster could focus on scaling deep, notably by increasing citizen participation and control in the related initiatives – for instance by introducing citizens to co-decision structures. Further involvement in energy literacy and increased concerns for environmental sustainability are also value-related strategies that could contribute to decisively enhance the contribution of that kind of initiatives to advance ENCI.

4. Conclusion: Creating supportive wider ecosystems for social and business model innovations towards ENCI

The necessity to create supportive conditions for the emergence and development of BSIMs that contribute to energy citizenship is underlined in the literature (Hiteva and Sovacool 2017). The analysis of the viable BSIMs characterising ENCI initiatives presented within this report confirms this requirement while pointing out the conditions for scaling ENCI and the possible national strategies that come out of it for the main BSIMs clusters. Advancing ENCI could thus consist of **parallel strategies** that are tailored to each BSIM cluster and address the context-conditions and values that may enhance the contribution of those BSIMs to the scaling of ENCI. While keeping a strong focus on the advancement of ENCI within the BSIMs – and neither energy transition in general nor the sustainability of initiatives over time or any other issue -, the parallel strategies to be undertaken at the national (yet also local or regional) level could fruitfully contribute to advance and enhance ENCI. The various sorts of scaling proposed here are however only based on BSIMs clustering, and the scaling of ENCI is a matter of various approaches and perspectives (see the forthcoming D2.5), and that of BSIMs cannot be considered as sufficient. Yet the parallel strategies to advance ENCI with regard to BSIMs proposed in this deliverable could be fruitfully integrated into climate-energy policy frameworks that still lack considering ENCI, such as the National Climate and Energy strategies. Following the same logic, those BSIMs strategies could integrate ENCI strategies into municipal and regional climate and energy strategies, e.g. SECAPs, to which they could add the holistic way to advance ENCI this deliverable suggests.

20. Crossing context and value strategies, national networks of similar initiatives of this kind are very helpful, as in the case of solar DIY groups, the corporate supported agriculture (CSA), the urban gardening etc. Furthermore, if the national contact point has some funding (of the members) it can give advice to new initiatives regarding the set-up, dealing with bureaucracy, funding possibilities, etc.

The analysis presented here is however subject to various limitations. The research team did not discuss issues of scaling with the actors themselves and did not systematically determine the relevance and salience of contextual conditions for scaling deep, out and up. The transformative agency of ENCI and enabling factors were discussed in 5 workshops on transformative agency (the findings of which are described in [D4.4](#) - Kemp et al. 2023) and 9 knowledge exchange workshops.

The experiences of the twenty cases are thus not directly generalisable to other contexts, but the draw some possible pathways to advance ENCI according to the main forms of BSIMs in which ENCI is embedded. Overall, we believe that a transition to a more decentralised, sustainable and fair energy system requires a wide range of institutional changes on issues and these include:

- transparency and accountability requirements for energy generating companies,
- community engagement and public participation in energy system decisions,
- financial support for projects based on energy citizenships values and principles,
- education and capacity building,
- a greater attention to multiple value creation and the well-being of local communities,
- a more diverse membership of energy citizenship initiatives,
- collaborating and networking with government, business, and science,
- boundary work by intermediaries to facilitate such collaborations,
- the active involvement of government organisations at different levels,
- the diffusion of energy citizenship values and principles across society (especially in business),
- tools and metrics to measure a just energy transition,
- greater attention to opportunities afforded by smart grids
- and risks of deepening inequality because people with solar panels, electric cars and storage technologies can be expected to benefit from smart grids more than people without those assets.

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