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Table of Figures 4

Summary.....5

Chapter 1: Introduction 6

 1.0 Consolidating ENCI framework – towards ENCI dynamics..... 6

 1.1 Case study workshop and empirical proceedings 6

 1.2 Positioning..... 7

 1.3 Set-up 8

Chapter 2: Energy citizenship & transition dynamics.....10

 2.1 Synthesising across ENCI frameworks..... 10

 2.2 Transitions, the Multi-Level Perspective (MLP) 11

 2.3 ENCI transition dynamics: 5 key insights..... 13

Chapter 3: Between transformative ‘niche’ and reformative ‘regime’..... 15

 3.0 Introduction 15

 3.1 Empirical advances 16

 3.2 Conceptual advances 18

 3.3 Conclusions 21

Chapter 4: Ecosystems & intermediation 23

 4.0 Introduction 23

 4.1 Empirical advances 24

 4.2 Conceptual advances 27

 4.3 Conclusions 28

Chapter 5: Frontrunners, laggards & empowerment.....29

 5.0 Introduction 29

 5.1 Empirical advances 30

 5.2 Conceptual advances 34

 5.3 Conclusions 37

Chapter 6: ‘Landscape’ developments and context factors.....38

 6.0 Introduction 38

 6.1 Empirical advances 39

 6.2 Conceptual advances 41

 6.3 Conclusions 43

Chapter 7: ENCI futures through scaling and backlash45

 7.0 Introduction 45

 7.1 Empirical advances 46

 7.2 Conceptual advances 48

 7.3 Conclusions 50

Bibliography 52



Table of Figures

Figure 1: ENCI conceptual framework; Adapted from Pel et al. (2021) by Ariane Debourdeau	10
Figure 2: ENCI typology. (Debourdeau et al. 2021).....	11
Figure 3: In which phase of the energy transition are you?.....	12
Figure 4: Geels (2005): The Multi-Level Perspective (MLP) on transitions	13
Figure 5: ENCI dynamics in energy transition (adapted from Geels 2005)	14
Figure 6: ENCI Between transformative ‘niche’ and reformative ‘regime’ innovations.....	15
Figure 7: What do the actors involved in the case want to achieve in the first place (n= 596).....	16
Figure 8: Changes in the reformative/transformational outcome orientations over time.....	17
Figure 9: Changes in ideal-types in the N=40 case studies	18
Figure 10: ENCI ecosystems & Intermediation.....	23
Figure 11: Initiators of ENCI cases (ENCI initiatives) (Szóllóssy & Vadovics 2023).....	24
Figure 12: intermediation and intermediaries in the Loenen Energy case (NL)	25
Figure 13: Distribution of the intermediation/services provided by the intermediary actors in the analysis, by percentage (N34)	26
Figure 14: Distribution of the intermediation/services provided by the intermediary actors in the analysis, by percentage (N34)	27
Figure 15: Frontrunners, Laggards & Empowerment	29
Figure 16: Frontrunners and laggards in N=596 ENCI cases (Source: EnergyPROSPECTS 2023)	30
Figure 17: Laggard - frontrunner distinction (national level) according to a reformative - transformational data split.....	31
Figure 18: Laggard - frontrunner distinction (European level) according to a reformative - transformational data split.....	31
Figure 19: Collective empowerment model.....	35
Figure 20: ‘Landscape’ developments and PESTEL factors	38
Figure 21: Relative importance of PESTEL factors for ENCI. (Debourdeau et al. 2022: 90-92).....	40
Figure 22: ENCI futures through scaling and backlash.....	45
Figure 23: Scaling out, scaling up and scaling deep for social innovation (Moore et al. 2015)	46
Figure 24: Parallel strategies for advancing ENCI by BSIMs clusters (Debourdeau et al. 2023:27)	47

Summary

Deliverable D2.5 “Consolidated EnergyPROSPECTS Conceptual framework” forms the concluding synthesis of WP2. Based on external feedback, conceptual advances and the empirical insights developed in WP3, WP4 and WP5, the deliverable provides empirically informed and conceptually refined insights into ‘active’ energy citizenship, the associated broader range of citizenship, and the relevant empowerment processes and supportive conditions that shape it. We used the Multi-Level Perspective on Transitions (MLP) as an ordering framework for the presentation of empirical conceptual findings. The deliverable accordingly comprises 5 key transition dynamics that have been developed through conceptual and empirical insights in work packages 3-6, as well as work package 2 itself: 1) Niche-regime dynamics; 2) ecosystems & intermediation; 3) frontrunners, laggards & intermediation, 4) ‘landscape’ developments and context factors and 5) scaling & backlash. The subsequent deliverable D2.6 will present the consolidated framework in the form of a working paper.



Chapter 1: Introduction

This deliverable consolidates the conceptual work of the project. This is primarily a task of synthesis, i.e. of integrating the variety of empirical and conceptual findings that have been developed in the empirical and thematic analyses of work packages 2-6. This is done from a critical-reflective position which shuns essentialism. We are critical about labels and dichotomies, including the labels and dichotomies we used ourselves, which are used reflexively. This introduction presents the overall approach to the consolidation (section 1.0), a few reflections on an internal case study workshop (section 1.1), a positioning in the emerging energy citizenship literature (section 1.2), and a brief clarification of the working process.

1.0 Consolidating ENCI framework - towards ENCI dynamics

A consolidated ENCI framework, what should it contain and what can it contain? A starting point was the 7-fold distinction developed in Pel et al. (2021). This 7-fold distinction, disclosing a range of ENCI-forms ‘below the tip of the iceberg’, has subsequently been consolidated conceptually and empirically into an ENCI typology (Debourdeau et al. 2021). Elaborated into a journal article, this can be considered a ‘consolidated ENCI framework’.

Still, it remains an important project goal to elaborate and substantiate conceptual considerations into empirically informed insights on ENCI dynamics. As discussed in Pel et al. (in progress), this calls for critical, reflexive methodologies that take the complexity of the ENCI concept seriously.

The consolidated framework will therefore not take the form of a full-fledged explanatory theory – specifying critical conditions factors conducive to active/desirable ENCI and the underlying mechanisms. However, neither will it resign into the alternatives of conceptual abstraction and empiricism: The more ambitious aim is to establish a coherent set of theoretical elements, of specific ENCI dynamics (ENCI-related processes of change) that as such contribute to a more systematic and actionable ENCI understanding. The focus on dynamics also calls attention to the factors underlying those, such as an enabling environment, or the agency that outcomes can be attributed to - which often depends on intermediation work and resources being available. ENCI is related to dynamics with which it interacts, in co-shaping ways. It gives rise to partnerships, contestations and to material effects, which act as stepping stones and issues for reflection. By paying attention to coupled dynamics, we hope to give a better contextualised account of energy citizenship actions and its achievements.

1.1 Case study workshop and empirical proceedings

Involving substantial efforts in empirical mapping, case analysis and context analysis, our project has developed a considerable empirical basis. Theory-building from cases has



proven to be challenging, however. An internal case study workshop highlighted the strong context-sensitivity of ENCI case analyses, concerning both the specific form of examined ENCI and the prevailing national conditions. The case study workshop helped to disclose empirical diversity, yet systematic generalization has proven to be difficult.

On the other hand, the same exercise has also brought out the generative force of single-case studies. The N=40 cases did evoke various observations and conceptual reflections that call attention to various – more or less generic and context-transcending -ENCI dynamics.

Taken together, this internal case study has thus clarified the kinds of generic insights within reach. As will become evident in further chapters, our consolidated ENCI framework integrates a diversity of context-sensitive insights, including contrasting observations from different contexts.

1.2 Positioning

The consolidated framework is also developed to contribute to the emerging state-of-the-art of energy citizenship research. Ongoing research of our sister projects and recent scholarship indicate certain trends and apparent blind spots and research lacunae. Review and reflection have led to the following positioning of the EP conceptual framework:

Systems-oriented approach. A marked trend in ENCI discourse, scientific but also in policy and public discourse, is the consideration of ENCI in individualistic terms: Energy citizenship is considered as behaviour of individual citizens. This is quite intuitive, and it is in line with the crucial ENCI distinction between citizens and consumers. Such methodological and political individualism tends to neglect however how citizenship (and ENCI) refer to institutional arrangements as well. The EP framework takes ENCI therefore as an institutional phenomenon, i.e. as part of the broader institutional changes that define citizenship more generally. Such an approach also corresponds with understandings of citizenship more generally, which revolve around the relationship between individuals and a political community. Along a similar logic of going beyond individual perspectives, the EP framework focuses on the systemic significance of ENCI: It seeks to articulate – however difficult this is – the contexts in which it develops, and the potentials it has for systemic change and transitions. Through the specification of "energy", this system concept primarily refers to the energy system. However, this is not limited to configurations of energy generation and consumption but also includes aspects of governance and broader social-economic transformations along the lines of Kemp et al. (2022).

Critical approach. ENCI is often taken as a means, an instrument, towards certain goals (of energy democracy, of sustainable energy, of energy literacy). This is in line with the emancipatory, activist ideas that have informed the concept, and it rightly acknowledges the societal challenges that form the context and legitimization of our work. Still, as elaborated

in Pel et al. (2021) and discussed in several recent critical reflections on the ENCI concept, the instrumental means-end reasoning neglects the complexity of the concept. Instrumental understandings are at risk of undermining the very agency that the concept is meant to emphasise in the first place (Dunphy & Lennon 2023). When only the citizenship which serves a specific instrumental purpose is designated as ENCI, ENCI works with a narrow sense of citizenship – focused on duties rather than rights, as is common in ‘environmental citizenship’ discourse (Dobson & Valencia 2013). Instrumental understandings also tend to assume rather than investigate the desirable effects of ENCI. However, how emancipatory, transformative or desirable ENCI processes will turn out, depends on whether it helps to disclose, challenge, open the political contexts of energy poverty, energy democracy and energy inequalities. Our critical approach remains attentive to the fact that ENCI – underneath the generic, universal nature of the citizenship concept - exists in many variations: Desirable and undesirable, conservative¹ and progressive, reformative as well as transformative (Cf. Chapter 3 on the latter distinction).

Transition dynamics. ENCI scholarship remains overly conceptual. The meanings and possible misunderstandings of the complex concept have been dissected in several recent conceptual papers. Altogether this shows a gap between conceptual and empirical work – like the challenge encountered in EP proceedings. As indicated, the challenge is to move from conceptual and static considerations towards empirically informed insights on ENCI dynamics. A particular challenge is to move beyond any hopeful and loose considerations of ENCI as a ‘contribution to’ transitions, which bypass thorny questions about the kinds of changes/innovations, i.e. the processes, through which this might happen or not. Furthermore, considering ENCI in terms of its ‘contribution’ to transitions may neglect the aspect that ENCI, understood as an institutionally embedded phenomenon, may itself constitute a transition. This is evident in the changes in which individuals are understood and treated in the governmentality of the energy system. The ENCI concept questions the extent to which citizens can become part and have a say in an energy system that is traditionally monopolistic and capital-intensive, due to long-lasting centralised views. Investigating the energy system with ENCI lenses can deeply enrich our understanding of transition dynamics, precisely because it calls attention to these concrete processes of empowerment and governance shifts. Taking the issue of transition potentials seriously, the EP consolidated framework focuses therefore on transition dynamics. This involves energy and climate-related transition processes but also a broader range of citizenship-related transformations.

1.3 Set-up

¹ As underlined in critical innovation studies (Godin & Vinck 2017), one should be careful not to interpret ENCI too easily in innovation categories. ENCI arguably also comprises forms of civic involvement that have neither a reformative nor a transformative approach, but one that is not geared towards any kind of innovation. Many forms of ENCI work to conserve/maintain a situation, for instance anti-wind power movements, or voting/commenting in consultations against new energy legislation. ENCI comprises a considerable range of ‘restorative’ social innovations, in the terms of Pel & Kemp (2020).

The consolidated framework is developed through a modular set-up, using the already existing Multi-Level Perspective on transitions (MLP) as an integration device (see further in Chapter 2). This recourse to an existing framework helps to connect the somewhat dispersed key insights, whilst remaining cautious about causal linkages between them. As an ordering framework, the MLP is more a heuristic than a theory; it has been developed as an integration between various disciplines (STS, evolutionary economics, structuration theory), and as such it accommodates a relatively loose, reflexive integration of insights on specific ENCI aspects.

The five key ENCI transition dynamics (Chapters 3-7) are elaborated along a standardized format. They are all gathered geared towards synthesis, i.e. towards the concise formulation of comprehensive key insights. Expressing the project proceedings in terms of transition dynamics, this framework integrates the various tracks of EP research – whilst also bringing it in dialogue with the corresponding state-of-the-art on ENCI transition dynamics. Empirical observations and conceptual reflections are presented in subsections, to accommodate the different ways in which the 5 ‘transition dynamics’ have been investigated.

Chapter 2: Energy citizenship & transition dynamics

2.1 Synthesising across ENCI frameworks

ENCI research – our own research but also more generally – can be seen to proceed along existing frameworks and distinctions. This is understandable, given the longstanding theorising on citizenship and the vast area of energy research. Our own conceptualisation also started from seven quite familiar distinctions.

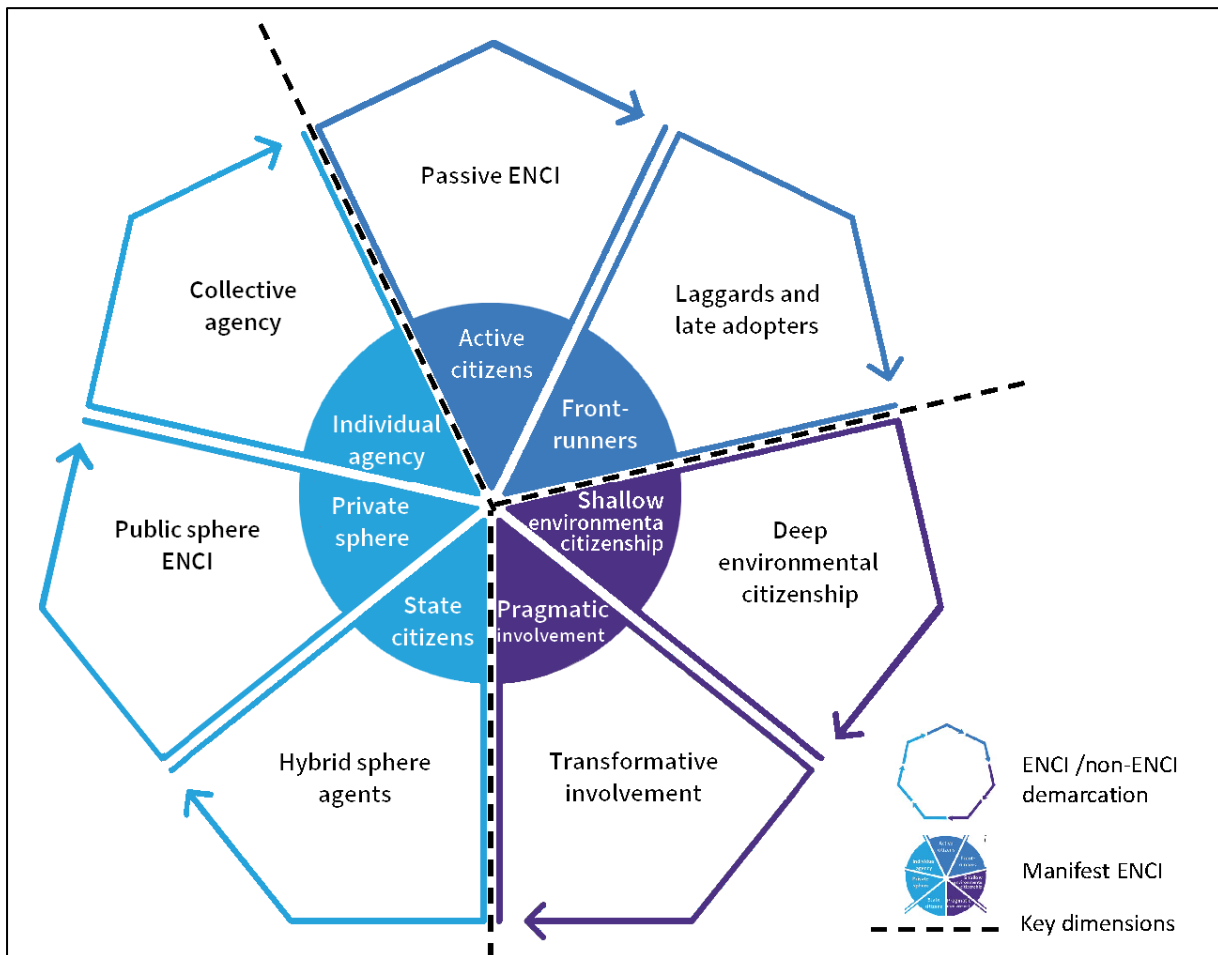


Figure 1: ENCI conceptual framework; Adapted from Pel et al. (2021) by Ariane Debourdeau

The subsequent ENCI typology has condensed these distinctions in a conceptually simplified and empirically more operational understanding aimed at addressing the whole breadth of possible forms of ENCI beyond the stereotypical recognisable forms. The distinguished 10 ideal-types, and the underlying understandings of ENCI, have subsequently been explored through various empirical investigations.








AGENCY		INDIVIDUAL			COLLECTIVE	
OUTCOME-ORIENTATION	 PRIVATE	 ORGANISATIONALLY EMBEDDED	 PUBLIC	 CITIZEN-BASED, CO-CREATED AND ORGANISATIONALLY FOSTERED	 SOCIAL MOVEMENTS	
REFORMATIVE 	1. DO THEIR BIT (in the household) Complying with the green energy system	3. DO THEIR BIT (within organisations) Energy citizenship within organisations	5. MAKE THEIR VOICE HEARD Participating in societal energy discussions	7. DO THEIR SHARE Joining green energy projects	9. DO THE JOB Facilitating the energy transition through alignment activities	
TRANSFORMATIVE 	2. DO THEIR OWN (in the household) The change-making energy citizen	4. DO IT THEIR WAY (within organisations) The energy-related change-maker in organisations	6. MAKE THEIR VOTE COUNT Mobilising votes for energy transition	8. GO AHEAD Building, expanding and linking citizen-based organisational forms	10. MAKE THEIR CLAIMS Protesting against the current energy system	

Figure 2: ENCI typology. (Debourdeau et al. 2021)

The empirical investigations have in fact been guided by a range of conceptual distinctions and frameworks. Next to the distinctions, the empirical research has also been structured by the six PESTEL context factors, by the consideration of intermediaries & actor networks, by the analysis of transformative social innovation agency (lengthening, deepening and broadening), and by similar ideas on the scaling up, out and deep of ENCI initiatives (see chapters 3-8). Meanwhile, the research has engaged with the initial ambition to approach ENCI as a broad societal phenomenon that comprises both the so-called ‘frontrunners’ as well as the ‘laggards’. This has been explored through questions on empowerment, and through various critical, political reflections on the energy inequalities that form the context of ENCI.

The empirical investigations have thus yielded a miscellany of frameworks. The basic challenge for this conceptual consolidation is thus to simplify, and to integrate. *How do these insights hang together and what do they clarify?* Importantly, there is a common line of thinking behind the aforementioned partial analyses: The larger share of our key insights and concepts can be retraced to transitions thinking.

2.2 Transitions, the Multi-Level Perspective (MLP)

ENCI is quite commonly understood in terms of transitions. It is often considered for its ‘contribution to’ or ‘lever towards’ transitions (Schlindwein & Montalvo 2023), as a matter of participation in transitions (Armstrong et al. 2021) or as part of the social innovation that is considered pivotal in the transition processes (Wittmayer et al. 2022; Sovacool et al. 2023).

One could also consider how ENCI discourse forms part of the broader tendency to see individuals and consumers (Randelli & Rocchi 2017) as leading actors in an ongoing transition:



Figure 3: In which phase of the energy transition are you?

These broad ideas about ENCI as ‘contribution to energy transition’ require specification. First, it is useful to define ‘transition’. Sustainability transitions are commonly defined as “*long-term, multi-dimensional transformation processes through which socio-technical systems shift towards more sustainable development paths*” (Cf. Geels 2005; Markard et al. 2012). Considering how ENCI phenomena develop as part of such structural, long-term transformations, the sustainability transitions lens zooms out from individual citizens to the bigger picture of societal change. This analysis of system transitions primarily². However, this is not limited to configurations of energy generation and consumption but also includes aspects of governance and broader social-economic transformations along the lines of Kemp et al. (2022).

Within research on sustainability transitions, various frameworks have been developed to describe the dynamics, governance aspects and – to a lesser degree – the possible impacts in terms of sustainability or citizenship more generally. Some of these partial frameworks correspond closely with the empirical investigations of EP work packages. The most widely used framework, and arguably the framework that captures most of the key aspects of transition processes, is the Multi-Level Perspective on Transitions. Indicating a multitude of dynamics (the arrows), the diagram helps to make sense of ENCI as a diversity of changes and innovations.

Distinguishing between changes of different kinds and changes that can be influenced to different degrees, it calls attention to the ways in which ENCI is itself conditioned by various societal developments. Plotting the ENCI dynamics on a time scale, the diagram considers

² Energy system is understood broadly as “the infrastructures commodities and services related to energy production, supply and use and its modes of governance”, transitions research elaborates the notion through the concept of the socio-technical regime (Ch.3).

contemporary ENCI phenomena as parts of ongoing societal developments - which may lead to structural changes over time, or to continued development along the lines of inert, path-dependent societal structures (the x-axis). Most importantly, the diagram helps to organise and integrate our key insights on ENCI *dynamics*. Rather than speculating about the potentialities of ENCI for distant futures (at the very end of the x-axis), or their contributions to hypothetical straight lines towards those future clean and just energy systems, it focuses on the kinds of changes/innovations, i.e. the *processes*, through which these future energy systems might arise or not.

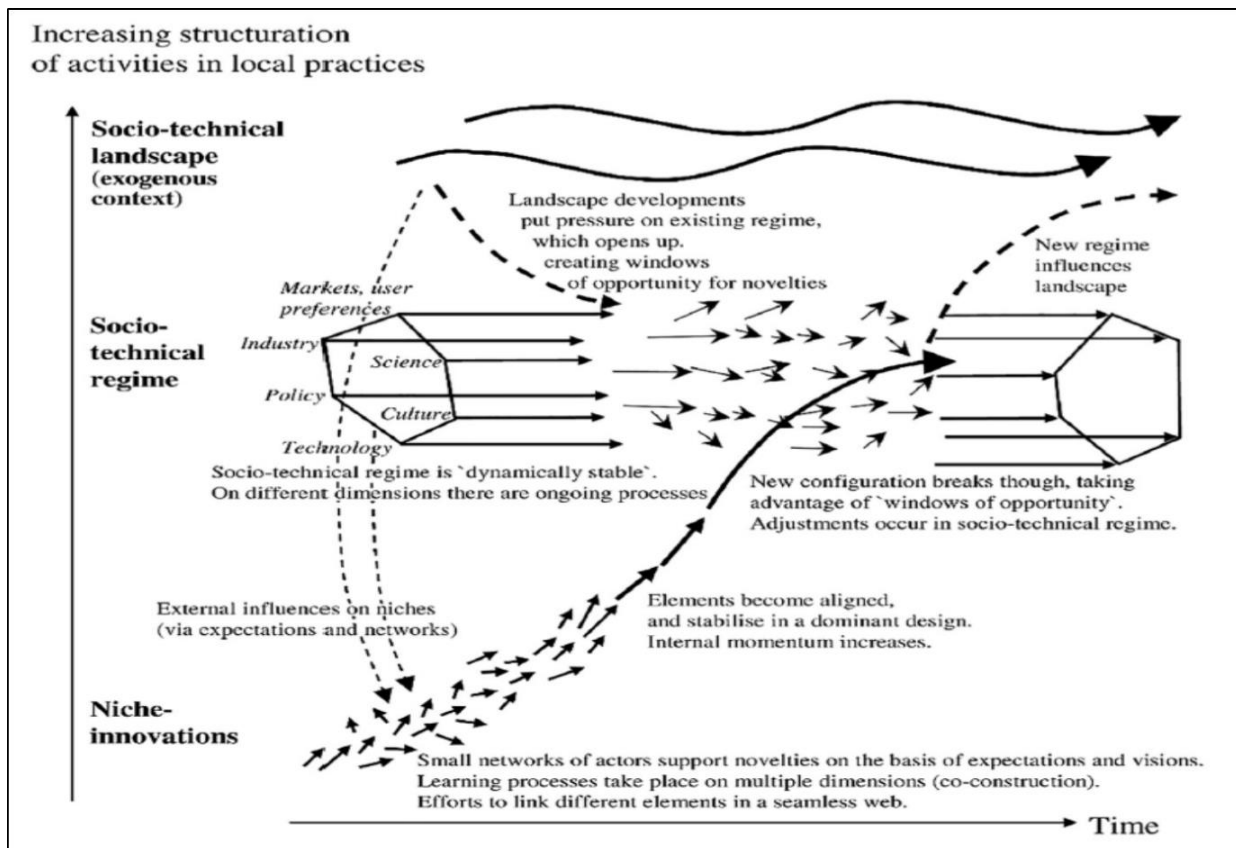


Figure 4: Geels (2005): The Multi-Level Perspective (MLP) on transitions

2.3 ENCI transition dynamics: 5 key insights

Taking the MLP as integrative device, our ENCI conceptualisation of ENCI dynamics comprises the following five key insights:

1. Considering ENCI as a set of societal developments and innovations, which kinds of innovations are we talking about? In which sense are they radical 'niches', incremental 'endogenous renewal' of dominant structures ('regimes') in the energy system? **(Ch. 3)**
2. Who are the actors carrying ENCI activities? Which are crucial ecosystems and intermediation processes? **(Chapter 4)**
3. What transition phase does ENCI correspond with, and what are the associated roles of the so-called 'frontrunners' and 'laggards'? **(Chapter 5)**
4. Which are the key developments in the ENCI 'landscape'? **(Chapter 6)**

5. Through which processes are ENCI initiatives diffusing and ‘scaling’?
 Through which processes are ENCI initiatives landing into transition ‘backlash’?
(Chapter 7)

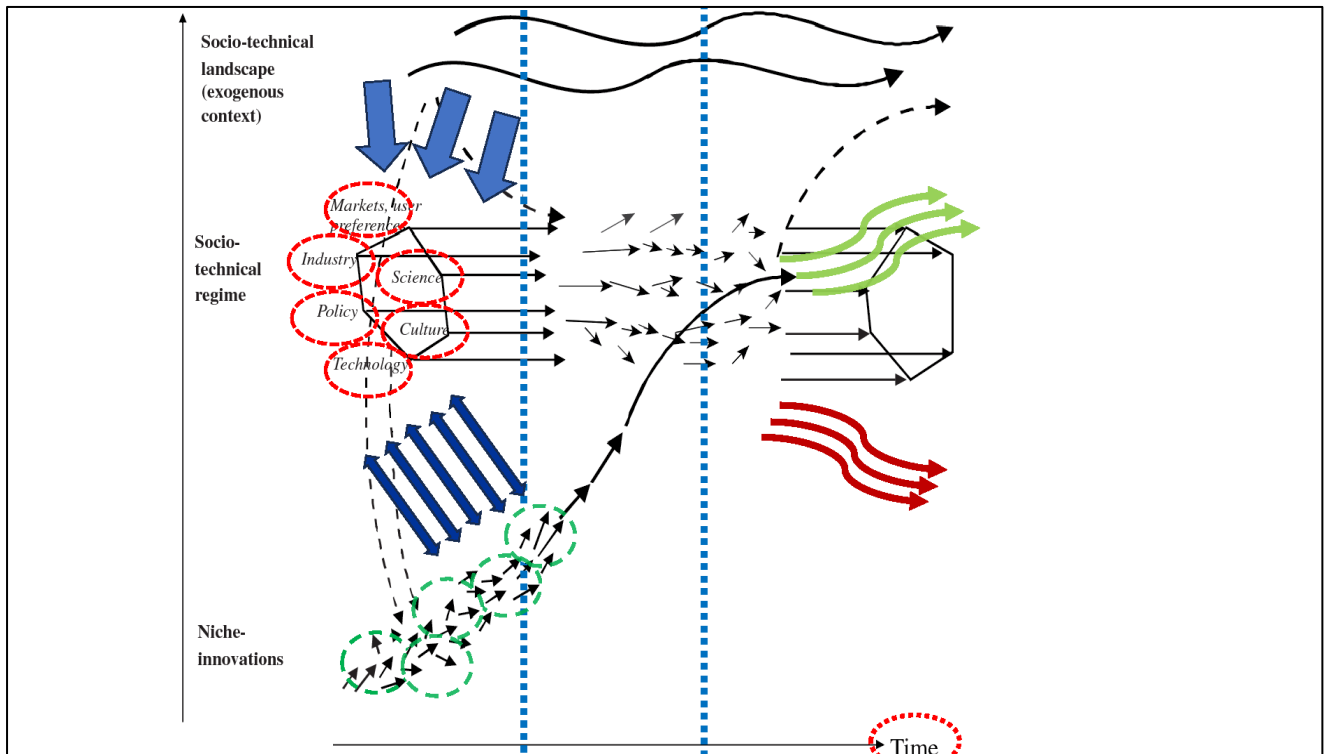


Figure 5: ENCI dynamics in energy transition (adapted from Geels 2005)

Chapter 3: Between transformative ‘niche’ and reformative ‘regime’

3.0 Introduction

ENCI is often considered in broad terms as a possible contribution to the energy transition (Cf. Chapter 2). Critical scholars have also questioned whether ENCI brings radical changes and emancipation, or rather system confirmation (Lennon & Dunphy 2023) and continuation of energy inequality (Klitkou et al. 2023). This is further complicated by the fact that it is often unclear what is meant by ‘system’. Since ENCI activities are related not only to involvement in systems of energy production and consumption, but also to political participation and energy governance, it is never obvious whether they are incremental or radical - this depends on the ‘system’ for which one considers their systemic impacts.

In sustainability transitions research, this distinction between radical and incremental change is a key issue. Figure 6 visualises how the MLP distinguishes two key dynamics in sustainability transitions: First, there are the incremental innovations, along the rules of the prevailing socio-technical system, the ‘regime’ (indicated in red). Second, there are the more radical, transformative innovations that challenge the prevailing regime (indicated in green). Applied to ENCI, this raises questions: *Considering ENCI as a set of societal developments and innovations, which kinds of innovations are we talking about? In which sense are they radical ‘niches’, incremental ‘endogenous renewal’ of dominant structures (‘regimes’)? In which systems – energy systems or other - are ENCI initiatives developing?*

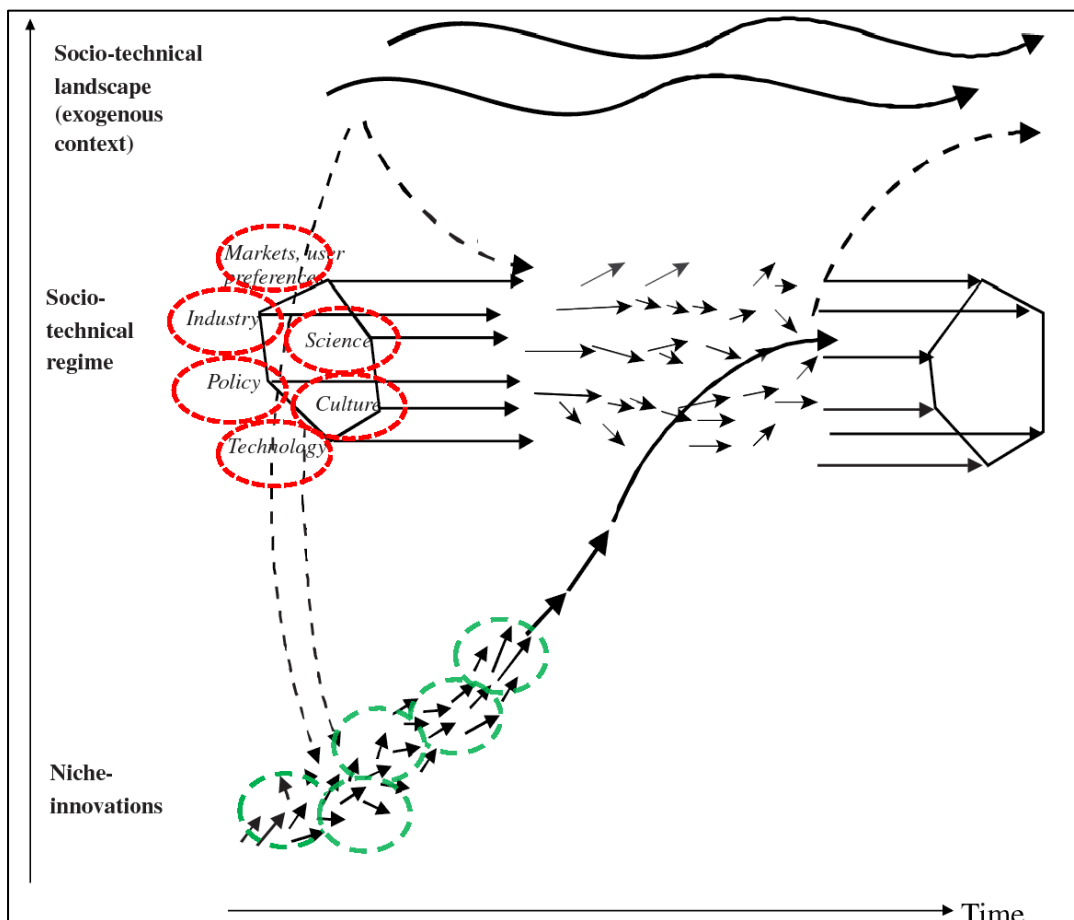


Figure 6: ENCI Between transformative ‘niche’ and reformative ‘regime’ innovations

3.1 Empirical advances

Our empirical investigations indicate:

- As a multifaceted phenomenon, ENCI encompasses a **broad range of innovations**. It involves mixtures of innovations in social relations (from energy consumers to energy citizens), in business and organisational models (cooperatives, social movements, innovation networks) in technologies (solar panels, balcony PV power plants, community-based Virtual Power Plants, energy sharing platforms, etc.), in modes of governance (citizen panels, referenda and, more fundamentally, assumptions on the roles of individuals when shaping public policies), and ultimately in infrastructures. Although they are primarily forms of social innovation, ENCI initiatives are thus bringing forth innovations on multiple dimensions of socio-technical ‘regimes’.
- ENCI initiatives pursue various **objectives**. As registered in a database that contains 596 entries, ENCI initiatives can be seen to pursue various goals (Szöllőssy & Vadovics 2023). The top 5 goals pursued by ENCI case initiators are displayed in figure 7:

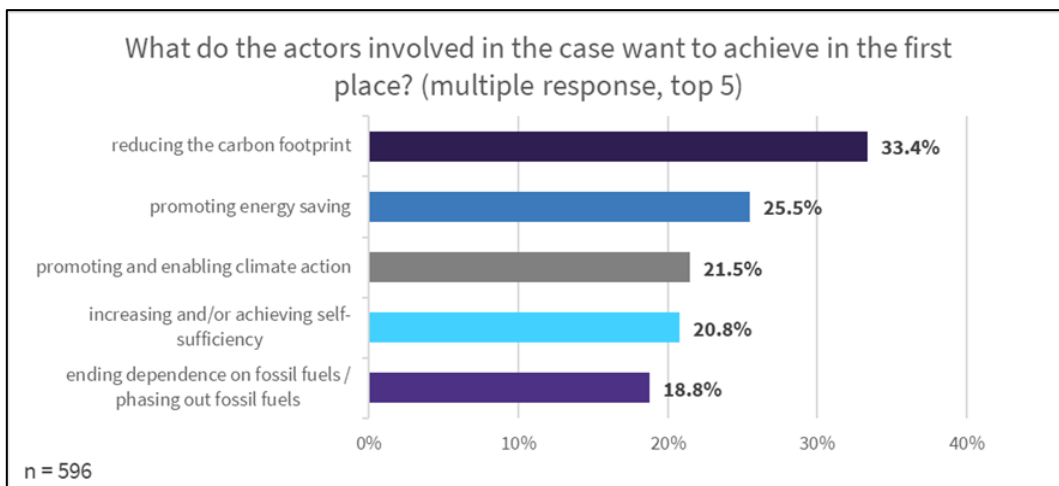


Figure 7: What do the actors involved in the case want to achieve in the first place (n= 596)

- **Mixtures of energy-related and citizenship-related objectives.** Following these different objectives, ENCI initiatives have various achievements. As analysed in 40 more detailed case studies, ENCI initiatives signal a broad range of concrete achievements that are made. This comprises both concrete immediate material achievements (energy saved, projects developed, individuals mobilised) as well as more indirect achievements in terms of alliances formed, cooperations undertaken, changes in modes of governance). The variety of achievements underlines how ENCI initiatives pursue mixtures of energy-related and citizenship-related objectives.
- **ENCI initiatives change over time.** Among the 40 detailed ENCI cases, as shown in Figure 8, the outcome-orientation and the aims of the cases mostly remain the same over time. 27 cases do not present any significant change, of which 13 did not change their objectives and 11 broadened them. However, 9 cases do change their outcome-orientation from ‘reformative’ to ‘transformative’, of which a majority broadened its objectives. Conversely, only 4 cases are changing their outcome-orientation from

transformative to reformative, of which 2 narrowed their objectives. This might result from an institutionalisation process, but it might also indicate a reduction of the scope of the cases. In any case, we have encountered few changes from ‘transformative’ to ‘reformative’ outcome orientations - possibly because a ‘transformative’ outcome-orientation strongly shapes the identities and senses of belonging of ENCI initiatives’ members.

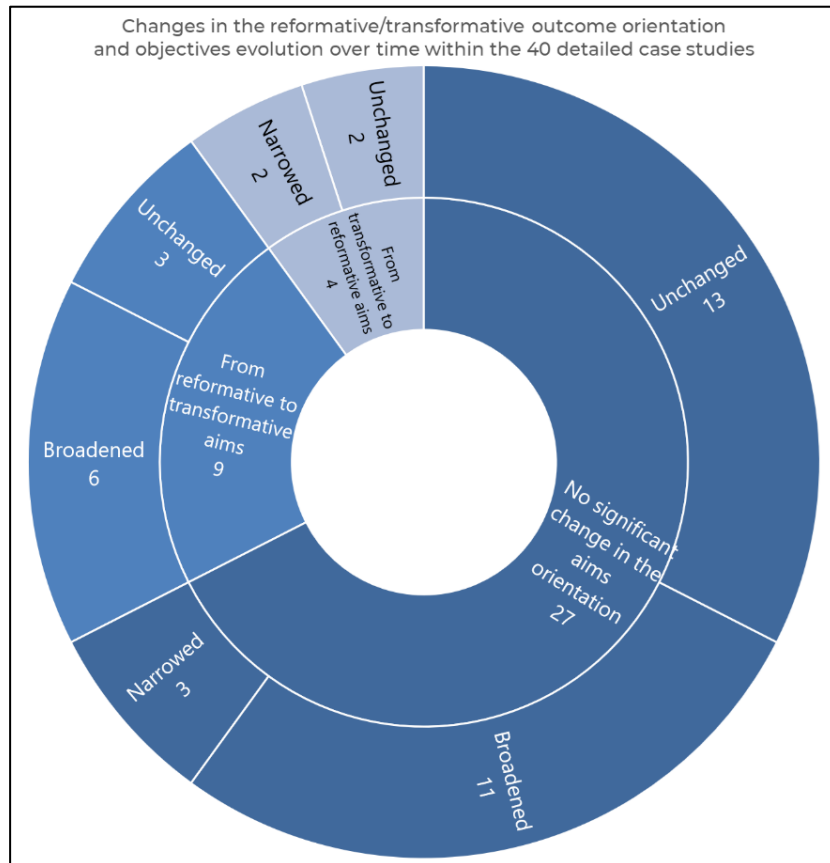


Figure 8: Changes in the reformative/transformative outcome orientations over time

- Changes of ideal type over time.** Figure 9 displays the proportion of the cases that are changing their main and/or secondary ideal type. Out of the 40 detailed case studies, 27 ENCI initiatives have been observed to have changed their main and/or secondary ideal-type(s) over time, whilst only 13 cases did not change.

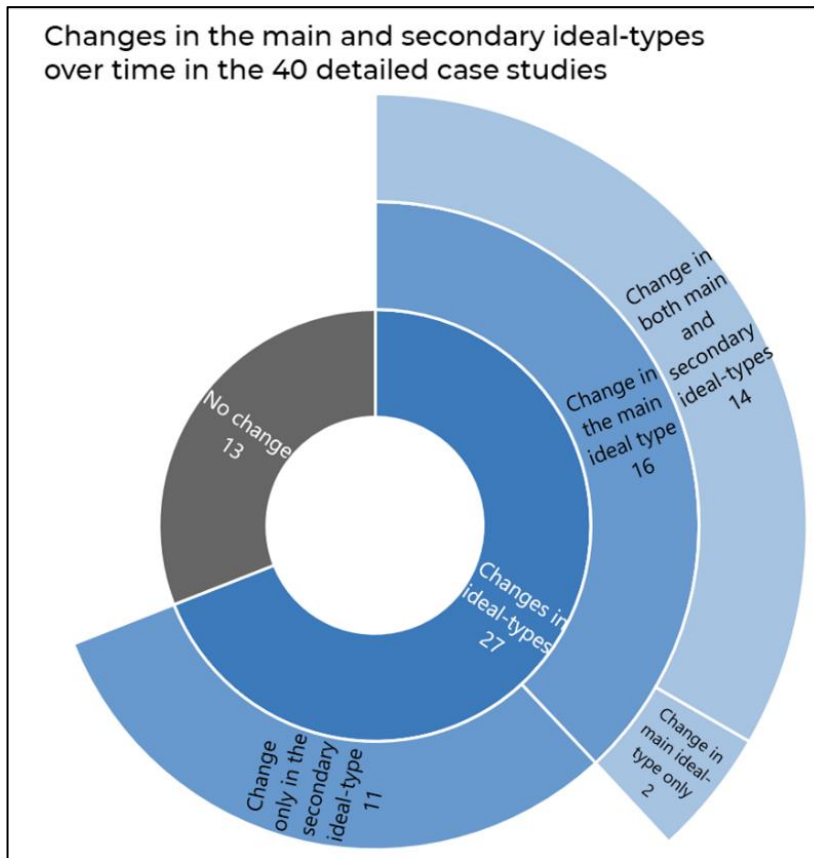


Figure 9: Changes in ideal-types in the N=40 case studies

In summary, the outcome-orientation and the objectives are characterised primarily by stability and broadening. Narrowing of objectives occurs very seldom. Ideal-types are more changing than the outcome-orientation. In relation to the ideal-types, changes occur generally in both main and secondary types, or in secondary types (only 2 cases changed only their main ideal-type).

3.2 Conceptual advances

The niche-regime distinction is a general systems-theoretical distinction, and it remains to be seen how it applies to ENCI phenomena. The basic distinction between system-confirming and system-challenging action has been fundamental in our conceptual development. In turn, it has allowed for further conceptual insights:

- **In relation to ENCI, it is useful to distinguish between ‘niche’ and ‘regime’ innovations.** As elaborated in Debourdeau et al. (2021), several of our initial key conceptual distinctions can be synthesised through a distinction between ‘reformative’ and ‘transformative’ oriented forms of ENCI activities. This distinction captures the various calls for somehow critical, politically aware, systemic understandings of ENCI (Pel et al. 2021; Silvast & Valkenburg 2022; Lennon & Dunphy 2023). Our reformative-transformative ENCI distinction expresses an important transition-dynamical point: ENCI contains certain elements that challenge dominant socio-technical structures and unsustainable energy regimes. It can also be appreciated as a niche for the efforts towards radical changes in governance, organisational forms and business models. Yet in various ways it is also often taking

the form of problem-solving, patching and alleviating the internal tensions of energy systems and political life more generally. It is therefore useful not to group these different **types** of ENCI together. Analysing along the niche-regime distinction helps notably to avoid falling into either uncritical embrace (as if it were inherently amounting to sustainable and ‘just’ transition) or scepticism (as if it were little more than a ‘late-capitalist chimera’, to use the characterisation by Lennon & Dunphy 2023).

- **ENCI comprises both ‘niche’ as well as ‘regime’ innovations.** The niche-regime distinction is particularly applicable as it refers to ongoing niche-regime dialectics, rather than to an absolute dichotomy. Figure 6 shows this via the multitude of arrows, with ENCI arguably in between ‘niche’ and ‘regime’. ENCI comprises alternative moments pursuing Degrowth objectives, but also widespread efforts by incumbent actors to turn back the thermostat. Though rather stable in their outcome-orientation and aims, ENCI initiatives in some cases can display significant changes over time. This alone explains why they defy clear-cut categorisation as either niche- or regime-oriented innovations. This brings out the fundamentally ambiguous character of ENCI, when it comes to systemic impacts. ENCI refers at once to a very broad range of innovations, of which not all are clearly contributing to radical energy ‘regime’ changes. Current ways of producing and consuming energy are arguably highly unsustainable and thus require transformative change. Things may be less clear-cut when it comes to governance, and by extension, to current democratic rule (imperfectly as it may be and different between countries). Often, transformative changes to democratic political systems do not lead to more just systems, even though this is often an aspiration (see also Ch.7 on transition ‘backlash’). In Germany, the Naturstrom AG clearly addresses the regime level with radical changes; however, outcome-orientations towards radical change are still mostly found in niche initiatives. This is also because radical ideas often need to be put into practice locally, i.e. what kind of mobility is used to distribute locally grown food by what kind of a (citizen-empowered) organisation. The case of Cargonomia shows regime-challenging educational and publication activities, but also attempts to put Degrowth principles into practice. The in-between space of ENCI, between niche and regime, is signalled by actors involved in the ‘Solocal energy’ initiative:

“I believe that this is precisely the difference between reform and transformation.

(...) the transformative thing about the self-construction groups is that it is much closer to the people. That it has more of an ambassadorial effect, because people tell about it: “— I built my own solar system at the weekend,” “—How cool!” And yes, “— Here in the week the craftsmen came-by and we put a solar system on it.” There's a difference in what people will say. **And it's precisely about how we can get people more involved in the energy transition.** And it's not: “We'll knit our own socks”. I'm not at all in favour of people somehow building things themselves. Because at the end of the day you have the problem that no electrician will come and put these systems into operation. And then that doesn't help the energy transition at all, and that's this **niche in-between**, so to speak.” (KL, Solocal energy, KEW Berlin)

- **ENCI initiatives do not only target the energy system.** ENCI initiatives, and ENCI activities in general, tend to be involved in various activities which are not exclusively



energy-related. This may seem obvious, as the citizenship aspect of ENCI covers the full breadth of political life. Nonetheless, it is remarkable how energy-focused ENCI activities are often connected with the pursuit of other societal goals – one can think of the associated re-acknowledgement of associated jobs, tasks and roles of repair work and maintenance, as in the case of the ULB energy efficiency mission. Other exemplars are the referenda, in which energy issues help to make participatory governance concrete. The studied ENCI initiatives pursue various objectives, many of which are going beyond the objectives of ‘energy system’, ‘energy transition’ or sustainable energy. It can be suggested that they pursue a ‘just energy transition’, comprising concerns over energy democracy, inclusiveness, justice, energy poverty, or energy inequality. For example, some seek ‘sustainable lifestyles’, encompassing energy justice and environmental sustainability, which is evident in most of the sustainable housing communities (Vadovics et al. forthcoming). Current understandings of energy transition are increasingly based on broad, socio-economic view of energy systems. Nevertheless, this should not distract from the fact that various ENCI actors do not situate themselves in an energy system. Their reformative or transformative aims are not necessarily positioned vis-à-vis an energy ‘regime’.

- **ENCI forms part of broader institutional tensions in governance systems.** Alongside its significance for the energy system, energy citizenship also deserves attention as a shift in governance. As Devine-Wright (2007), Defila et al. (2018) and Lennon et al. (2020) indicate, ENCI marks a shift from consumer-to-citizen. This signals a transference of roles in relation to actors, a strong assumption that the dominant figure “citizen-as-consumer” should be reevaluated, and a reconsideration of the delegation of energy-related responsibilities to experts, energy providers and technologies. Importantly, this reconsideration of roles extends beyond citizenship. It also applies to governmental actors (taking up facilitating roles and roles as initiators of ENCI) and to businesses and utilities (redefining their business and organisational models, and their roles in the changing energy system). As observed frequently in the Central and Eastern European cases of ENCI initiatives, much ENCI revolves around governments creating contexts for which to develop ENCI. This underlines how ENCI is only partially about citizens and civic action. Energy citizenship must be considered as part of broader institutional tensions, and of a broader repositioning of big institutional players. Bosman (2022) has described this process of uncertainty about institutional roles as the emergence of an institutional ‘transition space’ in which large institutional actors seek to find their place. He describes transition space as “*a context that is characterized by the absence of stability, predictability and coherence between actors and their environment*”.
- **ENCI as a pacifying concept in a context of politicization and polarization.** ENCI can be considered a rather bourgeois, mundane appeal to civic rights and duties – for example the duty to keep one’s thermostat at 19 degrees Celsius, and the rights to subsidies for desired ‘green’ investments. However, the ENCI concept seems to acquire meaning in a context of politicization and polarization: Calay & Claisse (2022) have indicated how rising energy prices has led to a re-politicization of energy issues. Klitkou et al. (2023) highlights the context of energy inequalities, and the sudden revelation of widespread energy poverty has led to an increased engagement with energy issues by radical Left, radical Right and populist parties. In this context, ENCI

emerges as a pacifying narrative.

3.3 Conclusions

Which are the key insights on this aspect of transition dynamics?

- 1) **ENCI refers to innovations on many dimensions of socio-technical energy systems.** It involves bundles of social, organisational, business model, governance and technological innovations. It also involves system-level innovations, such as the collective institutional arrangements needed for electricity network stability. Each ENCI initiative involves an organisational form, a business model, a system of governance, technology projects and mission statements, which are coupled not just internally but also externally (as changing configurations).
- 2) **ENCI comprises both ‘niche’ as well as ‘regime’ innovations.** ENCI initiatives can be seen to pursue various objectives, aiming for various achievements. Energy cooperatives adhere to values of local democracy, but migrants are poorly represented in them. ENCI comprises alternative moments pursuing Degrowth objectives, but also widespread efforts by incumbent actors to turn back the thermostat. ENCI initiatives involve a variety of beliefs and motivations. It is useful to distinguish between reformative and transformative outcome-orientations, as per our ENCI typology in Debourdeau et al. (2021). Radical and incremental ENCI initiatives can be distinguished, especially when considering them as part of niche-regime dialectics. There is no clear reason to consider either the reformative or the transformative variations of ENCI as more promising (Cf. Lennon & Dunphy 2023). It is through their interactions that the different forms of ENCI give shape to energy transition. Furthermore, it needs to be considered that the reformative and transformation-oriented actions by niche and regime actors are partly a matter of choice and partly a matter of convenience. Transformative change is an ideal which is difficult to achieve and practice: Especially in the collective, more institutionalised forms of ENCI there are constraints on radicalism.
- 3) **ENCI initiatives do not only target the energy system.** ENCI initiatives, and ENCI activities in general, are not always directly energy-related. Beyond the energy system, ENCI initiatives are part of transformative agencies that may have far-reaching impact, notably on the local governance processes. The studied ENCI initiatives pursue various objectives, many of which are going beyond the objectives of ‘energy system’, ‘energy transition’ or sustainable energy. It can be observed that they pursue a ‘just energy transition’, comprising concerns over energy democracy, inclusiveness, justice, energy poverty, or energy inequality. Current understandings of energy transition are increasingly based on such broad, socio-economic view of energy systems. Nonetheless, this should not distract from the point that various ENCI actors do not situate themselves in an energy system. Their reformative or transformative aims are not necessarily positioned vis-à-vis an energy ‘regime’. This observation coincides with Ringholm (2022), who underlined the significance of ENCI as innovations-in-governance.
- 4) **ENCI forms part of broader institutional tensions in governance systems.** As Devine-Wright (2007), Defila et al. 2018 and Lennon et al. (2020) indicate, ENCI marks a shift from consumer-to-citizen. It marks a shift in roles of actors, a strong assumption

that the dominant figure “citizen-as-consumer” should be overcome, and a reconsideration of the delegation of energy-related responsibilities to experts, energy providers and technologies. Importantly, this reconsideration of roles extends beyond citizenship. It also applies to governmental actors (taking up facilitating roles and roles as initiators of ENCI) and to businesses and utilities (redefining their business and organisational models, and their roles in the changing energy system). ENCI is only partly about citizens and civic action.



Chapter 4: Ecosystems & intermediation

4.0 Introduction

The consideration of ENCI in terms of ‘niche’ and ‘regime’ innovations has already clarified how ENCI comprises quite a mixture of reformative and transformative orientations. This calls attention in turn to the diverse actors and the diversified actor networks through which energy citizenship is enacted. This corresponds with the typical attention in transitions studies to innovation ecosystems and to processes of intermediation: ENCI and associated innovations are seldom brought about by individuals in isolation. Figure 10 indicates how the analysis of innovation ecosystems and intermediaries typically addresses both ‘niche’ and ‘regime’ structures. Moreover, it elicits the linkages between them – intermediaries often fulfil an important role as a bridge between established institutional structures and radical alternatives of outsiders. The MLP thus raises the following basic questions: *Who are the actors carrying ENCI initiatives? Which are crucial ecosystems and intermediation processes?*

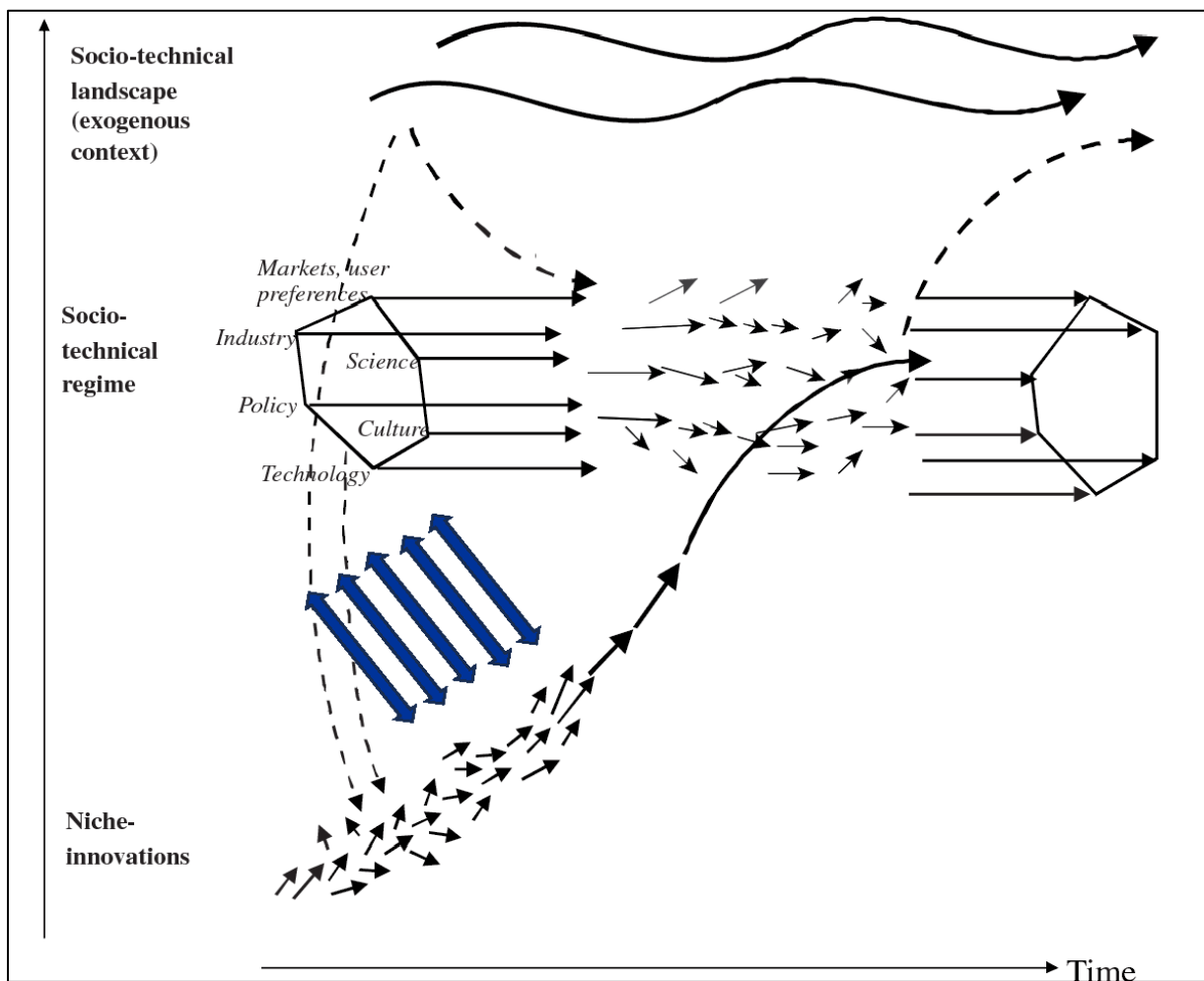


Figure 10: ENCI ecosystems & Intermediation

4.1 Empirical advances

We have investigated the nature of intermediation, its importance and experiences with it. Key observations:

- Having mapped 596 cases, we have counted **the kinds of actors who carry out ENCI initiatives**. Figure 11 provides an overview. The category “other” comprises many community-apartment owners or housing associations, as well as specific organisations such as registered church communities, research institutes, or student associations. There were also more corporate-sector-related actors, such as professional journals or innovation funds (Szöllőssy & Vadovics 2023: 6).

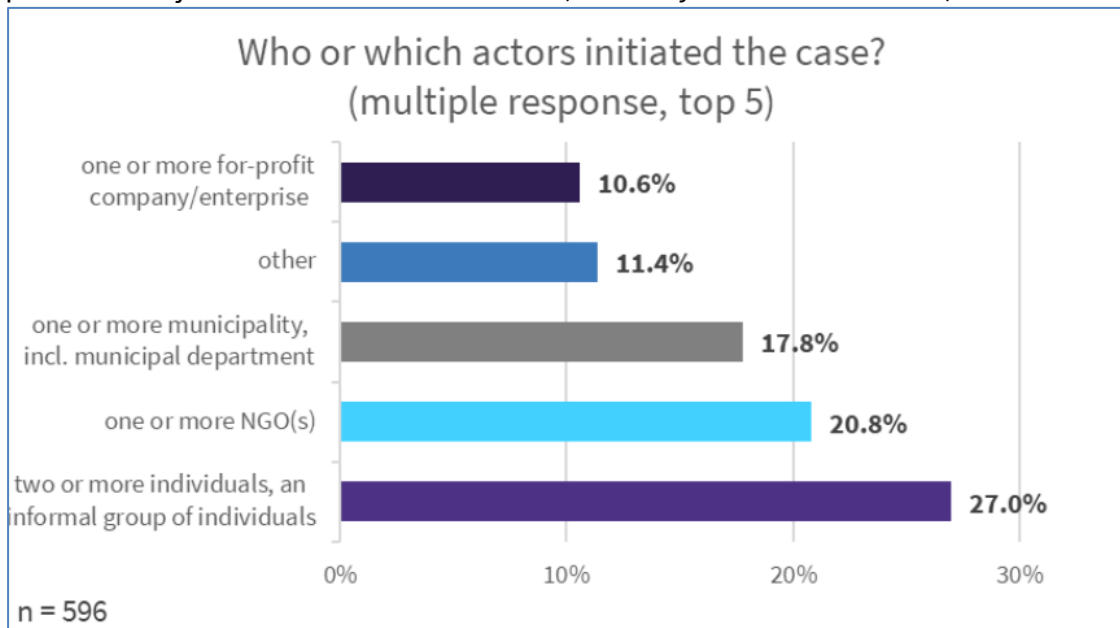


Figure 11: Initiators of ENCI cases (ENCI initiatives) (Szöllőssy & Vadovics 2023).

We have developed actor/network maps of the N=34 detailed cases. Figure 12 gives a good example of the multilevel networks/innovation ecosystems that enable an ENCI initiative to emerge and take shape.

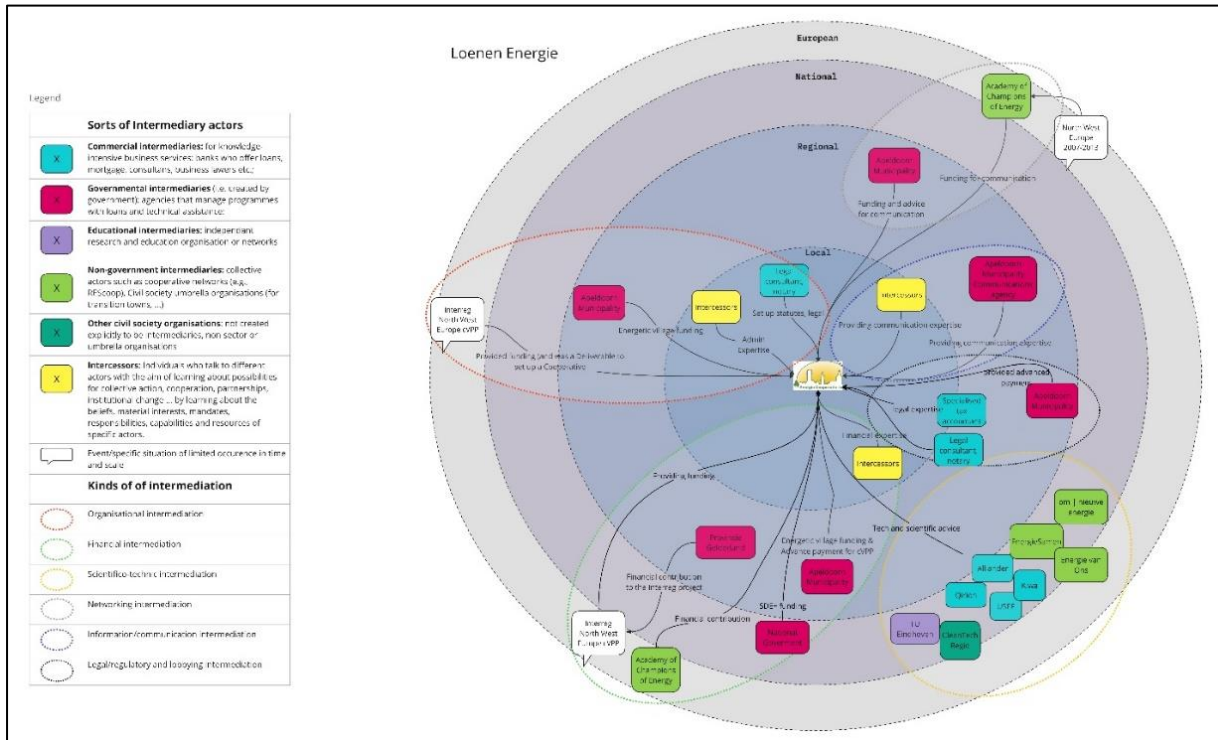


Figure 12: intermediation and intermediaries in the Loenen Energy case (NL)

- Our literature review (Markantoni et al. 2023) identifies five primary types of intermediaries in the context of energy citizenship. Analysis of the 40 detailed cases confirmed:
 1. **Commercial Intermediaries:** These include banks offering mortgages or loans, thereby connecting capital providers with those in need of capital, and business lawyers and consultants assisting in negotiations.
 2. **Governmental Intermediaries:** Examples are government agencies managing programs offering loans, funds, and technical assistance for energy renovation and cooperatives, and platforms facilitating knowledge exchange.
 3. **Non-Government Intermediaries:** This group comprises chambers of commerce, cooperative networks, and civil society umbrella organizations like REScoop and the European Federation of citizen energy cooperatives.
 4. **Other Civil Society Organizations:** These are entities not explicitly established as intermediaries but play a significant role in the sector.
 5. **Intercissors:** These individuals facilitate dialogues among diverse actors, fostering collective action and institutional change by learning about the beliefs, material interests, mandates, responsibilities, capabilities and resources of specific actors.

In the cases studied, the most prominent intermediaries were governmental, non-governmental, and commercial. Educational intermediaries, though less frequent, were crucial in providing scientific and technical expertise for innovative projects, such as the neighbourhood battery project by Weert Energie and the cvpp project by Loenen Energie (Figure 13).



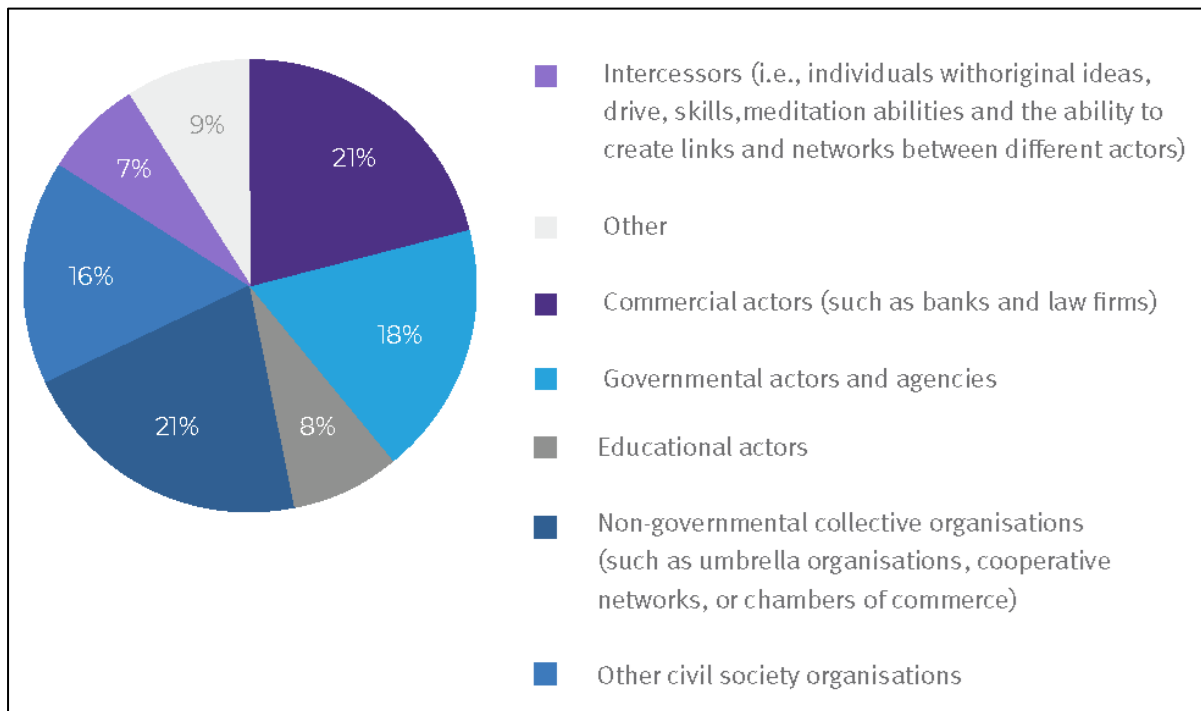


Figure 13: Distribution of the intermediation/services provided by the intermediary actors in the analysis, by percentage (N34)

- **6 Main forms of intermediation** have been identified among the N=34 case studies (Figure 14):
 1. Organisational intermediation such as setting up the legal statutes of an initiative, providing capacity building or negotiating with administrative authorities;
 2. Financial intermediation such as capitalisation and resource mobilisation;
 3. Scientific-technic intermediation in the form of technical and scientific expertise provided by for example planners, architects, photovoltaic or wind power specialists or project management specialists;
 4. Networking intermediation that enables cooperation, exchange and networking between similar actors;
 5. Information and communication intermediation that can help make the case known, provide mediation or consultation services;
 6. Regulatory and lobbying intermediation to undertake lobbying activities directed towards regulatory processes and decision-makers.

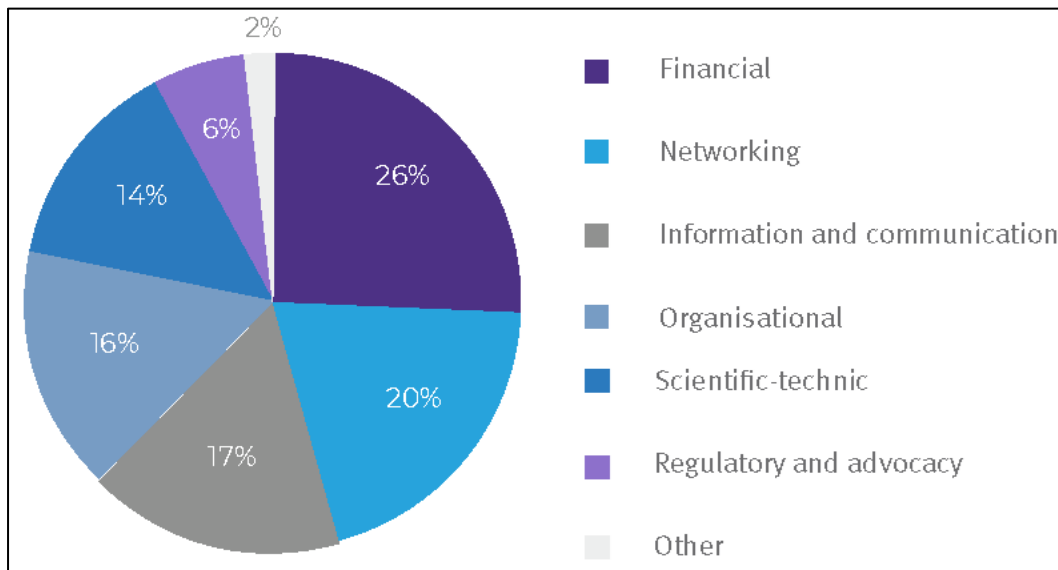


Figure 14: Distribution of the intermediation/services provided by the intermediary actors in the analysis, by percentage (N34)

- Our N=34 cases provide empirical data/conclusions on intermediaries (= indicating actor networks supporting ‘niche’ innovations, but also actor networks containing a significant amount of established, incumbent, ‘regime’ actors). This indicates through which kinds of intermediation processes ENCI is becoming part of the energy ‘regime’ – at least in certain countries (Cf. Chapter 3 on niche-regime dialectics).
- Results of a QCA analysis (D4.3) on cases of collective energy citizenship indicates that substantial **intermediation provided by non-governmental actors is a requirement** for such cases to exist and persist. Independent of their realised achievements, all these cases were supported by such extensive intermediation.
- In many cases, intermediaries helped to raise the level of ambition of their projects in terms of novelty and diversity.

4.2 Conceptual advances

- **Embedded ENCI agency.** The agency that is enacting certain forms of ENCI is difficult to determine. The classification of empirical cases (that is, of certain ENCI initiatives that have been demarcated, interpreted and in the words of Charles Ragin ‘cased’ in a certain way) has led to many examples of indeterminacy. *Why have so few cases been registered as cases of individual agency, as ENCI in the household? Is such an empirical observation an expression of an underlying reality or merely an artifact of what is observable by means of the available research tools (for instance desktop research for websites)? And can all cases ultimately not be ascribed to individual ENCI, or at least partly? Or inversely, perhaps all cases of supposed individual agency, of ENCI enacted and initiated by particular citizens, can be ascribed at least partly to collective forms of agency?*
- Intermediation helps to create a congruence between institutional logics. It cannot overthrow or fundamentally alter power relations.
- **The line between intermediaries and ENCI initiatives is difficult to draw.** The notion of ENCI ecosystems, and the consideration of ENCI as a result of the actor

networks as visualised above, could be a useful way towards integrative understanding. Both initiative as well as the relevant intermediaries are considered.

- **Intermediaries or intermediation processes?** The agency of ENCI initiatives can be analysed in terms of the initiators (Figure 11), networks (Figure 12) or intermediary actors involved (Figure 13). This highlights the agency of actors. However, when analysing transition dynamics, more important than the agency of actors are the intermediation processes that these actors engage in and make possible (Figure 14) – as this clarifies the resources and interactions that help ENCI to grow in society.

4.3 Conclusions

Which are the 3 key insights we have developed on this aspect of transition dynamics?

- 1) **ENCI: not just ‘grassroots innovation’.** Key actors/agency carrying ENCI initiatives appear to be 1) informal groups of individuals (27,0%), 2) NGOs (20,8%), and 3) municipalities (17,8%). Based on our sample of 596 ENCI initiatives and our classification of cases, this clarifies how ENCI can partly be considered a phenomenon of grassroots innovation (Seyfang & Haxeltine 2012) or social movements (Campos & Marín-González 2020). This view is reductive, as many of the ENCI initiatives show social, governance and technological innovations that have been initiated by other categories of actors than informal groups and NGOs.
- 2) **The importance of organisational intermediation.** Key forms of intermediation appear to be financial, networking and organisational. If the two formers seem rather obvious, the latter is surprising as it underlines that organising ENCI initiative is not self-evident. The analysis of the business and sustainable innovation models has explored further this aspect and underlined how an elaboration of an organisation model can be crucial for ENCI initiatives.
- 3) **The intermediation paradox.** Availability of intermediaries appears to be a requirement for ENCI initiatives to persist and can be a strong predictor of success. This also indicates that certain ENCI-initiatives are strongly institutionalised and embedded in very extensive ecosystems. This intermediation may occur to the extent that a large part of the agency is delegated from individual citizens to these intermediaries and innovation ecosystems (Cf. Beauchamp & Walsh (2021) on the relative citizen passivity associated with collective heat networks, compared to the more actively engaged implementation of all-electric installations). Empirical examples are the highly institutionalised cooperative-of-cooperatives in hydro-electricity (HOSE/Belgium), or the one-stop-shops developed to guide citizens through their home renovation projects.

Chapter 5: Frontrunners, laggards & empowerment

5.0 Introduction

Energy citizenship comprises more than the pioneers and frontrunners of the energy transition, the much-celebrated energy prosumers and energy cooperatives. ENCI marks an advanced stage of the energy transition (Markard 2018; Kloppenburg & Boekelo 2019; Lindberg & Kammermann 2021; Löhr & Mattes 2022) in which it has become everybody’s business. The associated idea is that ENCI comprises initiatives revolving around both ‘frontrunners’ and ‘laggards’ or ‘followers’ (Geels 2021). Importantly, it involves initiatives that somehow empower the latter to catch up with the former. As indicated in Figure 3, judgments of leading and trailing behind are quite common in public discourse: “*In which phase of the energy transition are you?*”. These judgments can be patronising towards individuals and countries who are dismissed as backward, yet they do express widespread concerns about individuals falling behind.

Attention to issues of energy poverty (DellaValle & Czako 2022), energy inequality (Klitkou et al. 2023), energy democracy (Wahlund & Palm 2022) and energy justice (Bombaerts et al. 2022) focus on the vulnerable, the disenfranchised, the disempowered, and the citizens left behind – and in a sense on the laggards in the transition. These issues to have become high-profile political issues. Transitions research considers these developments from a long-term, temporal perspective. As visualised in Figure 8, it considers the sensitive categories of ‘frontrunners’ and ‘laggards’ systematically as phases in processes of innovation diffusion and system transition. *What transition phase does ENCI correspond with? What are the associated roles of the so-called ‘frontrunners’ and ‘laggards’? Through which empowerment processes can individuals become ‘frontrunners’ or get out of ‘laggard’ states?*

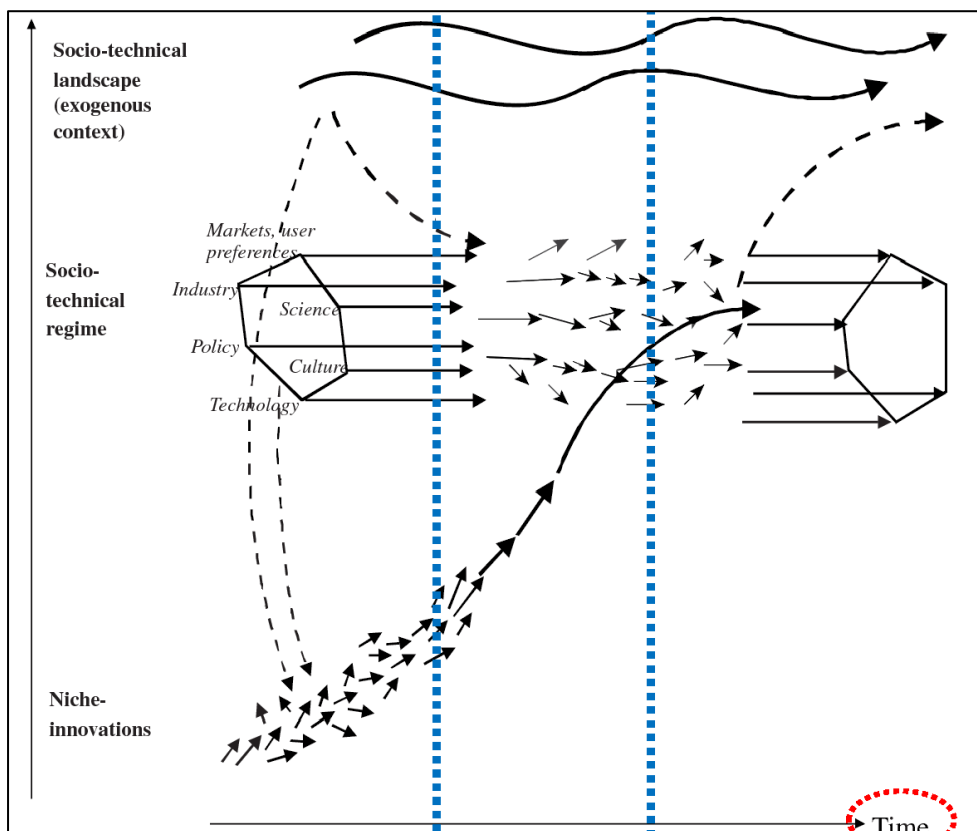


Figure 15: Frontrunners, Laggards & Empowerment

5.1 Empirical advances

- ENCI initiatives remain centred around the ‘frontrunners’, yet there is a significant share of cases beyond this category.** We have empirical data (N=40 case studies) on ENCI initiatives that we characterised as ‘frontrunners’/ ‘followers’/ ‘laggards’. Certain individuals/initiatives in these studies are considered ‘frontrunners’. Others have pioneered initiatives and observe how these initiatives are taken up by followers. In some cases, people are only just becoming involved. The case studies have also shown examples of individuals and groups who are somehow still struggling to become active energy citizens.

EnergyPROSPECTS (2023) provides an overview: “The frontrunner-laggard categorisation of cases was evaluated at both the national and the European. Figure 1 clearly reveals that the proportion of frontrunner cases at the national level is twice as large as at the European level.”

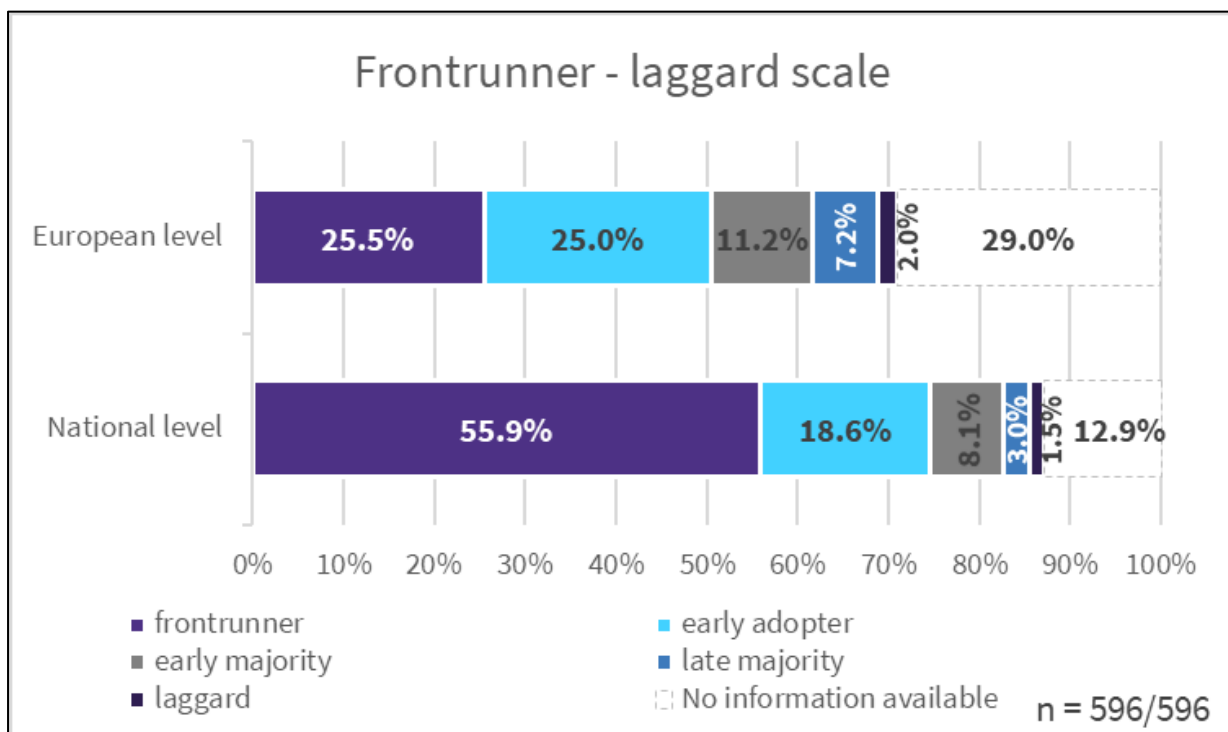


Figure 16: Frontrunners and laggards in N=596 ENCI cases (Source: EnergyPROSPECTS 2023)

At the national level, more than half of the cases belong to the ‘frontrunner’ category (55.9%), with the second largest group being early adopters (18.6%). The third most common response was “no information available” (12.9%). At the European level, the picture is different, with a lack of information being the most populated category (29%), followed by ‘frontrunners’ (25.5%) and early adopters (25%).

Figure 17 presents the national level ‘frontrunner’ and ‘laggard’ scales applying a reformative vs. transformative data breakdown, where few significant differences can be highlighted. Among the transformative types, the proportion of ‘frontrunner’ cases is significantly larger (t: 63.2% - r: 48.5%). Among the reformative cases, ‘late majority’ (r: 5.4% - t: 0.7%) and ‘laggard’ (r: 2.7% - t: 0.4%) cases are in the majority.

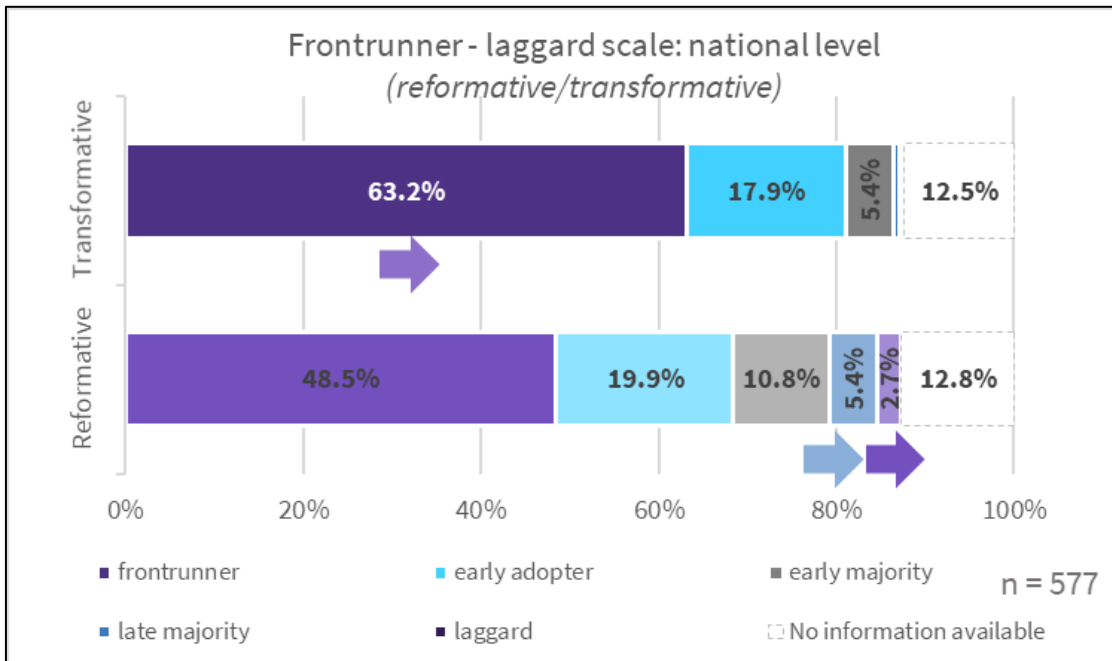


Figure 17: Laggard - frontrunner distinction (national level) according to a reformative - transformative data split

Figure 18 presents the European-level ‘frontrunner’ and laggard scales applying the reformative vs. transformative data breakdown, where some significant differences are also highlighted. The transformative group is associated with a larger proportion of frontrunner cases (t: 31.8% - 19.5%), while the reformative group is associated with a greater proportion of laggards (r: 3.4%; t: 0.7%).

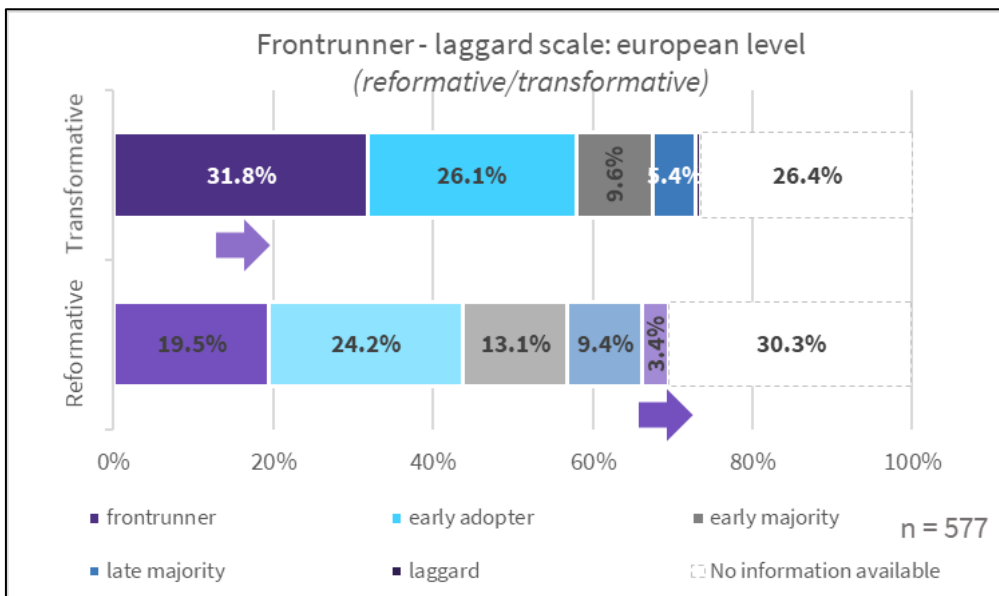


Figure 18: Laggard - frontrunner distinction (European level) according to a reformative - transformative data split

- ENCI initiatives develop strategies for next-phase transition.** We have empirical descriptions of the phases ENCI initiatives go through (Cf. Chapter 3). The initiatives display changes in activities and goals over time, and develop strategies comprising short, middle and long-term goals. An interesting example is evident in the ‘Solocal

energy’ case in Germany, which was once was a pioneer (a ‘frontrunner’) in do-it-yourself balcony power plants. In this case, a respondent indicated that once the balcony power plants become mainstream, they could abandon this part of their activity. Considering the job finished, they would focus on other, more innovative activities. This example indicates how ENCI initiatives develop their strategies through conscious positioning in an ongoing transition. Another example is the Belgian case of the Bond Beter Leefmilieu home renovation campaign. This campaign explicitly calls attention to the need to make governmental support for home renovation projects (notably subsidies) available to much broader socio-economic segments of society. In their analyses, they explicitly situate home renovation in current as full as future stages of energy transition. Given the governmental targets and the projected end points for the energy transition in 2030 and 2050, they appeal to Flemish government to shift gear – to act on the need to guide society into an advanced stage of transition in which it becomes everybody’s business.

- **The rise of EU-wide empowerment policies.** A relevant observation is the development of various EU and national government policies (Cf. Debourdeau et al. (2022) and Hajdinjak et al. (2023) on the analysis of the associated Political, Economic and Social factors), that lay the course of the energy transition more in the hands of citizens – and notably in those of empowered citizens. This acknowledges the growing importance of the substantial (Cf. Figure 16-18) groups beyond the ‘frontrunners’. The European Climate Pact, as part of the Green Pact, is committed to engaging citizens in climate action through a series of packages and initiatives that promote energy transformation (European Commission, 2020). Meeting this challenge requires empowering citizens to make more informed consumption decisions, efficient energy use and optimal investments. Also, the implementation of the Renewable Energy Directive (RED II) and the Internal Electricity Market Directive (IEMD) that promote new roles as prosumers and as actively engaged in decision-making regarding the transformation of the energy system. Achieving this transformation of citizenship is not without risks and barriers (e.g. high project costs, national regulations, lack of knowledge and experience), yet these can be reduced through effective policy frameworks and support.

- **The importance of collective empowerment.** Our N=40 cases provide empirical data/conclusions on empowerment and disempowerment. This reveals the micro-level mechanisms of ENCI, notably on the processes through which people become frontrunners, followers, late adopters – and through which processes (and lack of empowerment) they remain laggards.

We addressed empowerment as a key element of energy citizenship, at both individual and collective levels. At individual levels, we have explored how people become motivated and capable to make responsible and autonomous energy-related decisions, also considering the opportunities and challenges they face in doing so. At collective levels, we were interested in how ENCI initiatives support collective efforts to become active actors in the energy system. We follow Coy et al. (2021) in defining **empowerment** as the processes by which individuals and communities increase their contextual capacities and power to achieve goals, leading to transformative action. **Motivations** are a key element in the processes of empowerment. Empirically, we have found several motivations that play a key role in becoming involved in efforts to

achieve a cleaner and more sustainable energy system, both at individual and collective levels. The disconnect experienced in the current set-up of the energy system, where decisions are made at distant levels, generates a sense of dependency and lack of autonomy that motivate people to gain control over their own energy-related decisions, either partially, or totally, by striving to achieve energy self-sufficiency. There is a strong sense of a need to exercise some control over political decision-making that affects energy provision and consumption. For many, the starting point is the search for autonomy to engage, individually and collectively, in making informed energy-related decisions that affect the individual and their environment.

The need for **autonomy** and control is also supported, in many cases, by a sense of deep concern for the climate crisis and a perception of inertia and disempowerment created by a host of institutional, knowledge based, governance and infrastructural barriers existent in the current system. A sense of personal responsibility, coupled with the drive to develop a capacity to act, motivates many of the interviewees to acquire the necessary resources to be able to actively participate in transforming the energy system at household, community and wider energy system levels. Once people start on this path of change and transformation, the experience of control and impact in acting in line with their values, and of doing something meaningful at individual or collective (community) levels, contribute to a sense of satisfaction that continues to motivate efforts to develop the knowledge and skills to act as a responsible energy citizen. Additional individual benefits of action, such as savings and better health and wellbeing, also contribute to maintain motivations.

- **Energy citizenship initiatives form an important context in which people find the necessary resources to achieve the autonomy, voice and capability to participate in energy system transformation.** Initiatives act as providers of different types of resources that support empowerment and counteract the sense of disconnect and disempowerment experienced in a system where citizens are relegated to the role of passive consumers with limited influence over which type of energy they can use, how energy is produced, distributed and consumed and how decisions are made to address key environmental, economic and social problems such as climate change, energy prices, energy poverty or energy injustice. They provide access to material resources, by jointly financing renewable energy production and consumption, or supporting the acquisition of resources through public grants. Access to the right knowledge and expertise is also an important resource, as initiatives involve participants, or provide access to high levels of technical, infrastructural, but also financial and political expertise. They build networks with other relevant actors, thus amplifying access to necessary knowledge and expertise. Access to knowledge enables people to take control of their consumption and energy-related decisions, thus becoming one of the main motivators for taking part in an initiative. Personal and professional experiences, together with specific energy system training, enable decision-making about lifestyles and consumption and open possibilities for them to initiate projects through which they can shape the current energy system. They also provide opportunities to become engaged in educational efforts beyond the initiative itself, which further contributes to a sense of impact and influence over the wider energy system. **This push by early adopters exerts an important influence over late adopters.**
- **The importance of trust.** Another important category entails access to democratic

and participatory decision-making structures, where the capacity to voice concerns and influence the energy system can develop. Initiatives provide a context in which to exercise political rights and thus practice one of the key features of energy citizenship, through collaborative and participatory governance structures. They also act as a collective actor exercising influence over the wider energy system, by engaging in political action and activism at different levels of government. They act as emissaries that voice the concerns, values and desires of a wider community. Although sometimes they attempt to implement close-to-ideal participatory and egalitarian governance structures, initiatives encounter certain obstacles in maintaining such structures and ensuring their functioning over time. Individual resources such as available time, willingness to dedicate effort or adequate knowledge act as limitations, drive them to foster a diverse model of types of involvement. For those less interested in the most active forms of involvement, the establishment of trustful relationships between members is a key factor in making it successful and permitting a few to act on the different interests of the collective. Trust and appropriate communication structures enable a sense of ownership to be maintained. This is also a key element of empowered energy citizenship.

- **Collective empowerment: the importance of belonging.** Finally, social resources contribute in many ways to maintaining motivation and active participation in energy citizenship initiatives. An encounter with others who share the same values and common purpose, enables a practical and psychological support to emerge which motivates a sustained involvement. The sense of greater power and control that comes with being a member of a wider collective is also an important social resource. The shared learning between equals, the sense that others can learn together from the expertise and experience of others contributes to generating a community of shared practices. The sense of belonging to a community of like-minded others, sharing a common journey, supports empowerment over time.

5.2 Conceptual advances

The empirical observations have led to further conceptual advances. Regarding the ‘frontrunner’ and ‘laggard’ categories and the notion of ‘advanced transition’, there is much to clarify about the terminology. Likewise, there is much unpacking to do, as the categories refer to a wide range of quite different empirical phenomena. Regarding the empowerment, the key advance is the development of an integrated conceptual model:

- **An integrated conceptual model of empowerment.** Through theoretical development and empirical research (Cf. previous section), an integrated model of empowerment has been proposed with the following dimensions: key conditions fostering empowerment, and key outcomes of empowerment. Energy citizenship is enacted through responsible and sustainable energy behaviour, as well as through the capacity to meaningfully participate in decision-making shaping a new and more sustainable energy system.
- These are possible through a motivation to act sustainably and to participate in initiatives that have the objective of shaping the energy system. This is achieved by gaining autonomy, by acquiring the knowledge and capabilities for action, and by becoming able to exercise voice, control and impact over decision-making. These key



outcomes of empowerment are enabled by a set of conditions and resources. The ability to achieve these goals and deliver outcomes in terms of empowerment requires individual and community change (e.g. individuals and members of an initiative gaining resources, developing awareness of their views and rights, joining with like-minded individuals and groups) as well as structural change (e.g. addressing structural inequality, increasing agency and decision-making capacity, devolving power from institutions to communities). Collective empowerment is understood as the result of the mutual influence between the individual and the environmental systems in a framework of generation and mobilisation of material, knowledge, governance and power, and social resources that enable the outcomes mentioned above.

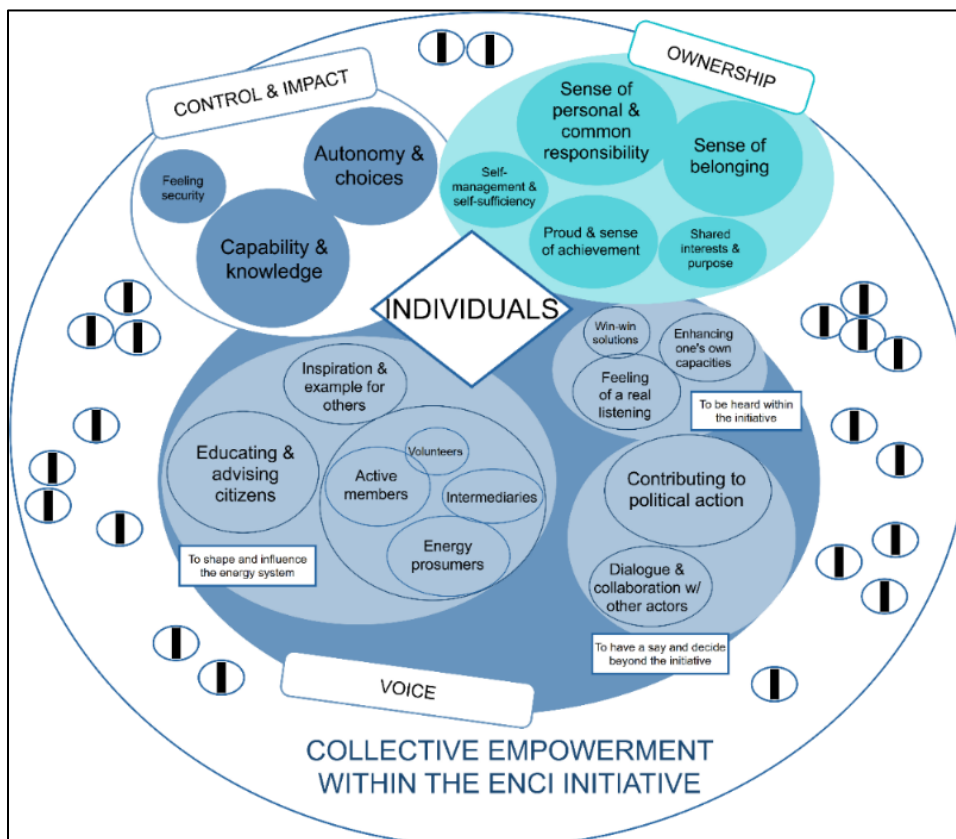


Figure 19: Collective empowerment model

- Individually and collectively empowered ENCI.** The experience of empowerment cannot happen in isolation from the social dimension. It *"is constituted through social interaction and is mediated by the construction of socially shared experience"* (Avelino et al. 2022:959). Empowerment is treated as a key element of ENCI. The deep transformation of roles in the energy system comes with new knowledge, new capabilities and skills, which in turn contribute to autonomy and the capacity to exercise control and impact over energy-related decision-making. New political capacities of meaningful participation in shaping the energy system are developed, both by exercising them within the ecosystem of energy initiatives and their participatory governance structures, by learning new participatory and political skills, and through the power of the collective as an actor in a wider energy system. Empowerment is understood as a psychological, social and political process (Avelino et al. 2022).

- **Phases in energy transition.** The idea that a next phase of transition has just started, or is about to start, has been expressed in many analyses of scholars, journalists and other commentators. This highlights analyses focused on the ‘end of the subsidy era’ (Brown et al. 2019), the attention to ‘followership’ rather than leadership (Geels 2021), and the increased attention to individuals, communities, regions, industries and countries that are ‘left behind’ in the energy transition. Likewise, the focus of many ENCI projects appears to be on institutionalization, further diffusion of innovations and on reaching out to a broader range of citizens, more than experimentation and invention.
- **The sociological diversity within the ‘frontrunner’/ ‘laggard’ categories.** The categories of ‘frontrunners’ and ‘laggards’ have normative connotations. The former has a hint of elitism and of self-acclaimed merit. Radtke & Ohlhorst (2021) explicitly address how ENCI remains to a certain degree restricted to ‘elite-clubs’, and this is an incisive reframing of the ‘laggard’ category. Meanwhile, the adjacent innovation diffusion categories of the ‘early and late adopters’ have less of the evaluative connotations. By contrast, the category of ‘laggards’ proves to be sensitive as an explicitly dismissive term. The innovation-oriented language of transitions seems too crude to express the diffusion of social innovations such as ENCI. The elaborations of empowerment processes clarify why: This kind of innovation revolves around issues of trust, identity, sense of belonging, and collective empowerment. The ‘laggard’ category individualises states of empowerment that cannot be attributed solely to individual choices and behaviours. It is also problematic as it presupposes a singular transition from A to B, a ‘racetrack’ as Stirling (2011) expressed it vividly, and this denial of transitions directionality is in strong contradiction with the normative complexity of ENCI (Cf. Chapter 3): *Lagging behind with regard to what, precisely?* Likewise, one can distinguish frontrunners regarding various ENCI objectives. In Vadovics et al. (forthcoming) we describe the ‘sustainable ENCI’ category, referring to ENCI that explicitly aims to contribute to an energy system that is just, equitable and within the planetary boundaries. It is worthwhile to consider what ENCI the innovation-theoretical ‘laggard’ category could correspond with. For example, relevant reframing corresponds with the notions of ‘vulnerable’, ‘disempowered’, ‘disadvantaged’ or ‘marginalised’ social groups. One can also consider the analyses of the inclusion of social groups, such as Jaradat et al. (2024) on the youth: ENCI, or passive consumers? Meanwhile, there are various actors and groups that arguably can be considered ‘laggards’: Opportunists joining the bandwagon without really subscribing to ENCI ideals, free-riders on others’ ENCI initiatives, or governments limiting themselves to tokenist ENCI policies. The innovation diffusion categories of the ‘frontrunners’ and ‘laggards’ do refer to distinct ENCI phenomena, and they do refer to different kinds of ENCI initiatives (Cf. Figures 16-18) – yet it needs to be borne in mind that these categories are not entirely fitting with social innovation such as ENCI - and underneath them, there is a considerable sociological diversity.

5.3 Conclusions

Which are the 3 key insights on this aspect of transition dynamics?

- 1) **ENCI initiatives remain centred around the ‘frontrunners’, yet there is a significant share of cases beyond this category.** We have empirical data (N=40 case studies) on ENCI initiatives that we characterised as ‘frontrunners’/ ‘followers’/ ‘laggards’. Certain individuals/initiatives in these studies are currently considered as ‘frontrunners’, others have been pioneering and now witness how their initiatives are being taken up by followers, others are only just becoming involved. The case studies have also shown examples of individuals and groups who are somehow still struggling to become active energy citizens. These observations coincide with the rise of EU-wide empowerment policies (Cf. section 5.1) that explicitly reach beyond the ‘frontrunner’ citizens and social groups. Likewise, we have observed how many ENCI initiatives develop strategies for next-phase transition. The idea that a next phase, or advanced stage, of transition has started can thus be substantiated not only through policy visions and expert analyses, but also through the (changing) strategies of ENCI initiatives.
- 2) **The sociological diversity within the ‘frontrunner’/ ‘laggard’ categories.** The categories of ‘frontrunners’ and ‘laggards’ have normative connotations. The innovation-oriented language of transitions seems too crude to express the diffusion of social innovations such as ENCI. The elaborations of empowerment processes clarify why: This kind of innovation revolves around issues of trust, identity, sense of belonging, and *collective* empowerment. The ‘laggard’ category individualises states of empowerment that just cannot be attributed solely to individual choices and behaviours. The categories do have relevance, however. This speaks from closely related notions of ‘vulnerable’, ‘disempowered’, ‘disadvantaged’ or ‘marginalised’ social groups. Meanwhile, there are various actors and groups that arguably can be considered ‘laggards’: Opportunists joining the bandwagon without really subscribing to ENCI ideals, free-riders on others’ ENCI initiatives, or governments limiting themselves to tokenist ENCI policies.
- 3) **The importance of collective empowerment.** Our N=40 cases provide empirical data/conclusions on empowerment and disempowerment. This sheds light on the micro-level mechanisms of ENCI, notably on the processes through which people become frontrunners, followers, late adopters – and through which processes (and lack of empowerment) they remain laggards. The importance of collective empowerment, in its various aspects outlined in section 5.1, is a significant advance in our understanding of ENCI transition dynamics. It indicates how this kind of innovation may be carried by individuals but is shaped by inter-individual relations. This insight adds to the agenda for psychological aspects of transitions as developed by Bögel & Upham (2018) amongst others.

Chapter 6: ‘Landscape’ developments and context factors

6.0 Introduction

Earlier chapters have specified the kind of innovations the ENCI concept outlines and highlight their reformative and transformative potentials. These observations have also shown how the emergence, survival and flourishing of ENCI initiatives differs across geographical contexts. Taking a long-term, systemic perspective on the matter, transitions research calls attention to the ‘landscape’ in which ENCI develops. Figure 20 visualises socio-technical ‘landscape’ as slowly developing trends, long waves, in society. They cannot be influenced easily – one can think of structures such as individualisation, the ICT revolution, globalisation (Dobson & Valencia 2013), the rise of sustainable development as a strategic concept, but also of relatively sudden crises such as the COVID19 pandemic or the Russian invasion of Ukraine. These landscape developments create pressures on the prevailing socio-technical ‘regimes’. In Europe, the Ukraine crisis has evoked acute concerns over energy security. Posing problems and new situations, these landscape developments may provide certain ‘windows of opportunity’ for ENCI initiatives – either as reformative patches for an energy regime under pressure, or as more transformative moves towards ‘just’ and sustainable energy systems. Likewise, landscape developments may also take the form of adverse trends and shocks: The COVID19 crisis provided certain windows of opportunity for new practices, but many of those closed soon after, as societal actors aimed to recover and get back to normal. A key question on ENCI transition dynamics is therefore the following: *Which are the key developments in the ENCI ‘landscape’?*

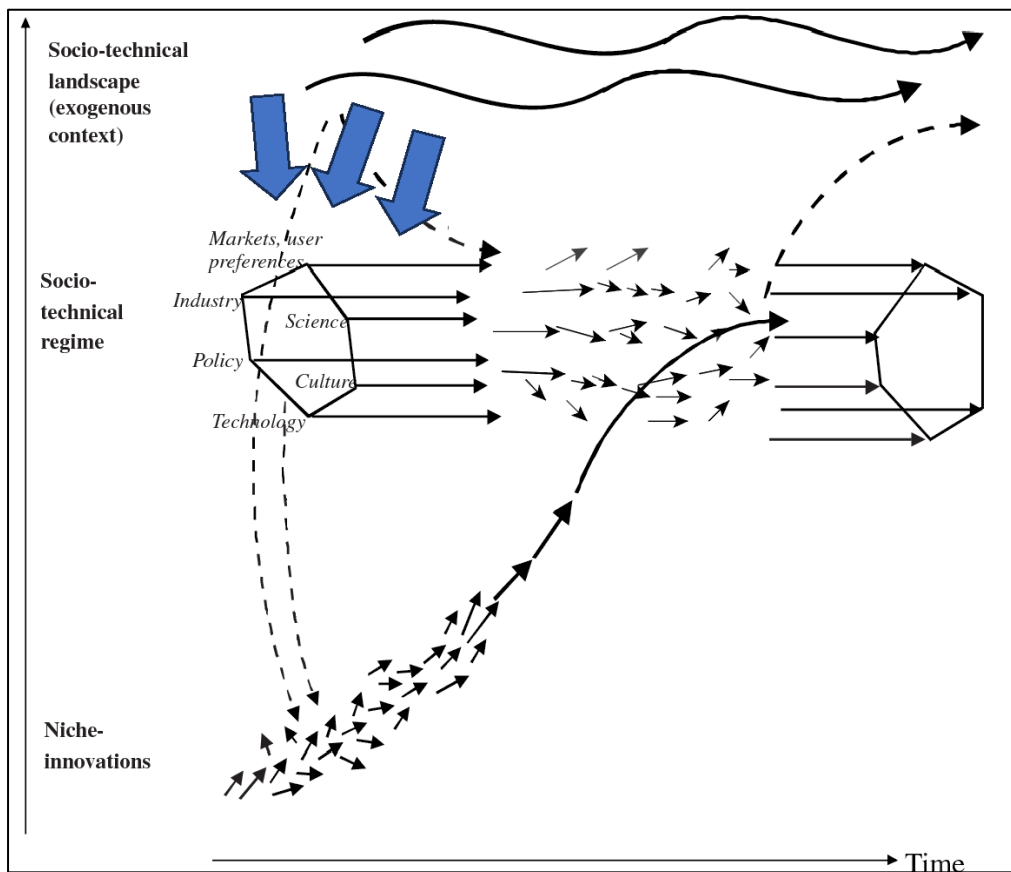


Figure 20: ‘Landscape’ developments and PESTEL factors

6.1 Empirical advances

Empirically, we have investigated the ENCI landscapes through PESTEL analysis: “*What are the Political, Economic, Social, Technological, Environmental and Legal factors at the EU level that are impacting ENCI?*” The analysis of these factors³ sought to find a balance across the three types of ‘landscape’ dynamics distinguished by Van Driel and Schot (2005) and Geels (2011): 1) factors that do not change (or that change very slowly), such as physical geography, 2) rapid external shocks, such as the rise of fossil fuels prices associated with the Ukraine war, and 3) long-term changes in a certain direction (trend-like patterns), such as demographical or cultural changes. Investigating context factors in an open, explorative way, the PESTEL also comprised factors and developments that can be understood as features of socio-technical ‘regimes’ – this is particularly evident in the analysis of legal factors.

The PESTEL analysis started from an analysis of the overall EU context, investigating generic factors (Debourdeau et al. 2022). This analysis identified and elaborated the impact exerted by a total 32 factors and 96 sub-factors for the 6 PESTEL letters⁴. This step underlined the ambiguous, unexpected and contradictory effects that of these factors on the various forms of ENCI (Cf. Ch.3 on the ENCI typology). Rather than providing clear-cut barriers or opportunities, the factors proved to operate often as opportunities for some ENCI variations and as threats for others.

The generic analysis on the EU level specified the 6 PESTEL factors into 25 more specific factors and 97 subfactors. After subsequent merging and condensation into 32 factors, the comparative analysis has addressed national contexts in nine EU countries (Hajdinjak et al. 2023). This comparative analysis proceeded along the following breakdown of PESTEL factors:

- **Political landscape:** Energy transition objectives and goals; energy governance; political support for ENCI; democratic culture and traditions; inclusion and empowerment policies.
- **Economic landscape:** General economic situation; energy markets; economic policy instruments; financing and investment opportunities; energy supply security.
- **Social landscape:** Wealth disparity and energy poverty; energy literacy; citizen engagement; trust in institutions and collective endeavours.
- **Technological landscape:** Availability of technologies; digitalisation of the energy system; smart mobility and green mobility; energy efficient buildings.
- **Environmental landscape:** Climate vulnerability; availability of resources; pollution; land use.
- **Legal landscape:** Legal framings of ENCI forms; legal measures for vulnerable consumers, energy poverty and social inclusion; rights and duties of participants in the energy system; bureaucracy.

³ The PESTEL analysis was based on the following sources: 1. Laws, regulations, strategies, directives, decisions, and other legally binding documents. 2. Priorities, plans, recommendations, opinions, guidelines, communications, declarations and reports published by the EU and national institutions. 3. Grey literature such as studies, reports, surveys, etc. 4. Statistical information pertaining to the energy domain. published by EUROSTAT and national statistics institutes.

⁴ Analysis through AHP and DEMATEL methods helped to estimate the relative importance of factors and subfactors, either taken in isolation or with regard to the whole system of factors (Debourdeau et al. 2022).

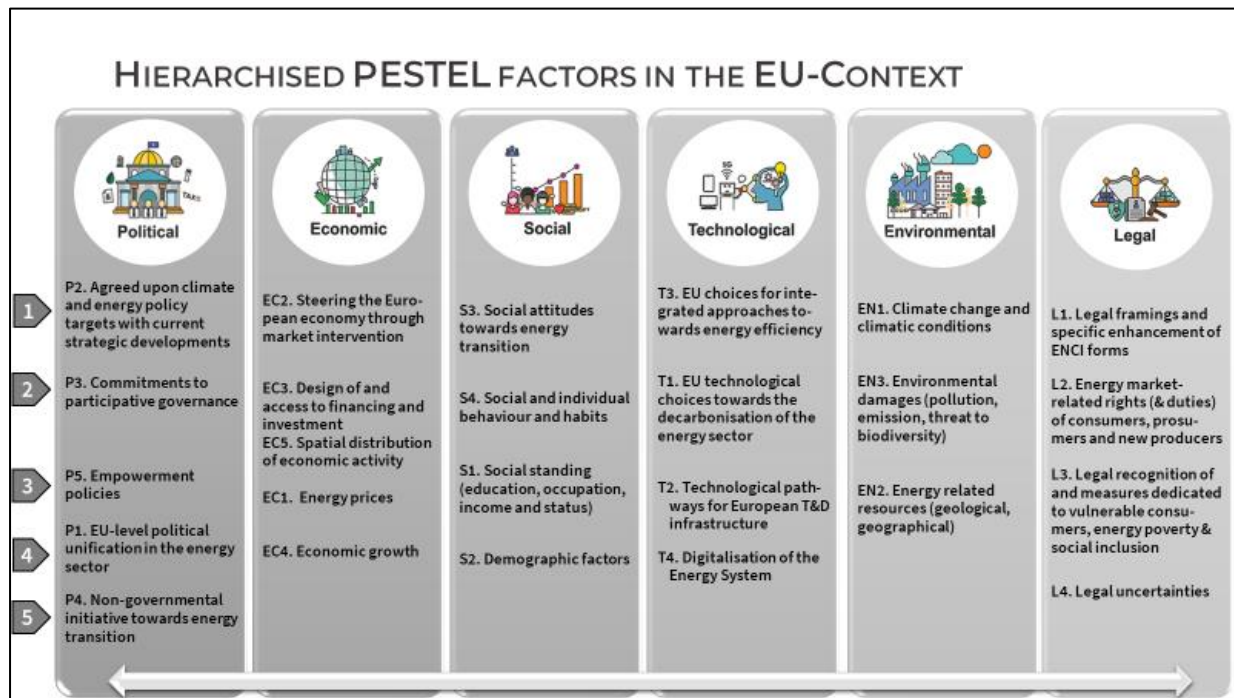


Figure 21: Relative importance of PESTEL factors for ENCI. (Debourdeau et al. 2022: 90-92)

Generic factors: The importance of the Political-Economic-Legal institutional contexts.

The relative importance of these factors, and the less obvious importance of Social, Technological and Environmental factors, is an overall key insight on the ENCI landscapes. This is perhaps surprising considering the analyses that describe ENCI as material participation, i.e. as a form of citizenship that evolves through individuals' material-technological contexts (Ryghaug et al. 2018). The political framework appears to be the most important context shaping ENCI – both at the EU and the country level. Clearly defined and realistic energy transition goals and genuine political support for ENCI enable and stimulate active participation of citizens in decision-making processes. The economic factors are just as important and impactful as the political ones, but they are far more ambiguous. Whether they act as a driver or as an obstacle to ENCI largely depends on their interaction with the political and social factors. The legal factors have a very important role on the level of individual countries. Surprisingly, the common EU legal framework appears to play a much more limited role in the development of ENCI. Although the EU energy law usually entails obligations for the member states, the enactment and implementation of the legislation remains in many ways a prerogative of the member states, even more so as the EU body of law continues to lack a clear view on energy citizenship and has yet to define how to govern and support it. The social factors are a peculiar set of ENCI-impacting conditions. The well-established behaviour patterns, beliefs, opinions and social positions of citizens have a commanding influence over how individuals or communities respond to other factors. In a way, the social factors often delineate where and how other factors can 'operate'. The social factors are also the only group of factors where we can observe clearly pronounced differences between older and newer EU member states. In the latter, aspects such as (low) energy literacy, citizen engagement and trust in institutions are considerable ENCI constraints. Technological and environmental factors seem to have a rather auxiliary role as motivators or enablers of ENCI, but they rarely qualify as indispensable.

The ambiguity of influencing factors: Factors such as rising energy prices, natural disasters or structural energy poverty may raise awareness, sense of urgency and motivation towards collective ENCI initiatives – yet the same factors may also lead to resentment, resignation and retreat. No group of factors can be described as fully supporting or fully hindering the emergence and development of ENCI. Even the political factors are not straightforward 'drivers' of ENCI. They may (and in fact often do) give priority to particular aspects of ENCI and to different target groups, which carries the risk of leaving certain ENCI manifestations outside the reach and even cancelling out the bottom-up initiatives towards ENCI. Depending on their correlation with other factors, notably social and political, the economic factors can either contribute to the proliferation of individualistic-consumerist forms of ENCI, or can support the development of its collectivist forms, such as the renewable energy cooperatives. The economic factors also tend to deepen, rather than alleviate, the inequality and energy poverty, and can lead to social unrest and politicisation of the energy agenda. The social factors may appear to play only a moderate supporting role but can be a truly strong disruption and a barrier for energy citizenship. Some environmental factors act out very differently across the EU, although in a different way. For example, two factors that have an important influence on the ENCI are availability of energy-related resources and the climate change. While the former is a very stable condition that changes slowly, if at all, the climate change and environmental damages necessitate rather quick life-style changes in some countries, especially in southern Europe.

6.2 Conceptual advances

The analysis of ENCI landscapes has yielded an extensive data-set. During the data gathering on PESTEL factors, a range of conceptual insights and questions has come up. Key advances were the following:

- The ENCI 'landscape': across socio-technical, socio-economic or social-ecological framings.** The 'landscape' is a notoriously fuzzy category in transitions studies. It is difficult to draw a hard line between these external factors and the internal dynamics of socio-technical 'regimes' – which from the viewpoint of ENCI 'niches' should be considered as external as well. The multi-level perspective on transitions does not refer to 3 sharply separated, hierarchical levels: The y-axis of the MLP diagram indicates a continuum. Recent work on 'deep' transitions has shed some more light on this continuum of societal developments that structure each other. These studies helps to understand ENCI against the historical background of industrial modernity (Schot & Kanger 2018), and of socio-economic developments such as the marketisation of society, liberalism, emancipation, and changes in employment relations (Kemp et al. 2022). Similar studies in the history of technology help to situate the recent rise of ENCI in the historically evolved engagements with the risks of technological systems (Fresso 2012), and in society's slow-motion lapse into the so-called 'enslavement to electricity' (Dubey & Gras 2021). These different historical angles only underline the basic difficulty to be very systematic about the context factors that matter – *is ENCI to be treated as primarily a social or socio-economic phenomenon, as a socio-technical phenomenon, or indeed in social-ecological terms, as a stage in human-environment relations (Dobson & Valencia 2011)?* The PESTEL framework is theoretically agnostic about this. Comprising elements of all of the

above ENCI conceptualizations, it has served as a useful heuristic for broad scoped data gathering that cuts across socio-technical, socio-economic or social-ecological framings. It has crucially helped to operationalise the ‘landscape’ concept for ENCI research: As indicated above, the 6 basic PESTEL categories have been elaborated into 32 more specific factors, further broken down into 96 sub-factors.

- **Temporalities of ENCI landscapes: The relevance of sudden shocks.** Developed originally as a tool for the assessment of business opportunities and location choice, PESTEL analysis is in principle focusing on present conditions and near-future developments. It can also serve strategic foresight analysis – anticipating barriers and drivers. Our application of PESTEL analysis to ENCI has similarly proceeded primarily as a scanning of present conditions, with a strategic outlook on contemporary dynamics and emergent trends. Reflection upon the empirical results has brought out the different temporalities across PESTEL factors, however: ENCI is clearly shaped strongly through the volatility of (energy) markets and sometimes turbulent processes of political decision-making, yet it is also shaped by relatively stable social (trust in institutions), legal (ownership and constitution of organisational forms) and environmental (awareness of ecological vulnerability) factors. As indicated above, various long-term processes of historical sedimentation are of obvious relevance, and the stable factors do matter a lot to contemporary ENCI developments. Still, notwithstanding the importance of the stable factors, ENCI landscapes also display a very high sensitivity to sudden shocks (Cf. van Driel & Schot 2005; Geels 2011). Important ‘landscape’ developments that manifested in ENCI initiatives across Europe were the (aftermath of) the COVID19 pandemic, the political-economic ramifications of the Ukraine crisis, and the occurrence of extreme weather events (droughts and floodings). This relevance of sudden shocks seems to be in line with the explorations of so-called ‘game-changers’ in social innovation (Loorbach et al. 2016).
- **Specifying ENCI ‘barriers’, ‘drivers’: ENCI as unstable explanandum.** The analysis of barriers and drivers for ENCI has brought out many equivocal effects, unintended consequences, interdependencies and co-determination. The pressures of extreme energy prices can raise awareness and stimulate ENCI-related action, yet it can also create disempowerment, resignation and calls for strong government-led actions that run against ENCI ideals (e.g. calls for reinvigoration of nuclear energy development). This complex causality is arguably the common assumption in transitions studies (Geels 2022), and it reminds us of the crucial interactions between the 6 PESTEL factors: The very notion of the socio-technical ‘regime’ (Cf. Chapter 3) indicates that these supposedly distinct factors are to be understood as intertwined dimensions of societal structures such as the energy system. Beyond this general point about the complexity transition dynamics, our PESTEL analysis has also brought out the complexity of ENCI, however. Beyond the obvious examples of legal hurdles and financial incentives (Cf. Chapter 4 on intermediaries and ecosystems), few factors were clear barriers or opportunities. Much depends indeed on the social construction of events that could be seized as ‘game-changers’ (Loorbach et al. 2016). Moreover, our analysis of ENCI factors has raised a recurring issue of measurement and definition: *Barriers and opportunities for what, precisely? For which kind of ENCI?* As elaborated in Pel et al. (in progress), ENCI is an unstable explanandum. Many attempts to formulate ENCI causes, factors and mechanisms are therefore overly generic, or

even misleading. The same applies to the use of ENCI as explanans, i.e. as ‘lever’ towards certain transition outcomes: ENCI refers to a quite wide range of innovations, actions and more or less radical ambitions for change (Cf. Ch. 3).

- **Geography of transition: Energy cultures.** The analysis of ‘landscape’ factors has further underlined the context-sensitivity of ENCI. An earlier series of ‘regional translation’ workshops has already unfolded the different meanings that ENCI has across European contexts (Pel et al. 2022). The PESTEL analysis in Hajdinjak et al. (2023) has further developed this point, identifying marked differences across European ENCI contexts. In five of the nine studied countries (Belgium, Germany, Ireland, the Netherlands and Spain), between two thirds and three quarters of the analysed factors support the emergence and development of energy citizenship, while the remaining one third / one quarter of factors represent a barrier. In Bulgaria and France, the share of hindering/supporting factors is relatively equal, leaning slightly towards the latter. Two countries stand out: in Latvia, an overwhelming majority of factors act as facilitators or enablers of ENCI, while in Hungary, the conditions for ENCI appear to be very unfavourable. Compared to the other six countries, a much higher number of high impact factors hindering ENCI was observed in Hungary, Bulgaria and France. On the opposite end of the scale, Ireland is notable with 12 high-impact supporting factors (twice as many compared to other countries). Political factors have the most negative impact in Hungary, and the most positive effects in Ireland, Latvia and the Netherlands. Economic factors hinder the development of ENCI in Hungary, France and Spain, but appear to be predominantly conducive to ENCI in other six countries. Social factors appear to be particularly unfavourable in Bulgaria, Hungary and France, and overwhelmingly supportive in Germany. Technological factors do not represent a considerable barrier in any country and have above-average positive effect in Bulgaria and Ireland. Environmental factors are likewise not a major hindrance in any country, but do play a very positive role in France, Germany, Latvia, Hungary and Spain. Bulgaria and Hungary are the two countries where the legal factors prevent or slow down the ENCI development, while the most favourable legal framework appears to be found in Latvia and the Netherlands. It must be acknowledged, this comparative analysis of ENCI landscapes should not be taken as a ‘scoreboard’ of national contexts or as a set of robust factors to underpin ENCI policies – the earlier point about causal complexity should be taken seriously, and Debourdeau et al. (2022) and Hajdinjak et al. (2023) provide further methodological caveats. The comparative analysis does indicate marked differences across European contexts, however. This comparative analysis of national ENCI landscapes underlines the relevance of ‘energy cultures’ (LaBelle 2020, see also Pel et al. 2022 on regional translations of ENCI) as a key concept in the geography of transitions.

6.3 Conclusions

Which are the key insights on this aspect of transition dynamics, the ENCI landscape developments?

- 1) **The ENCI ‘landscape’: across socio-technical, socio-economic or social-ecological framings.** The ‘landscape’ is a notoriously fuzzy category in transitions studies. The PESTEL framework has served as a useful heuristic for broadly-scoped data gathering



that cut across socio-technical, socio-economic or social-ecological framings. It is theoretically agnostic about the relative salience of these angles on ENCI contexts. Comprising elements of all of them, the PESTEL framework has crucially helped to operationalise the ‘landscape’ concept for ENCI research: Its 6 basic categories have been elaborated into 32 more specific factors, further broken down into 96 sub-factors.

- 2) **Generic factors: The importance of the Political-Economic-Legal institutional contexts.** The relative importance of these factors, and the less obvious importance of Social, Technological and Environmental factors, is the overall key insight on the ENCI landscapes. The political framework appears to be the most important context shaping ENCI – both at the EU and the country level.
- 3) **Ambiguity of influencing factors: ENCI as unstable explanandum.** Factors such as rising energy prices, natural disasters or structural energy poverty may raise awareness, sense of urgency and motivation towards collective ENCI initiatives – yet the same factors may also lead to resentment, resignation and retreat. No group of factors can be described as fully supporting or fully hindering the emergence and development of ENCI.
- 4) **Geography of transition:** Notwithstanding the above caveat, the comparative PESTEL analysis has brought to light marked differences across European ENCI contexts. This is an important observation regarding the assumption of an ‘advanced stage of energy transition’ (Cf. section 3). It may be the case that energy transition processes across Europe have surpassed the early phases of experimentation and transition processes revolving around ‘frontrunners’ (Cf; Ch. 5), but this does not manifest equally across European contexts. The ‘advanced stage’ framing appears to reflect a Northwestern European bias, or in any case a lack of geographical sensitivity. The comparative analysis of national ENCI landscapes underlines the relevance of ‘energy cultures’ (LaBelle 2020) as a key concept in the geography of transitions.
- 5) **Temporalities of ENCI landscapes: The relevance of sudden shocks.** Various long-term processes of historical sedimentation (Fressoz 2012) and earlier ‘deep transitions’ (Kanger & Schot 2018) are of obvious relevance, and the stable factors do matter a lot to contemporary ENCI developments. Still, ENCI landscapes also display a very high sensitivity to sudden shocks (Cf. van Driel & Schot 2005; Geels 2011). Important ‘landscape’ developments, manifesting in ENCI initiatives across Europe, were the (aftermath of) the COVID19 pandemic, the political-economic ramifications of the Ukraine crisis, and the occurrence of various extreme weather events (droughts and floodings).

Chapter 7: ENCI futures through scaling and backlash

7.0 Introduction

A lot of ENCI research is future-oriented: *Where are we going? Where is ENCI heading? Will the current ENCI initiatives fade out, grow, or at least maintain themselves?* These are the key questions on ENCI from a transitions research perspective. As visualised in Figure 22, the MLP conceptualises these questions through a multitude of innovations (the arrows), and through phases of take-off, acceleration, institutionalisation and stabilisation. Current ENCI initiatives can be situated in the middle of the timeline, beyond the pioneering and take-off stages (Cf. Ch.5). This raises questions on ENCI futures: *Is the current advanced stage of transition, in which the transition ‘has become everybody’s business’, likely to be followed by consolidation, institutionalization and stabilization of the energy transition? Through which processes is ENCI diffusing and ‘scaling’?*

Figure 22 also accounts for the less favourable turns in the transition process, however. The red downward highlights the existing possibility of transition ‘backlash’ (Pel 2021), stagnating transition (Löhr & Mattes 2022), or socially divisive transition (Skjølsvold & Coenen 2021). They also signal possible negative feedback mechanisms that slow down the scaling of ENCI. It also indicates possible societal tensions and resentment that may surface during transitions. Whilst transitions research focuses on the advances towards sustainable systems, it also should note the emergence of unsustainable practices (Markard et al. 2023). The ‘next phase’ of the energy transition and the further development of ENCI, that also comprises the struggles of individuals, social groups and regions to keep up, and the mounting social tensions regarding fair distribution, inclusion, and entitlements to energy security. *Through which processes are ENCI initiatives landing into, affected by, or responding to, transition ‘backlash’ developments?*

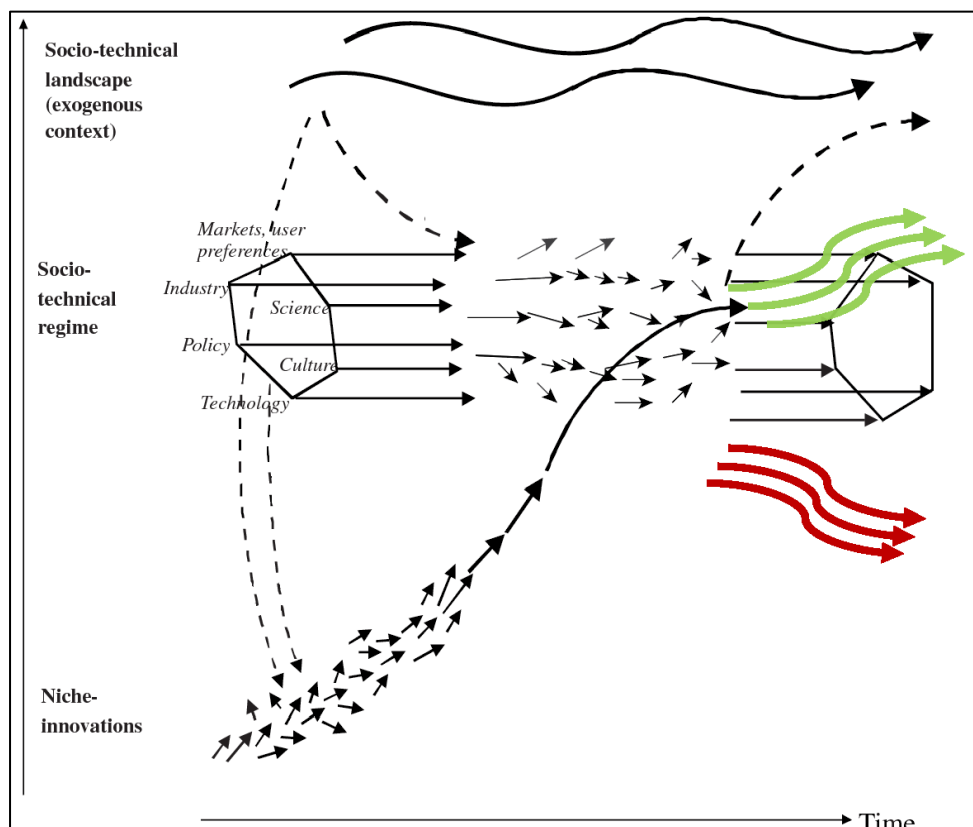


Figure 22: ENCI futures through scaling and backlash

7.1 Empirical advances

We investigated the scaling of ENCI, the upward trends in the MLP diagram, via case studies and workshops. By contrast, we have not systematically gathered data on ‘backlash’ phenomena. The main empirical advances on the ENCI futures are the following:

- **The particular importance of scaling ‘deep’.** We have gathered data on the scaling of ENCI – and more precisely the associated business and social innovation models (BSIMs) of ENCI initiatives - through 40 detailed case studies. Following Moore et al. (2015), we distinguished between processes of scaling up, scaling out and scaling ‘deep’.

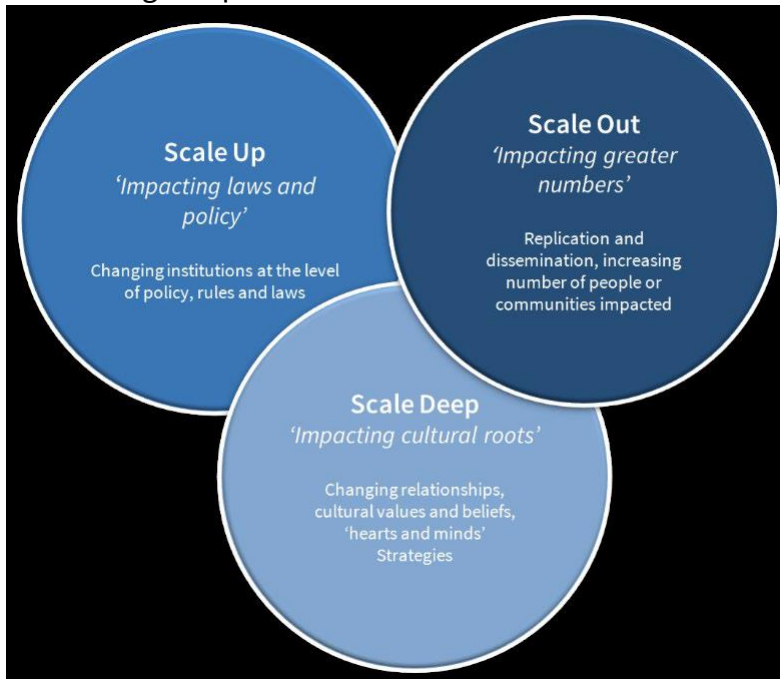


Figure 23: Scaling out, scaling up and scaling deep for social innovation (Moore et al. 2015)

The latter category seems particularly relevant for ENCI scaling. This reflects the typical ethical-political-cultural dimensions of these innovations (Correljé et al. 2022; Cf. Ch. 3). Figure 24 summarises our exploration of national strategies aimed at advancing ENCI within BSIMs (Debourdeau et al. 2023).

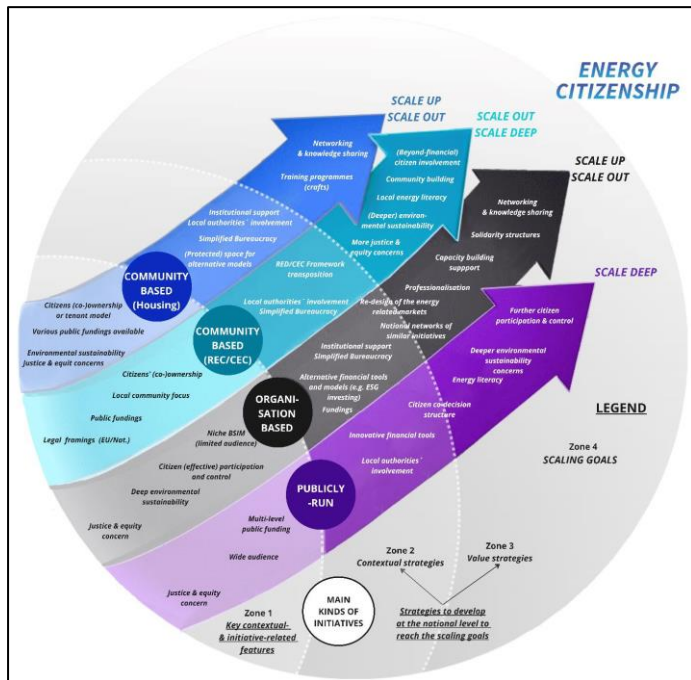


Figure 24: Parallel strategies for advancing ENCI by BSIMs clusters (Debourdeau et al. 2023:27)

- ENCI activities seldom entail disruptive institutional change.** We have explored/discussed the scaling of ENCI through five workshops on transformative agency. The analyses of transformative agency have conceptualised the scaling of ENCI similarly as the scaling of social innovations, yet with a relative emphasis on its transformative, *institution-changing* effects (Kemp et al. 2023). Following Strasser et al. (2019), this has been analysed in terms of widening, deepening and lengthening strategies (and framework conditions). In general, we came across relatively few examples of disruptive institutional change, in which the power of business and government is replaced by a logic aimed at social justice, community well-being and different ownership. Common institutional changes are about finding an institutional home for new ENCI activities (often for collaborative projects with other actors) and various forms of collaboration. An example of disruptive institutional change is the creation of A Citizen’s Fund (Shared energy fund) alongside the Charter that ensures that their citizen-oriented view on energy transition is part of the projects they contribute to finance. Another example is the creation of TEPOS (positive energy territories) in 2011. TEPOS was reappropriated in 2014 by the ministry of the environment to become "The positive energy territories for green growth". Collective initiatives are a source of empowerment. They encourage people to be active, informed citizens who are committed to a better world. Their influence goes beyond the growth of the initiatives (widening). They involve processes of deepening by spreading critical thinking and values of justice via webs of social relations and influence. Transformative change beyond the initiators takes time, they slowly enter the domains of government and business. We observe a greater attention to fairness after the energy crisis of 2020-2022, which led political parties and governments to pay more attention to energy poverty and aspects of justice in relation to the energy transition.
- Dispersed signs of ‘backlash’.** Without having studied it systematically, we have gathered data on transition ‘backlash’ phenomena through the N=40 case studies, through PESTEL analysis (Cf. Chapter 6), and through a series of 9 national ‘knowledge

exchange workshops'. These activities have yielded dispersed yet abundant observations of 'backlash'-related phenomena: First, the emergence and scaling of various non-governmental ENCI initiatives (Cf. Chapters 3 and 4 on their various forms and agency) indicates a certain disenchantment with a government-led energy transition that displays stagnation and lack of participation. ENCI can be considered a pacification of societal tensions (Ch.3), and a reaction to backlash effects of the transition process thus far. Another example is the case of the BBL home renovation campaign in Belgium, which calls for a broader scoped governmental policy – bringing home renovation within reach for less advantaged households. This is but one example of more widespread political mobilization against energy inequalities – of which the yellow vest movement in France is another prominent example. Another example is the case of Extinction Rebellion, which shows ENCI in the form of (non-violent) civil disobedience. As with the yellow vest, this movement amounts to a quite disruptive side of ENCI. Whilst these forms of disruptive social movements can be considered radical forms of ENCI that are roughly in line with ENCI-scaling and energy transition – in that sense not themselves phenomena of 'backlash'. There is also political mobilization on energy issues that can be considered as 'backlash': Prominent examples are the populist-right discrediting of energy transition policies (Thalberg *et al.* 2024), the reinvigorated emphasis on energy security as in the Swiss 2023 referendum, the increased calls for nuclear energy production, and the attempts to blame the increasing energy prices on leftist environmental policies. Finally, the national-level PESTEL analyses have called attention to key variables such as trust in public institutions and environmentally conscious lifestyles, which cast doubts on ideas of steadily scaling ENCI and continuously progressing energy transition.

7.2 Conceptual advances

The empirical observations on scaling have given rise to a range of conceptual questions on scaling. In terms of backlash, the challenge has been to connect and elaborate dispersed evidence through insights from literature. Overall, this has led to following main conceptual insights:

- **What is it that is scaling?** As indicated under the analysis of ENCI 'landscapes' (Ch.7), ENCI is an unstable explanandum. It is far from trivial to retrace the diffusion of ENCI in its various forms. Whether analysed in terms of transformative agency or in terms of scaling up, out and deep, a core challenge remains: Accounts of scaling, diffusion and 'contributing to transition' easily lose track of ENCI. In workshops, discussions on ENCI easily slip into considerations related to energy transition in general. One can similarly see how broadly scoped literature reviews can gather a lot of somehow ENCI-related 'factors' (Schlindwein & Montalvo 2023; Hamann *et al.* 2023). These tend to be factors however for a wide range of different ENCI-related innovations.
- **Scaling and the dialectics of change.** Our analyses of scaling have followed the overall inclination in ENCI scholarship to study ENCI from a micro-perspective (Ch.2). Despite our aims to overcome this pitfall, our empirical analyses have studied ENCI primarily from the perspective of ENCI initiatives, and to some extent



from the perspective of broader ENCI ‘ecosystems’ and intermediation processes (Cf. Ch3.). Reflecting upon the micro-focused empirics through insights on institutionalization (Cajaiba-Santana 2014), systemic ramifications (Kemp & Pel 2023), and indeed transition dynamics, the typical *dialectics* of ENCI have come to the fore: The transformative agency of ENCI actors depends on meso factors (networks of ENCI actors, platforms of interaction with other actors, collaborative projects with business, government and science), micro strategies (involving capacity building and critical thinking) and a host of macro factors (government programmes, soft laws on co-ownership of local energy, citizen rights, etc.). In general, transformative change in the form of more democratic and equitable relations is hard won, never totally transformative, and subject to government reappropriations.

- **Backlash: Limits to ENCI.** Various scholars have warned against naïve views on ENCI which ignore the societal conditions that *disempower* a would-be energy citizen (Swyngedouw 2005; Lennon & Dunphy 2020; Silvast & Valkenburg 2023). This has also been one of the starting points for our conceptualisation (Pel et al. 2022). The aforementioned ‘dispersed signs of backlash’ (section 7.1) have helped towards a sobering view on ENCI. The ENCI initiatives can be seen to develop despite various social-political crises that have been discussed extensively in news media under headers of populism, resentment, and polarization. One example is the newspaper report in the Dutch newspaper NRC (2023): "Belgians, Germans, Chinese, Portuguese - all making money from the solar energy in Berkelland". The report describes how supposedly citizen-oriented renewable energy production resulted in financial benefits for various non-local commercial players - pocketing subsidies and subsequently disconnecting from the communities and areas involved. In the province concerned this has led to a moratorium on solar farms in some rural areas. This is but one clear example of broader mistrust and political mobilisation against ENCI. Relevant elaborations of apparent ENCI limits and transition backlash have been ventured under the headers of ‘standby citizens’ (Amnå & Ekman 2014), the ‘dark sides’ of transitions (McGowan & Antadze 2023) and social innovation (Pel et al. 2023). Specific sources of backlash could reside in ENCI remaining limited to elitist civic action (Radtke & Ohlhorst 2021), in persistent energy inequality (Klitkou et al. 2023), in the undesirable side-effects of the prosumer technologies (Sovacool et al. 2021) and in the vulnerability to ‘capture’ by opportunistic entrepreneurs and commercial actors that jump on the bandwagon of decentralised energy production (Brown et al. 2020). Ideologically, ENCI may denote a shift away from consumerism and commercialisation (Devine-Wright 2007), but a lot of money is involved in its practical materialisation. In the end, many of the indicated phenomena of transition ‘backlash’ may be retraced to inherent limits of citizenship. Bauwens & Defourny (2021) discuss for example how many ENCI initiatives revolve around mutual rather than public benefit. Energy citizenship is perhaps a rather particularistic, localised, anthropocentric form of citizenship, very different from the universalistic, cosmopolitan and ecocentric ethics of *environmental* citizenship (Dobson & Valencia 2013).

7.3 Conclusions

Which are the key insights that we have developed on this aspect of transition dynamics?

- 1) **Scaling up, out and deep: The particular importance of scaling ‘deep’.** This reflects how ENCI involves social innovations that revolve around ethical-political-cultural changes (Cf. Ch. 3). Figure 24 summarises our exploration of national strategies aimed at advancing ENCI within BSIMs (Debourdeau et al. 2023).
- 2) **Transformative agency: ENCI activities seldom entail disruptive institutional change.** The analyses of transformative agency have conceptualised the scaling of ENCI similarly as the scaling of social innovations, yet with a relative emphasis on its transformative, *institution-changing* effects (Kemp et al. 2023). Following Strasser et al. (2019), this has been analysed in terms of widening, deepening and lengthening strategies (and framework conditions). In general, we came across relatively few examples of disruptive institutional change, in which the power of business and government is replaced by a logic aimed at social justice, community well-being and different ownership.
- 3) **Backlash: Limits to ENCI.** ENCI is also a phenomenon that highlights the socio-cultural-political potentials for transition backlash. The emergence of civil disobedience, of populist and right-wing extremist engagement with energy issues (Thalberg et al. 2024), the increasing framing of energy issues in terms of energy inequality, energy poverty, energy justice, the apparent tensions between privileged elites and disenfranchised groups – these indicate certain cleavages, tensions and potentials for (temporary or more sustained) backlash. The backlash may be related to the fragile state of contemporary citizenship more generally (Amnå & Ekman 2014). Energy citizenship is perhaps a rather particularistic, localised, anthropocentric form of citizenship, or at least not confined to the universalistic, cosmopolitan and ecocentric ethics of *environmental* citizenship (Dobson & Valencia 2013).
- 4) **The dialectics of backlash and ENCI scaling.** it is not obvious what constitutes ENCI-scaling/advancing transition, and what constitutes stagnating ENCI/ transition backlash. ENCI is normatively complex, it involves a diversity of ideals and objectives (Pel et al. *in progress*). It comprises multiple forms and innovations and has systemic significance beyond energy transition processes (Ch. 3). Neither upscaling nor backlash can therefore be indicated through clearcut arrows in the MLP diagram: The y-axis is under-determined. To help understand ENCI futures it is useful to take the distinguished scaling and backlash processes as elements of a dialectic process: Backlash dynamics may for example lead to government inaction, which in turn could incite energy citizenship in the form of civil disobedience or of ENCI at the workplace (Leygue et al. 2017) - to compensate for government inaction. Taken together, the scaling and backlash dynamics thus give rise to optimistic as well as pessimistic futures, and especially to futures unfolding through simultaneous, mutually contradicting trends. This is another way to understand the tensions underlying the proclamation of an ‘advanced transition’ – on the one hand it holds the encouraging message that the transition is now everybody’s business, and that it can be taken as a

rather uncontroversial societal fact⁵ – on the other hand, it is the point where apparent limits of citizenship are encountered, and where the course and consequences of that ongoing transition become central topics of political debate.

⁵ Such framing of the ‘advanced transition’ as irreversible and rather incontestable was brought forward by several presenters during the webinar ‘Energy Union 2.0. to deliver the European Green Deal, organised by the Jacques Delors Institute on 6/12/2023. This underlines the relevance and potential performativity of the ‘advanced stage transition’ notion.



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