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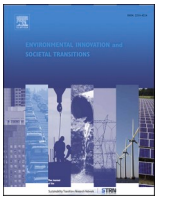

Research article

Blending in, to transform the regime from within: Niche hybridisation strategies of Irish energy communities

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ABSTRACT

This study aimed to get a better and more nuanced understanding of niche strategies in practice. Niche hybridisation strategies were conceptualised in relation to the three core dimensions of socio-technical systems (institutions, actors, and technology). This conceptualisation was applied to the case of Community Power (CP). CP is a community-owned supply company that combines elements of cooperative and commercial organisations, favoured by the community energy (niche) and commercial (regime) logics. CP was set up to enable energy communities to sell energy to their members and on electricity markets. As such, CP protected energy communities from market pressures, which allowed them to blend in and become more competitive within an unchanged selection environment. By stimulating wider diffusion of the community energy logic, CP attempted to passively stretch the regime. CP also tried to actively stretch the regime by engaging in institutional entrepreneurship, to make it more favourable towards community energy.

1. Introduction

Prevention of catastrophic climate change impacts requires radical transformation of the energy system. Around the world many projects are initiated to experiment with- and further develop radical innovations that could contribute to transitions (Sengers et al., 2021, 2019). The Sustainability Transition literature emphasised the importance of both socio-technical experiments and niches as loci for systemic change (Kemp et al., 1998; Schot and Geels, 2008; Van den Bosch, 2010). Decades of research in the field of sustainability transitions, however, showed that only a few exceptional radical niches survive, let alone become mainstream and contribute to actual transformation (Pel, 2015; Wittmayer et al., 2021).

Literature in the field of Sustainability Transitions distinguishes two different niche empowerment strategies through which niches can scale up and realise wider transformative impacts. Either the niche adapts to fit in the regime (fit & conform) or they aim to transform the socio-technical regime to make it more favourable towards the niche (stretch & transform) (Hoogma et al., 2002; Huijben et al., 2016; Meijer et al., 2019; Petzer et al., 2019; Smith and Raven, 2012).

However, studies on niche empowerment concluded that in reality niche strategies are much more diverse and do not fit neatly in the fit & conform and stretch & transform dichotomy (Huijben et al., 2016; Meijer et al., 2019; Mylan et al., 2019; Raven, 2007; Smith et al., 2014; Van Summeren et al., 2021; Wesseling et al., 2020). There is a need for more nuanced theoretical perspectives to grasp the

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complexity of what happens in practice. The early work of Raven (2007) on niche hybridisation strategies provided an interesting research avenue, which, however, so far received little attention from transition scholars. Based on the work by Raven (2007), a niche hybridisation strategy is defined as adapting to or mimicking incumbency to blend in the regime, while preserving parts of its deviant nature, which potentially allows the niche to become more competitive and transform the system from within (Raven, 2007). In contrast to the fit & conform and stretch & transform dichotomy, a niche hybridisation is considered to be a fit & transform or fit & stretch strategy (Hoogma, 2000).

This paper expands the conceptualisation of niche hybridisation strategies by Raven (2007) and applies it to the case of 'Community Power' (CP), an Irish community-owned energy supply company. CP was set up to empower Irish energy communities, who, despite growing policy support on both national (DCENR, 2015) and European levels (European Commission, 2019), still face severe barriers for both developing their own renewable energy (RE) projects and for receiving revenues for RE fed back to the electricity grid. As a result, the share of community-owned renewable energy remains rather low.

One of the exceptions is Templederry Wind Farm (TWF), which was the first community-owned wind farm in Ireland. It took twelve years to develop the wind farm, mainly due to challenges regarding the securing of planning permission, grid connection and funding (Van Summeren et al., 2020). The revenues were used to develop their own supply company: Community Renewable Energy Supplier (CRES), which evolved into 'Community Power': a large-scale energy supplier owned by multiple Irish energy communities, enabling them to sell generated energy to their members and on the energy market. This potentially allows energy communities to become more competitive and have wider transformative impacts. Hence, establishing CP was key to the strategy of TWF and its partners to strengthen the Irish community energy sector.

The community energy sector can be understood as a socio-technical niche (Dóci et al., 2015; Seyfang et al., 2014). Because energy communities are driven by different values and principles, they are believed to be important seedbeds for innovation (Hielscher et al., 2013; Seyfang and Smith, 2007) and effective vehicles for realising public acceptance and citizen engagement concerning decarbonisation efforts (Dóci et al., 2015; Seyfang et al., 2013). As such, energy communities might have an important role to play in the ongoing (Irish) energy transition.

Conceptualising niche hybridisation strategies and applying it to this case allows for empirically investigating the niche hybridisation strategy of CP, to get a better and more nuanced understanding of niche strategies in practice. This leads to the following research question:

How does a niche hybridisation strategy facilitate the growth and empowerment of the community energy niche?

In Section 2, a conceptual framework is developed that provides a new way of thinking about niche hybridisation strategies. Section 3 describes the research methodologies. Section 4 presents the results of the empirical analysis. Finally, Sections 5 and 6 respectively discuss the results and present the main conclusions.

2. Hybridisation in sustainability transitions literature

Research on sustainability transitions showed that in the process of radical change of systems of provision such as energy, alternative niches offer solutions to regime problems but imply a fundamentally different organisation of systems. These niches, however, do not simply replace a socio-technical regime, which is understood as "*the most highly institutionalized core of a socio-technical system*" (Fuenfschilling and Truffer, 2014, p. 776). Rather, transitions involve the introduction or translation of elements of the niche into the regime (Grin et al., 2010; Smith, 2007), often referred to as a reconfiguration process (Geels and Turnheim, 2022). In other words, the newly established regime is by definition a hybrid, as it combines elements from both the incumbent regime and the niche. Since systems in transitions are framed as socio-technical, their change implies a simultaneous transformation on three dimensions: institutions, actors, and technology (Fuenfschilling and Truffer, 2016; Geels, 2004; Geels and Turnheim, 2022; Rohracher, 2001; Van Summeren et al., 2021). Simultaneous change in these three dimensions is difficult, usually takes time, and is evolutionary. New constellations of actors may emerge before infrastructural changes or institutional adaptations are carried out. On other occasions, technological innovations emerge but wider diffusion requires society to adapt. The three dimensions can therefore be seen as spaces where hybridisation occurs before a new regime becomes established.

This opens up the possibility to influence the direction and constellation of these dimensions by niches, which are considered to be important loci for change (Kemp et al., 1998; Schot and Geels, 2008). However, niches that differ radically from regimes face severe challenges concerning their survival and diffusion, and for realising wider transformative impacts. It is therefore argued that successful mainstreaming of novel socio-technical configurations requires adaptation, alignment, or hybridisation on the niche level (Smith and Raven, 2012; Wittmayer et al., 2021). This is referred to as a niche hybridisation strategy (Raven, 2007), which is understood as a niche that blends in the regime by taking over elements from the regime, while preserving some of its own key elements. This allows the niche to survive and become more competitive within an unchanged selection environment, while also attempting to contribute to socio-technical transformation by introducing alternative institutional, actor, and/or technological elements into the regime.

Although in reality the institutional, actor, and technological dimensions are strongly interrelated, it is possible to take them apart for analytical purposes (Geels, 2004). This allows for exploring hybridisation strategies in relation to these three dimensions separately, as well as their mutual interactions.[1] Sections 2.1, 2.3 explore hybridisation in relation to the three dimensions. Section 2.4 presents the resulting conceptual framework that allows for investigating niche hybridisation strategies in practice.

[1] For extensive discussions on the interactions between institutions, actors, and technology see (Geels, 2004; Rohracher, 2001; Van Summeren et al., 2021).

Table 1
Overview of (elements of) regime and niche logics that can be combined in a niche hybridisation strategy.

	Elements	Description
Institutional logic	Institutional orders	Family, community, religion, market, state, profession, and corporation
	Goals	High-order goals of the field (embedded in institutional order(s))
	Means	Prescribed ways in which to achieve these goals (embedded in institutional order(s))
Organisations	Mission	What is the appropriate goal for an organization? Is the organisation aiming to create economic, social, and/or environmental value for customers, shareholders, specific groups, and/or society as a whole?
	Organisational form	What is the appropriate organizational form to achieve that goal? Examples of legal forms of organisations include: corporations, political organisations, cooperatives, and non-governmental organisations
	Governance and ownership	How is control legitimately exerted in an organization? Who owns the organisation? Who is involved in day-to-day and strategic decision making?
	Sources of legitimacy	What are the sources of professional legitimacy in an organization (e.g. expertise, contribution to mission)?
Technology	Favoured technology	What technologies are favoured by or constructed in line with different institutional logics? How are technologies (favoured by different institutional logics) combined into new socio-technical configurations?
	Infrastructure	Do socio-technical configurations rely on existing infrastructures for their functioning?

2.1. Hybridisation of institutions

Institutions are understood as rules that guide and coordinate perceptions and activities of actors (Geels, 2004). Hybridisation of institutions, however, has mainly been studied in relation to institutional logics (Battilana and Lee, 2014; Thornton et al., 2012; York et al., 2016). The institutional logics perspective is a novel metatheoretical framework for studying the interrelationships of institutions with individuals, and organisations in social or socio-technical systems (Fuenfschilling and Truffer, 2014; Thornton et al., 2012). Based on earlier work of Friedland and Alford (1991) and Jackall (1988), Thornton and Ocasio (1999) defined institutional logics as the "*socially constructed, historical pattern of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality*"(p.804).

The institutional logics perspective describes how institutions operate at multiple nested levels: society, field, organisational, and individual (Thornton et al., 2012). The societal level is referred to as the interinstitutional system (Friedland and Alford, 1991), which consists of ideal-type institutional orders of the family, community, religion, state, market, professions, and corporation (Thornton et al., 2012). These institutional orders each consists of various material practices and cultural symbols that influence behaviour of actors (e.g. how they organise themselves) (see Appendix A for a detailed overview of the institutional orders).

At lower levels, these institutional orders do not just constrain actors, actors also have the capacity to innovate by combining, translating, and adapting (modular) elements of different macro-level institutional orders (Thornton et al., 2012). In other words, actors can use the macro-level institutional logics as cultural toolkits, from which they can draw cultural symbols (ideation and meaning) and material practices (structures and practices), the two core elements of institutional logics. York et al. (2016) operationalized cultural symbols as goals and material practices as the means to achieve these goals. The application of elements (e.g. goals and means) from different institutional logics is referred to as hybridisation. This does not mean that actors can deliberately create new hybrid logics, rather, they can combine elements within hybrid organisations and technologies (see Sections 2.3 and 2.4). Institutional field logics are in turn the aggregates of the logics brought by organisations and technologies within the field (DiMaggio and Powell, 1983; York et al., 2016). Several semi-coherent field logics together form the socio-technological regime (Fuenfschilling and Truffer, 2014).

2.2. Hybridisation of actors

A variety of actors participate in and are studied in the context of transitions. They range from individuals to collectives, firms, and organisations (Farla et al., 2012; Fischer and Newig, 2016). This paper focuses on organisations, as organisations are predominantly studied in relation to hybridisation and most relevant for the CP case. Energy communities are examples of collectives of citizens (or individuals), often structured as a formal organisation as this allows for participation on energy markets, application for grants and subsidies, and establishment of rules on decision making, ownership, and distribution of financial benefits.

Organisations are guided and coordinated by institutional field logics, which provide prescriptions for organizational' strategies, structures, and practices. Organisations can, however, innovate by drawing elements embedded in different logics and combine them at the core of their organisational mission, legal form, governance and ownership structures (Bauwens et al., 2020; Dalpiaz et al., 2016; Lallemand-Stempak, 2017; Litrico and Besharov, 2019; Mitzinneck and Besharov, 2019; Pache, 2013; York et al., 2016). In addition, due to their hybrid nature, hybrid organisations face difficulties in being perceived as legitimate actors by non-hybrid actors in the field. These elements form the core characteristics of organisations, which represent dimensions on which organisations can differ from each other based on prescriptions of different institutional field logics. These elements are described in more detail in Table 1.

By drawing elements from multiple institutional field logics, hybrid organisations can work around institutional constraints (Pache, 2013) and fit better "*within and across institutional logics*", which is crucial for mainstreaming innovations (Pache, 2013; Wittmayer et al., 2021). By combining elements from divergent logics in an unique way, hybrid organisations are also believed to play

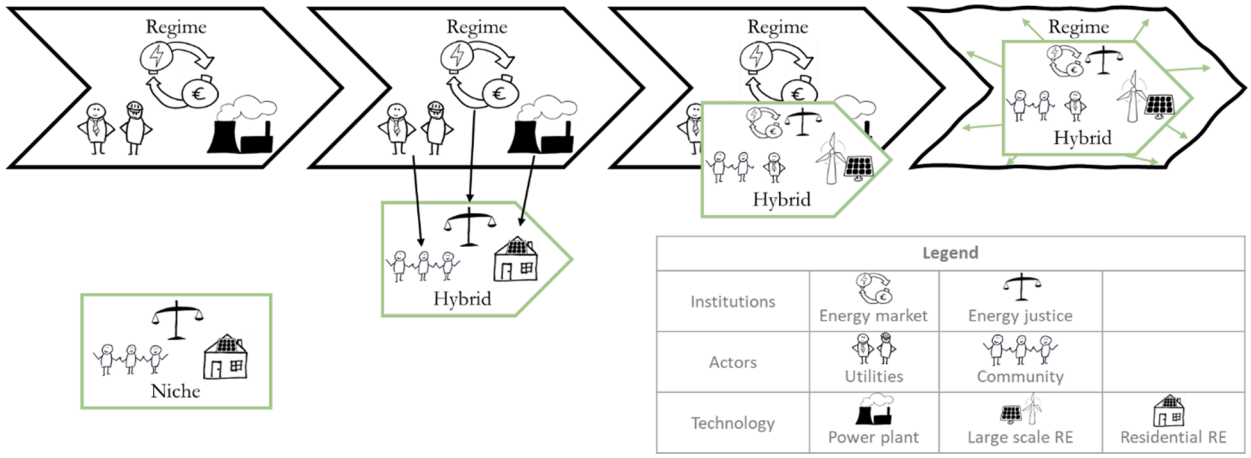

Fig. 1. Visualisation of a niche hybridisation strategy, understood as combining or blending elements from both the regime and niche to fit in the regime in the short term, to transform it from the inside in the longer term.

important roles in realising socio-technical change by introducing and legitimising organisational forms, practices, and technologies deviant from the incumbent regime (Bergman, 2017; Dalpiaz et al., 2016; Greenwood et al., 2011; McMullen, 2018; Pache, 2013; Tracey et al., 2011; York et al., 2016).

In contrast to the large majority of studies that investigated hybridity within individual organisations, Bauwens et al. (2020) explored hybridity on the inter-organisational level, e.g. how different hybrid organisations "*each manage particular dimensions of a collectively negotiated hybridity*" (p. 215). Such a 'synergistic arrangement' allows hybrid organisations to operate on varying scales and focus on different activities and objectives (Bauwens et al., 2020).

2.3. Hybridisation of technology

In the field of Sustainability Transitions, technological innovation has been an important entry point to investigate radical transformations of modern societies (Kemp et al., 1998), often referred to as technological transitions (Geels, 2002). Although technology is often understood as material artefacts and infrastructures, they are also strongly linked with and dependant on skills, cultural norms, and everyday practices (Rip and Kemp, 1998).

On the technological dimension, hybridisation refers to combination of old and new technologies into new hybrid technological designs (Raven, 2007). The new technology could be framed as a solution for specific problems in the incumbent regime (Raven, 2007). An example of hybridisation of technology is the transition from sailing ships to steam-powered ships (Geels, 2002). Steam engines were added to sailing ships as a power source for moments when wind was absent, thereby solving a specific regime problem. Eventually the steam engines became dominant, while sailing ships moved to niche markets (e.g. recreational use).

A niche hybridisation strategy allows technology developers to fit in an incumbent regime and circumvent harsh competition with dominant technologies (Raven, 2007). Sectors that rely on 'hard' infrastructures (e.g. the electricity grid, (rail)roads) provide significant barriers for novel technologies, especially if the latter requires a new or adapted infrastructure (Kaijser, 2003). By fitting in or making use of the existing infrastructure, the technology can be further developed and diffuse more widely (Raven, 2007). The latter allows for learning about the technology's application in various contexts and domains, which is key for the emergence of socio-technical niches (Kemp et al., 1998; Schot and Geels, 2008).

An example of novel technologies that rely on existing infrastructure is the integration of weather dependant solar PV in the electricity grid. Conventional fossil-fired power plants can be steered to make electricity supply meet demand, but the intermittent character of weather dependant renewables does not allow for this. Hence, ICT and flexibility solutions are needed to balance solar PV and electricity demand. The integration of RES, like solar PV, requires not just the hybridisation with the existing electricity grid, but also a growing entanglement of the energy and ICT systems (Niet et al., 2022).

2.4. Conceptualising niche hybridisation strategies

Transitions are understood as regime shifts, which involve the introduction or translation of (elements of) the niche into the regime (Grin et al., 2010; Smith, 2007). In this context, this paper conceptualises niche hybridisation strategies as combining or blending elements from different institutional logics, organisational forms, and/or technologies from both the niche and regime. Fig. 1 visualises this conceptualisation in four steps. First, the niche is radically different from the regime, making it difficult for the niche to break through and contribute to change. In the second step, niche actors mimic and/or blend elements of the regime with the niche, thereby creating hybrid logics, organisations, and/or technologies. For example, the niche shifts from residential RE towards large-scale RE, thereby incorporating the centralised nature of conventional power plants. Thirdly, this hybrid fits better within the regime, allowing

Table 2
Actors involved in the establishment of CP.

Organisation	Description
Templederry Wind Farm (TWF)	Ireland's first community owned windfarm, developed by citizens from Templederry.
Tipperary Energy Agency (TEA)	Tipperary Energy Agency is an independent not-for-profit social enterprise that aims to deploy (innovative) sustainable energy solutions, educate the public, and lobby for institutional change.
Friends of the Earth (FOE)	An environmental organisation that aims to build a social movement, support local communities, and lobby for institutional change.
Aran Islands Energy Co-operative	A cooperative on the Aran Islands that aims to deploy community owned RES to create local benefits and to lower its dependence on the mainland.
Energy Communities Tipperary Co-operative	A cooperative that supports retrofitting of houses and retrofitting in 9 Irish communities / towns.
Claremorris and Western District Energy Co-operative	This cooperative situated in the West of Ireland aims to deploy community-owned RES to benefit their local community members and to address climate change.
Tait House Community Enterprise	This community development cooperative situated in Limerick aims to generate enterprise, employment, and opportunities for training in the local community.
Smart M Power	A company specialised in developing smart grid solutions.

the niche to survive within an unchanged selection environment. Finally, the hybrid niche can transform the system from within. This figure presents, however, a very simplified and linear description of a niche hybridisation strategy, e.g. as a fit & transform strategy. In reality, these processes are messier, non-linear, and not controlled nor planned by single actors. Instead, niche strategies unfold through a collective negotiation process that involves conflicts, adjustments, and social learning (Raven, 2007).

Table 1 describes the elements that can be drawn upon within a niche hybridisation strategy, which are used to study the case of Community Power. This allows for exploring whether the niche hybridisation strategy results in hybrid goals and means (e.g. how to achieve the objectives) from different institutional logics, hybrid organisational forms and synergistic arrangements between hybrid organisations, and/or hybridisation of technologies and infrastructures favoured by the niche and/or regime. These elements are based on studies on hybridisation of technologies (Raven, 2007) and organisations, which is often studied in relation to institutional logics (Dalpiaz et al., 2016; Fuenfschilling and Truffer, 2014; Lallemand-Stempak, 2017; Litrico and Besharov, 2019; Mitzinneck and Besharov, 2019; Pache, 2013; York et al., 2016). This allows for studying hybridisation on the institutional, actor, and technological dimensions, which has, to the knowledge of the authors, not been done before. Previous studies limited their focus on hybridisation of either technology or organisational forms (and institutional logics).

3. Research methods

This study adopted a qualitative research approach to investigate the establishment of CP. Below the case selection, data collection and analysis are discussed.

3.1. Case selection

The case of CP was selected for two reasons. First, it involved a conscious niche hybridisation strategy that might be crucial for the empowerment of the Irish community energy niche. Secondly, the involvement of the researchers in the Interreg NWE community-based Virtual Power Plant (cVPP) project (588) allowed for closely following the establishment and proceedings of CP for over three years (2018–2021).

3.2. Data collection

Several approaches were combined for data collection. First, data were collected during both online and offline project meetings in which key actors involved in the establishment of CP presented their progress and struggles. Other participants in these meetings were cVPP consortium partners. See Appendices B and C for an overview of these meetings. Secondly, minutes of meetings, reports and other cVPP project deliverables that discussed the establishment of CP were collected (see Appendix D for an overview of cVPP project deliverables). Thirdly, semi-structured interviews were conducted by the main author to gather more in-depth information about the establishment of CP. The focus was on institutional barriers and opportunities, struggles and challenges, ambitions and motivations, as well as their progress over time. Interviewees consisted of actors directly involved in the establishment of CP (see Table 2) as well as other key actors in the energy system. An overview of the interviews is provided in Appendix E. Finally, through desk research background information was gathered on CP and the actors involved, as well as on the Irish context. Information was derived from academic papers, grey literature, and webpages of the energy communities, CP, and of key actors in the Irish energy system.

3.3. Data analysis

The software tool NVivo 12 Pro (QSR International Pty Ltd., 2018) was used for the empirical analysis, which consisted of two qualitative coding cycles. The purpose of the first coding cycle is to attribute interpreted meaning to data to lay the foundation for the second coding cycle, which aims to '*develop a sense of categorical, thematic, conceptual, and/or theoretical organization from your array of*

Table 3
Overview of the incumbent regime and community energy niche in Ireland.

		Regime		Niche
Institutional logic	Field logic	Governmental logic	Commercial logic	Community energy logic
	Institutional orders	State, profession (engineering)	Market, corporation	Community, corporation, market
	Goals	Energy security and availability, cost efficiency	Increase efficiency	Energy democracy and -justice; community resilience, empowerment, and autonomy
	Means	Homogeneous nation-wide electricity grid to provide sufficient transport capacity	Increase competition through liberalization of markets	Community ownership, democratic decision making, engagement
Organisations	Mission	Provide transport capacity	Financial profit	Economic, environmental, and social value creation
	Organisational form	(Vertically integrated) state-owned monopolies	Company	Energy cooperative (REScoop)
	Governance	Indirect democratic control (through political system)	Board of directors, voting power shareholders depends on number of shares	Community ownership, 1-member 1-vote (board members, objectives and strategy)
	Sources of legitimacy	Increase community (e.g. societal) good	Shareholder activism	Trust, reciprocity, democratic participation
Technology	Favoured technology	Large scale generation (that is visible and controllable)	Large scale generation (economy of scale)	Renewable energy, scale in line with community needs and ambitions
	Infrastructure	Existing grid infrastructure, to which a digital layer is added to deal with the increasing number of RES	Existing grid infrastructure, to which a digital layer is added to deal with the increasing number of RES	Existing grid infrastructure, to which a digital layer is added to deal with the increasing number of RES

first cycle codes' (Saldaña, 2016, p. 234). Depending on the focus of the study, different coding methods can be combined (Saldaña, 2016).

In the first coding cycle an initial (or open) coding method was applied, to code pieces of data based on their content (Saldaña, 2016). This bottom-up and inductive coding method is often used in grounded theory studies and in studies that involve a variety of data sources (e.g. field notes, interview transcripts, meeting minutes and transcripts, and documents) (Saldaña, 2016). Despite the open-ended nature of initial coding, it must be stressed that coding is always a subjective act as researchers look at data from their own perspectives and interests (Saldaña, 2016). For instance, in this particular study the researchers actively participated in project meetings and already worked out the research question and conceptual framework prior to analysing the data. The active involvement in the cVPP project as well as the constructs, theories, and concepts that structured the research have influenced the meaning the researchers attributed to data in the first coding cycle. In other words, even an open-ended coding method like initial coding, is always influenced by the researchers' interests, subjectivities, personalities, and predispositions (Saldaña, 2016). The impacts of this potential bias are minimised by focusing explicitly on the strategy of CP and not on (estimated or predicted) transformative impacts, which are more prone to biases due to a lack of backing data sources.

In the second coding cycle an elaborative coding method was combined with a concept coding method, to respectively categorise codes from the first cycle into pre-defined categories derived from the conceptual framework (Table 1) and in emerging categories (Saldaña, 2016).

Although these bottom-up and top-down coding methods might seem incompatible, Layder (1998) argues that it can be advantageous to combine inductive and deductive approaches. The combination of these two coding methods fits the purpose of this study for two main reasons. First, this study involves a large variety of data sources, which were mostly directly provided by actors involved in CP, either through writing reports or participating in project meetings and/or interviews. The combination of initial and elaborative coding methods allowed for coding this variety of sources in a similar manner. For instance, initial coding allowed for coding pieces of text based on their content, not affected by the source the text came from. This resulted in codes which were, again, treated in a similar way in the second coding cycle. Secondly, initial coding ensures that interpretations reflect the everyday realities of the people studied, while the theoretical model guides the interpretation and analysis of data in the second coding cycle (Layder, 1998). In addition, by allowing for new categories to emerge from the data, this study was also open for surprising findings, e.g. that were not expected based on the theoretical framework. As such, this study combined the strengths of inductive and deductive coding methods.

4. Niche hybridisation strategies of Irish energy communities

Section 4.1 outlines the incumbent energy system and the emergence of the community energy niche in Ireland. An exhaustive analysis of the socio-technical regime is beyond the scope of this paper,[2] instead this section aims to give a rather generic description of the regime and niche (see Table 3 for a summary). This preparatory step provides the background information needed to empirically investigate the niche hybridisation strategy in the CP case in Section 4.2.

[2] For an extensive review of the Irish energy system see (Gaffney et al., 2017).

4.1. The incumbent energy system

4.1.1. Institutional logics

In 1927, the Irish government established the state-owned and non-profit Electricity Supply Board (ESB), to ensure connectivity and a stable and secure supply of electricity for all Irish consumers over a uniform country-wide electricity grid (Gaffney et al., 2017). This state-governed energy system shows the dominance of the 'governmental logic' within the regime, which is described in more detail in Table 3.

The focus on security of supply is strongly reflected in the first RE support schemes in Ireland. From 1990, the Irish government started to support renewable energy to increase the share of electricity generated from indigenous energy sources for the sake of security of supply (CER, 2002; Department of Transport, 1996). Only from 1996 onwards the policy support for renewable energy was explicitly framed in relation to the mitigation of climate change, in line with European climate mitigation targets (Gaffney et al., 2017).

The operation of the Irish energy system changed drastically with the introduction of the Electricity Regulation Act (ERA) in 1999. The ERA was the Irish translation of the First EU Energy Package and aimed to liberalise the Irish energy market by unbundling vertically integrated monopolies (Gaffney et al., 2017). The increasingly important role for energy markets in the governance of the energy system indicates the increasingly dominant 'commercial logic' within the regime, which is described in more detail in Table 3. This was also reflected in the competitive auction scheme introduced in 2020 as part of the renewable energy support scheme (RESS).

Concerning community energy, until recently there was little policy support for Irish energy communities (Walsh, 2018). Only recently policy papers mentioned a more active role for citizens and (energy) communities in the energy transition, beyond energy conservation efforts (DCENR, 2015, 2014; Walsh, 2018). Only in 2020, this policy support was translated into the design of the RESS, which includes the provision of support for setting up community-driven RE generation projects and the creation of a separate ringfenced 'community' category in the RESS auction (Government of Ireland, 2018). The latter means that a percentage of 5–15% of the total capacity is reserved for projects that meet community-led criteria.

To conclude, in the recently published energy strategy for Ireland between 2015 and 2030, three main objectives were formulated: security of supply, competitiveness, and sustainability (DCENR, 2015, 2014). These three objectives represent the dominance of the governmental and commercial logics within the socio-technical regime, as well as the increasing importance of climate change mitigation. In addition, the community energy logic has been gaining traction over the last decade within Irish policies.

4.1.2. Organisations

In 1927, ESB took over all responsibilities and undertakings related to energy generation and distribution from local authorities, private companies, and entrepreneurs (Gaffney et al., 2017). However, as part of the liberalisation process set in motion in 1999, roles and responsibilities were unbundled. EirGrid, an independent transmission system operator, became responsible for operating the transmission system. ESB Networks, one of the subsidiaries of ESB, retained ownership of both the transmission and distribution system, and was responsible for operating the latter (Gaffney et al., 2017). In addition, the wholesale and retail energy markets were opened for new entrants, mainly consisting of commercial organisations. One of the relatively novel actors in the Irish energy system are energy communities, who, due to institutional barriers, had to focus on energy conservation projects. An exemption is Templederry Wind Farm (TWF), who did manage to set up a community-owned wind farm.

To conclude, in line with the dominance of both the governmental and commercial logics, public utilities and commercial organisations play key roles in respectively managing and operating the electricity grid and in trading and supplying energy. Energy communities hardly play a role in energy generation and distribution.

4.1.3. Technology

Concerning the technological infrastructure, for a long time ESB was the owner and operator of both the distribution and transmission networks. In the late 1970s the objective to realise a nationwide electricity grid was finally met; all rural energy consumers were connected to the electricity grid (Dallamaggiore et al., 2016). In 1990 and 2012 Irelands electricity network was connected to the networks of respectively Northern Ireland and the United Kingdom, as part of efforts to create an integrated European electricity network (Gaffney et al., 2017).

Regarding energy generation technology, until 1970, main electricity sources consisted of hydropower, oil- and peat-fired power plants (Gaffney et al., 2017). However, oil crises in the 1970s drew attention towards Ireland's reliance on imported fossil fuels, and led to efforts to diversify Ireland's generation portfolio (Gaffney et al., 2017). This spurred interest in coal-fired power plants and wind power (Gaffney et al., 2017). In 2014, main primary fuels used for electricity generation were coal, natural gas, peat, wind, and hydro (Howley and Holland, 2016). To conclude, within the Irish energy system the focus was on large-scale centralised energy generation technology connected to a unified and nationwide electricity grid. In contrast, energy communities tend to favour energy generation technologies that are scaled in relation to local energy demand and community needs and ambitions (Hicks and Ison, 2018). This implies that in many cases energy communities prefer RES on a smaller scale compared to the incumbent regime, which are relatively easy to implement within their local community context (Gui and MacGill, 2018).

Table 3 provides an overview of the regime and community energy niche in Ireland, based on the above analysis and literature on Community Energy (Bauwens et al., 2022, 2020; Hicks and Ison, 2018; Huybrechts and Haugh, 2018; Klein and Coffey, 2016; Mitzinneck and Besharov, 2019; Šahović and da Silva, 2016; Seyfang et al., 2013; Van Summeren et al., 2020; Walker and Devine-Wright, 2008). The purpose of this table is to provide a rather generic picture of the Irish electricity regime and the Community Energy niche, which allows for zooming in on the hybridisation within the CP case in Section 4.2.

Table 4
Timeline of the establishment of Community Power.

Year	Event
2000	Establishment of wind development company (Templederry Wind Farm)
2012	Wind farm in operation
2013	Establishment of Community Renewable Energy Supplier (CRES)
2016	First employee was hired to further develop CRES
2018	Workshops with energy communities to establish Community Power
2019	CRES transitions into Community Power
2020	Community Power becomes a licensed large-scale electricity supplier

4.2. The niche hybridisation strategy: the case of Community Power

The above overview of the regime and niche in the Irish context allows for investigating the niche hybridisation strategy in the case of Community Power (CP), in relation to institutional logics, organisations, and technology.

Table 4 presents most important events in the establishment of CP.

4.2.1. Hybridisation of institutional logics

4.2.1.1. Institutional orders. Energy communities set up CP, a community-owned renewable energy supply company. As will be discussed in more detail below, CP combines elements from the community energy (niche) & commercial (regime) logics, which in turn combine elements from the institutional orders: community, market, and corporation.

4.2.1.2. Goals. The energy communities and partners involved in setting up CP explicitly stated their overarching goals, which they framed in relation to perceived flaws and injustices within the incumbent energy system:

"*We want Ireland to run on clean renewable power, developed for people, by people. We recognize Ireland's energy system is in crisis, with over 90% reliance on climate polluting fossil fuels and that many people are struggling to pay high energy bills, and yet live in cold homes. We are supporting communities around Ireland to develop their own renewable energy solutions (…). We want the many benefits of generating renewable power to stay local to the area where it is generated, and we want people to be able to afford to power their homes. We think electricity should be sold at fair, affordable, consistent prices and that profits should be shared.*" [Report on the establishment of cVPP, 2020]

The overarching goal was to strengthen the community energy niche. In other words, they aimed to introduce and mainstream elements of the community energy logic in the regime. This was seen as a solution for issues related to globalisation, deterioration of democracy, and the dominance of the commercial logic and its focus on profit maximisation for a few major shareholders:

"*A benefit will be to reduce the dominance of private market players, whose owners are often anonymous corporate investors, held by non-taxpaying offshore structures. A benefit will be to give greater autonomy to the energy system and to our democracy and society generally, by including democratically owned and controlled local players, whose members live locally and pay their taxes locally.*" [Report on the establishment of cVPP, 2020]

4.2.1.3. Means. To realise the first community-owned wind farm in Ireland, Templederry Wind Farm (TWF) had to overcome severe barriers concerning the securing of planning permission, grid connection and funding. The actors involved in TWF consciously developed a niche hybridisation strategy to enable energy communities to survive within this unfavourable selection environment. They mimicked incumbency by setting up an energy supply company: 'Community Renewable Energy Supplier' (CRES), which later evolved into 'Community Power' (CP) (see Section 4.2.2). The purpose of CP is to enable energy communities throughout Ireland to gain ownership over RES and sell electricity to their members and on energy markets. In addition, they shifted their focus from small-scale RES towards large-scale RES in line with prescriptions of the governmental logic (e.g. RE support schemes favouring large-scale RES) (see Section 4.2.3).

Next to blending in, the energy communities also aimed to transform the incumbent energy system to make it more favourable to citizen and community-owned energy generation. This involved efforts to mobilise support for community-owned energy generation in general, by framing the benefits of community energy in relation to public acceptance and citizen engagement in the energy transition. More focused efforts involved participating in public consultation concerning the RESS and sharing results and lessons learned regarding experienced institutional barriers with policy makers. These barriers concerned the costs and uncertainties related to grid access and planning permissions, requirements for accessing energy markets, and the lack of support schemes for micro- and small-scale RE generation. In other words, the energy communities attempted to address the barriers experienced by the prescriptions of both the governmental and commercial logics.

4.2.1.4. Interactions between institutional logics and organisations & technology. Both the discussion of goals and means indicate that institutional logics are strongly linked with alternative organisational forms and technologies, which both follow a different logic than their incumbent counterparts. For instance, a new organisation (CP) is set up to enable citizen and community ownership of RE, which follows a different logic than commercial supply companies (see Section 4.2.2). In terms of technology, the explicit focus of CP on (citizen and community-owned) RES differs from the centralised and mostly fossil fuel-based energy generation technologies owned by

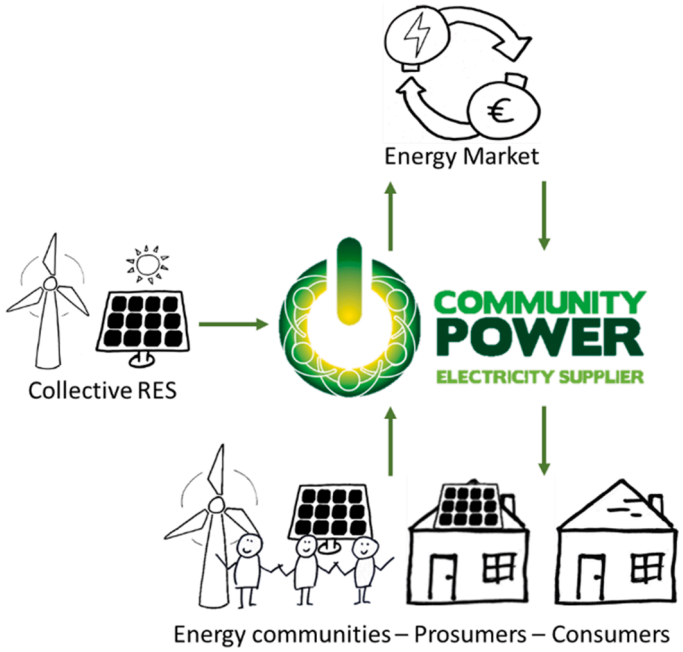

Fig. 2. How Community Power enables community ownership of RES and trading of electricity by citizens and energy communities – the green arrows represent electricity flows.

commercial companies (see Section 4.2.3).

4.2.2. Hybridisation of organisations

4.2.2.1. Organisational mission. The original name of CP was Community Renewable Energy Supply (CRES), which later was changed into Community Power. Both names reflect the hybrid nature of CP's organisational mission. The latter included the aim to create economic (financial revenues for RE generation), social (strengthening communities), and environmental values (decarbonisation). The organisational mission of CP was to support and enable community and citizen participation and ownership in RE generation, by supplying electricity back to community members and by selling the surplus on energy markets (see Fig. 2):

"*We envisage Community Power as a key enabler for the development of community- and citizen-owned renewable electricity generation in Ireland. The ability to buy and sell small scale renewably generated power has the potential to be a game changer in Ireland, and will allow many more community-owned energy projects (…) to be realised.*" [Report on the establishment of cVPP, 2020]

CP aimed to create local benefits for local communities, including foremost the financial revenues from RE generation, but also capacity building (skills, knowledge), creation of local jobs, reduction of fuel poverty and financial hardship by supporting retrofitting projects, and the provision of support for communities that strongly rely on the fossil fuel industry.

The above shows that its ability to generate revenues was key to the hybrid mission of CP, e.g. creating financial revenues for its shareholders like a commercial company, who in this case were communities and citizens rather than a few major shareholders. At the same time, CP acted as a non-profit organisation that aims to strengthen communities.

4.2.2.2. Organisational form. During various workshops, spread over five months, it was estimated by the energy communities and partners Tipperary Energy Agency (TEA), Friends of the Earth (FOE), and Smart M Power (see Table 2 for an overview of the actors involved), that a viable business model for CP requires about 5.000 to 20.000 customers. As a small supplier licence is valid for up to 200 customers, CP needed to become a large-scale energy supplier.

On January 8th, 2020, CP officially received their large-scale energy supplier license. To acquire this license, CP had to meet high IT, financial, and regulatory requirements. This involved high costs, which showed the need for energy communities to act collectively to reach sufficient scale for a viable business model. Going large scale also posed a challenge for CP. The number of financial reserves needed strongly depends on the ratio between CP's generation portfolio and total energy demand of their customers, e.g. the more electricity needs to be bought on energy markets, the more financial reserves are needed. This meant that growing the customer base faster than the RE generation portfolio comes with significant risks.

As CP was considered key to enabling energy communities to earn revenues by selling energy to their members or on energy markets, the involved actors stressed that it is of utmost importance that CP is resilient to shocks and crises. They felt that CP needs to be operated as an independent, self-sustaining, and commercial company. In other words, although it was set up as a not-for profit company, CP still needs to make profit to cover administration and overhead costs, to reimburse the money invested by TWF to

Table 5
Overview of roles and responsibilities of actors involved in CP.

Actor	Roles and responsibilities in the synergistic arrangement
Energy communities (see Table 2 for an overview)	Develop the organisational structure of CP, raise awareness, develop the organisational structure of CP, recruit members and customers, lobby (local) policy makers for institutional change, and execute local RE generation and energy saving projects
Tipperary Energy Agency (TEA)	Develop the organisational structure of CP, Provide technical support, and lobby for institutional change
Friends of the Earth (FOE)	Develop the organisational structure of CP, raise awareness and promote CP throughout Ireland, provide communicative support for energy communities, and lobby for institutional change
Smart M Power	Develop the organisational structure of CP, explore future opportunities CP concerning demand response and maximising collective self-consumption

Table 6
Overview different shares and memberships for CP.

Type of membership / share	Voting power and return on investment
Energy communities	One share equals five votes; receive a return on investment
Citizens	One share equals one vote, individual members can attend meetings; receive a return on investment
Junior members	One share equals one vote, once a junior members turn eighteen years old; receive a return on investment
Investors (RE generation projects)	No voting rights; receive a return on investment

establish CRES and to acquire the large supplier license, and to invest in the further growth of CP and the involved energy communities:

"*But again, it has to be profitable. We already put a quarter million into CRES, and another quarter million in the solar farm applications. All of that could go down the drain… It is all risk.*" [Interview representative of TWF, 2018]

Several organisational forms were considered, and because of legislative restrictions (Irish legislation for cooperatives stems from 1989 and did not quite fit the CP context), a hybrid organisational form was chosen. CP combined elements from PLC (Public Limited Company) and cooperative organisational forms, which allowed for blending in the regime, while incorporating elements of the community energy logic.

"*Because we couldn't use cooperative, we instead aimed for a standard LTD company with cooperative principles. But you can only have 250 shares in an LTD company, so that didn't fit the purpose. So, we ended up going for a PLC model, in which we incorporated cooperative structures, which allows us to raise finance for energy projects. (…) Because this is a hybrid, there is nothing like it.*" [cVPP consortium meeting Antwerp, 2019]

Next to considering CP as an individual hybrid organisation, it could also be seen as a synergistic arrangement between citizens, energy communities, social enterprises, and civil society organisations. Different organisations perform different roles within this partnership (see Table 5), thereby managing different dimensions of the collectively negotiated hybridity.

4.2.2.3. Ownership and governance. This synergistic arrangement was also clearly visible in the ownership and governance structures of CP. Although, CRES was originally solely owned by TWF, the transition into CP involved the introduction of a shared ownership model to ensure active participation of multiple energy communities. The buy-in of local energy cooperatives into CP allowed TWF to withdraw as main shareholder and risk taker, and for the repayment of initial investments in CRES.

Regarding ownership, there were discussions on whether besides energy communities also individual citizens could become member and co-owner of CP. This is because the success of CP depends not only on its resilience against shocks and ability to function as an autonomous commercial company, but also on its symbiotic relationship with energy communities who it aimed to empower and who play a key role in recruiting customers, members, and investors.

Because CP is an energy supplier, a bilateral contract is needed with individual customers. The viability of the business model of CP also strongly depends on the size of its customer base. CP would therefore benefit from the possibility that also individual citizens without energy community, referred to as 'orphans', could join CP. It was, however, stressed that this could harm the local energy communities, as it could hinder the recruitment of new members for their local initiatives. The involved parties agreed that governance and ownership structures were needed that protect both the local energy communities and CP:

"*We have to make sure that we protect CRES, nothing can happen to CRES. CRES is the one with the legal arrangement with the government, they are an entity that is allowed to buy and sell power, and we have then an arrangement with CRES and the other community groups. But we need to protect them as well*" [Interview representative Tait House Social Enterprise, 2018]

The above tensions were solved by distinguishing between different types of shares, which come with different voting rights, which is possible within the PLC structure. A distinction was made between four different types of members, presented in Table 6.

A tension existed between democratic and transparent decision-making and to make CP operate as an autonomous commercial entity. Key part of the trade-off made was to assign a board of a maximum of twelve executive and non-executive directors. Executive members consisted of the staff of CP, who make executive decisions but have to operate in line with the core values agreed upon by the founding energy communities (e.g. local benefit, democracy and cooperation, clean energy, fair prices, and resilience). Non-executive board members were to be elected by members of CP, either directly from the members or based on expertise required within the board. These non-executive board members will have a say in policy and strategy but will not be involved in day-to-day decision making:

"*We are trying to ensure that Community Power can function as a commercial entity. That it doesn't get tied up in one person one vote, which we agreed on in principle. To prevent having too many Indians and no chiefs, and not being able to make a decision. So, part of what we are looking at is an executive board for Community Power, that can just get on with day to day running of the business.*" [Interview employee CP, 2019]

The above showed several tensions related to governance and ownership of CP, which were the result of its hybrid character. To become a key enabler of Irish energy communities, CP had to comply to the prescriptions of both the community energy and commercial logics.

4.2.2.4. Sources of legitimacy. As stressed above, key to the success of CP is to attract enough members and customers, which required CP to be perceived as both a legitimate energy supplier and a community energy protagonist by citizens, energy communities, and local enterprises. This was highly visible in the communication on the website of CP, which framed CP explicitly as a non-profit, community-owned, transparent, and democratically operated RE supply company, set up to enable citizens and energy communities to own and earn revenues from renewable energy sources.

In addition, the fact that TWF was a frontrunner energy community that set up a community-owned wind farm and supply company (CRES), and who successfully applied for Interreg NWE funding, increased CP's legitimacy in the eyes of energy communities:

"*So, CRES is already set up, it is already authorized, it is community-owned, and of course CRES and the individuals in it have done the heavy lifting, so they stretch far. They come with a very good pedigree. So, it is easy for people like me to be able to say: yeah, I trust those guys, and I'm happy to follow their lead, so to speak, because I know they've been good*" [Interview representative Tait House Social Enterprise, 2018]

To successfully realise institutional change, CP needed also to increase legitimacy in the eyes of policy makers and other regime actors. Community energy was therefore framed as a means to increase public acceptance for the energy transition in line with goals of the governmental logic. In other words, they frame CP as a solution for regime problems:

"*So, in order to get people on board with a complete transformation of the energy sector […]. We need acceptance. To get that, we need people to benefit from it, to participate in it, to decide to have ownership and feel ownership of that transition. And community energy offers a way of doing that. A very fair and equitable way, it creates opportunities. So that is the framing.*" [Interview employee FOE, 2019]

4.2.2.5. Interactions between organisations and institutional logics. The hybrid organisational form of CP is a result of the combination of elements from both the niche and regime logics, more specifically, the community energy and commercial logics. As described above, the translation of these elements and principles into a new hybrid organisational form came with both internal and external challenges. Internally, actors involved in CP struggled to come up with an organisational form that enabled CP to trade on energy markets on behalf of citizens and communities, in line with their goal to strengthen the community energy sector. This internal challenge links to an important external challenge for CP; the need to comply with both niche and regime logics to be considered legitimate by citizens, energy communities, policy makers, and regulators.

4.2.3. Hybridisation of technology

The niche hybridisation strategy of CP did not involve actual hybridisation of technological artefacts but does involve hybridisation on the system level. The introduction of digital meters, novel IT solutions and the electrification of mobility (electric vehicles) and heating (heat pumps) created new opportunities for energy management and demand response (DR). The fact that CP was already a supply company, might make it worthwhile to shift energy demand to moments when there is a surplus of energy generation within CP's portfolio or when prices are low on energy markets. At the moment of writing, CP is indirectly involved in DR projects, together with Smart M Power, to explore future opportunities. This indicates efforts to integrate distributed energy technologies in the centralised electricity grid infrastructure, which might contribute to a future hybrid energy system in which demand-side flexibility replaces the supply-side flexibility currently provided by fossil-fuel fired power plants.

4.2.3.1. Interactions between technology and institutional logics. In line with prescriptions of the community energy logic, CP favoured small-scale RES because this fits best with their ambition to increase local ownership by local communities and citizens. However, these small RES faced severe barriers in the form of the costs and time associated with securing planning permission and the fact that RE support schemes (governmental logic), until recently, favoured only large-scale RE generation. As a result, CP had to shift its focus towards deploying several large solar farms (up to 4–5 MW), which were going to be supported by the recently introduced RE support schemes. Although large scale RES make the realisation of local ownership more challenging, it comes with the benefit that it instantly creates revenue streams for CP as well as for multiple energy communities dispersed through Ireland.

"W*e have to adapt to the market situation; the ideal would be that you have generation in every local area. But the way it is at the moment… we are looking at generation owned by multiple communities, by a company that supplies energy to members of CRES.*" [Interview employee CP, 2018]

CP was, however, still involved in realising small scale RE projects, but merely for the purpose of transforming the regime. This is part of their efforts to make the institutional context more favourable towards small-scale RE generation. However, CP also recognised that it might not be cost effective to include small-scale RE in the portfolio of CP. The introduction of digital meters might, however, make it easier to include microgeneration in the generation portfolio of CP.

"*But what we try to do, we have microgeneration limit for export of 11 kW. So, we are applying for 12 kW for all three buildings, just to prove how stupid the regulation is. (…) Community Power will be able to pay for export. It will not be cost effective, it will not make sense, but to prove*

Table 7
Summary of results.

Dimension	What?	How?
Institutional logics	Blend in to survive and become more competitive, which allows for transforming the system from within	Strengthen the community energy niche by both blending in the dominant regime, while simultaneously performing institutional entrepreneurship to incorporate the community energy logic in the regime to make it more favourable towards citizen- and community-owned and/or small-scale RE
Organisations	Hybrid organisational form that combines elements from corporations (PLC) (commercial logic) and cooperatives (community energy logic)	CP is designed to simultaneously operate as an independent commercial entity (executive board, for-profit) to enable energy communities to sell and supply energy, and as an energy cooperative owned and democratically governed by its members (non-executive board elected by members, 1 member-1 vote principle, transparency, local/community benefits)
Technology	Focus on technologies prescribed by the governmental, commercial, and community energy logics	CP is a vehicle for deploying community-owned large scale RE generation in the short term (in line with dominant regime logics), while simultaneously aiming to transform the regime by including small-scale RE in the portfolio of CP and by lobbying for institutional change

the point that the system doesn't work." [cVPP consortium meeting Antwerp, 2019]

4.2.3.2. Interactions between technology and organisations. The interactions between technologies and organisations involved the impact of the focus on large scale RES on the organisational form. In line with prescriptions of the governmental logic, CP had to adapt their envisaged organisational form to allow for collective ownership of all members of CP over the large-scale RES. This would have looked differently if CP would only allow for ownership by local communities and citizens over small-medium scale RES within their geographical area.

Next, there were discussions between the actors involved in setting up CP regarding the focus on RE only. It was decided that the focus is on RE, but that non-RE sources would not be automatically excluded from CP if it is 'clean' and owned by- or creating benefits for local communities. CP's executive board will make the decision for each specific case of non-RE. This shows how CP adhered to the legitimacy requirements of internal stakeholders and that it needed to find a balance between environmental and social values.

Table 7 summarizes the niche hybridisation strategy of CP in relation to the three dimensions.

5. Discussion

The CP case is especially interesting because it involved a conscious niche hybridisation strategy set out through a structured negotiation process. In contrast to most niche strategies which tend to unfold "*at the collective level through a process of conflicts, mutual adjustment and interactive learning*" (Raven, 2007, p. 2399). In addition, this case might be of major importance for the Irish community energy niche, as CP created revenue streams for citizen- and community-owned energy generation. As such, it aimed to have positive energy justice impacts beyond their own local energy community (van Bommel and Höffken, 2021).

The results presented above strongly relate to the study by Bauwens et al. (2022), who investigated how community enterprises try to stay true to their community logic while scaling up. Bauwens et al. (2022) conceptualised three consecutive upscaling phases of community enterprises: community volunteerism, niche creation, and niche expansion. They also formulated nine propositions (see Appendix F) that describe the tensions resulting from institutional complexity (e.g. "*incompatible prescriptions of multiple institutional logics*" (Greenwood et al., 2011, p. 317)) as well as how they can be managed by community enterprises. These propositions largely hold for the CP case discussed in this paper. This increases generalizability of the results of this study, in the sense that the tensions experienced as well as the niche strategy employed can also be found in other community enterprises in the contexts of both mobility and energy. In contrast to what is suggested by Bauwens et al. (2022), CP did not go through the three upscaling phases consecutively. Instead, the energy communities involved in CP engaged in workshops to develop solutions for internal and external tensions from both the niche creation and niche expansion phases simultaneously. Rather than developing managing mechanisms when tensions arise in a particular phase, the communities involved in the establishment of CP anticipated possible challenges and tensions. It would be interesting to find out whether they managed to successfully predict and anticipate future tensions caused by institutional complexity, and how they coped with both unforeseen and emerging tensions and challenges in the ongoing energy transition.

The overarching 'aggregator' role performed by CP receives a lot of attention by academics and policy makers (European Commission, 2019), as a way to integrate distributed energy resources (DER) in existing energy markets. It could be considered a hybridisation strategy as it allows for mimicking incumbency by aggregating DER into one larger (virtual) entity, to reach the scale required for participation on respectively energy and flexibility markets as a cooperative supplier or aggregator (Van Summeren et al., 2021). Hybridisation or adaptation to blend in the regime is often understood as compromising, as it often involves abandoning some of their fundamental underlying principles and values (Hermans et al., 2016; Smith, 2007). The case of CP, however, showed that it might be too short sighted to consider hybridisation equal to compromising. The hybridisation strategy of CP did involve taking over elements of the incumbent regime and could therefore be considered as compromising to scale up and increase legitimacy from the perspectives of regime actors. However, what distinguishes CP from many other cases is that their strategy focused explicitly on creating revenue streams for energy communities which is key to making them more competitive in the Irish energy system, thereby enabling them to survive and grow in both size and number. In other words, CP shielded energy communities from market pressures, thereby potentially allowing these local initiatives to stay true to their community nature, as it reduces the need to make compromises

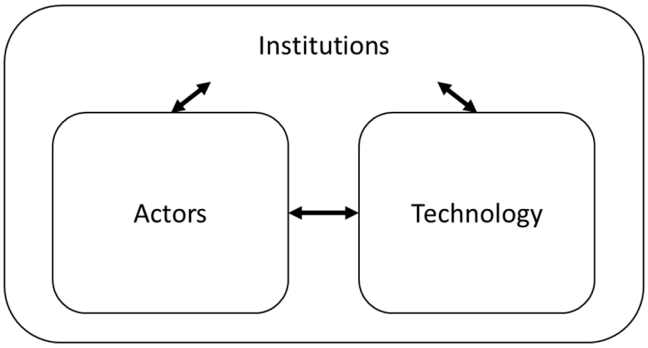

Fig. 3. This figure visualises institutions as a structural force that guides, but is also reproduced by, both actors and technology, as well as the interactions between actors and technology.

concerning core principles, autonomy, and activities within their local communities (Bauwens et al., 2022).

Although aggregation seemed to be a promising niche strategy for supporting the growth and diffusion of energy communities (Van Summeren et al., 2022), it also created several challenges and tensions, e.g. between community and commercial logics (Bauwens et al., 2022). For instance, the CP case showed the difficulty of simultaneously strengthening and protecting the overarching aggregator (CP) as well as the involved energy communities, as they have a symbiotic relationship and rely on each other for being successful, but have conflicting needs, values, and objectives.

This relates to the outstanding question whether it is better to have one large CP that covers the whole of Ireland, or multiple smaller energy suppliers owned by local communities. The latter might increase the share of local decision-making power, ownership, and benefits. The need to increase scale to participate in the energy market might, however, evokes competition between energy communities over territory, resources, and members (Van den Berghe and Wieczorek, 2022), what goes against their cooperative nature (Bauwens et al., 2022). In addition, unifying the community energy niche around one CP came with the benefit of speaking with one voice, which has proved to be difficult but crucial in successfully lobbying for institutional change (Ruggiero et al., 2018; Seyfang et al., 2014). Finally, the scale of CP allowed them to not only act as a supplier, but also to take up an intermediary role by accumulating and circulating knowledge and resources, thereby supporting energy communities throughout Ireland to set up their own RE generation projects. This in turn strengthened CP, as it helps increase the size of its generation portfolio, which is crucial for a viable business case. To conclude, CP can be considered to be a collectively negotiated organisational solution to address tensions that result from institutional complexity at both the inter- and intra-organisational levels (Bauwens et al., 2022, 2020).

Regarding the conceptual framework, the study presented in this paper showed that niche hybridisation strategies (Raven, 2007) provide a promising avenue for investigating niche strategies. Hybridisation reflects the intermediate nature of niche strategies in practice, which are often combinations of 'fit & conform' and 'stretch & transform' strategies. In addition, by exploring hybridisation in relation to the institutional, actor, and technological dimensions, this study provided a more nuanced theoretical perspective to grasp the complexities of niche strategies. Compared to existing studies on niche empowerment strategies, the theoretical perspective provided in this paper allows for investigating the complexities of niche strategies which, in practice, are much more diverse and do not fit neatly in the fit vs. stretch dichotomy. Next, the conceptual framework also draws attention towards the technological dimension, which is often largely neglected in studies that focus solely on hybrid organisational forms in the context of institutional complexity. However, the results of the empirical analysis also showed that separating the institutional, actor, and technological dimensions can be problematic, because in reality they are strongly intertwined. This is especially the case for institutions, which are conceptualised – and therefore investigated – on a higher or more abstract level than the actor and technological dimensions. Institutions (or institutional logics) act as a structuring force that steers actions in relation with actors (organisational forms) and technologies, which does not come as a surprise given the structuring nature of institutions. However, this problematises the way the conceptual framework treated the three dimensions as equal. Future studies on niche hybridisation strategies should therefore adapt the conceptual framework in line with the nature of – and interactions between – the three dimensions, as visualised in Fig. 3. Despite this flaw, the conceptual framework presented in this paper proved to be useful as an analytical lens for studying the niche hybridisation strategy of CP.

The study presented in this paper has several limitations. First, the fact that the conceptual framework is developed with one specific case in mind, to which it is also applied, has implications for its generalisability. On the other hand, this allowed for an in-depth analysis of the establishment of CP, thereby increasing the validity of findings, which are in line with the findings of Bauwens et al. (2022). Secondly, the case presented in this paper concerns ongoing efforts of energy communities, making it uncertain whether their strategy will be successful, not only to survive, but also to realise wider and lasting impacts. It is hard to estimate and predict whether CP will be able to overcome the challenges and barriers they faced and whether they will be able to have significant impacts on both the community energy sector and the larger socio-technical system in an ongoing transition process.

6. Conclusion

This paper explored how a niche hybridisation strategy allowed energy communities to blend in the incumbent energy system, to

Table 8
Interinstitutional System Ideal Types, derived from (Thornton et al., 2012).

	Family	Community	Religion	State	Market	Profession	Corporation
Root Metaphor	Family as firm	Common boundary	Temple as bank	State as redistribution mechanism	Transaction	Profession as relational network	Corporation as hierarchy
Sources of Legitimacy	Unconditional loyalty	Unity of will; Belief in trust and reciprocity	Importance of fait and sacredness in economy and society	Democratic participation	Share price	Personal expertise	Market position of firm
Sources of Authority	Patriarchal domination	Commitment to community values and ideology	Priesthood charisma	Bureaucratic domination	Shareholder activism	Professional association	Board of directors; Top management
Basis of Norms	Membership in household	Group membership	Membership in congregation	Citizenship in nation	Self-interest	Membership in guild and association	Employment in firm
Basis of Attention	Status in household	Personal investment in group	Relation to supernatural	Status of interest group	Status in market	Status in profession	Status in hierarchy
Basis of Strategy	Increase family honour	Increase status and honour of members and practices	Increase religious symbolism of natural events	Increase community good	Increase efficiency profit	Increase personal reputation	Increase size and diversification of firm
Informal Control Mechanisms	Family politics	Visibility of actions	Worship of calling	Backroom politics	Industry analysts	Celebrity professionals	Organisation culture
Economic System	Family capitalism	Cooperative capitalism	Occidental capitalism	Welfare capitalism	Market capitalism	Personal capitalism	Managerial capitalism

Table 9
Overview project meetings.

Date	Online / live	Topic of meeting
17–01–2018	Online	Replication of energy communities
19–02–2018	Online	First general quarterly consortium meeting
22–02–2018	Online	How to design a community-based virtual power plant
19–03–2018	Live	How to design a community-based virtual power plant
27–03–2018	Live	How to communicate with external stakeholders
06–04–2018	Live	How to design a community-based virtual power plant
11–04–2018	Live	Consortium meeting in Tipperary, Ireland
07–06–2018	Online	Second general quarterly consortium meeting
13–09–2018	Online	Third general quarterly consortium meeting
23–10–2018	Online	Impacts of the institutional context
31–10–2018	Online	Defining Community & community-based virtual power plant
07–11–2018	Live	Consortium meeting Ghent
30–11–2018	Online	Defining Community & community-based virtual power plant
08–05–2019	Live	Consortium meeting Apeldoorn
13–11–2019	Live	Consortium meeting Antwerp
10–06–2020	Online	Consortium meeting
22–09–2020	Online	Consortium meeting
31–05–2021	Online	Consortium meeting
03–11–2021	Hybrid	Consortium meeting Loenen
18–11–2021	Online	Discuss script cVPP project video

Table 10
Overview Irish project meetings to establish Community Power.

Date	Data collection (minutes / participating)
18–05–2018	Minutes
28–06–2018	Participation
14–08–2018	Minutes
10–09–2018	Minutes
11–10–2018	Minutes
01–02–2019	Minutes
11–04–2019	Minutes
21–06–2019	Minutes
19–07–2019	Minutes
19–09–2019	Minutes
08–10–2019	Minutes
16–01–2020	Minutes

Table 11
Overview of # project deliverables.

Date	Title
12/12/2018	Community profiles
20/12/2018	Value proposition for the stakeholders of the cVPP in the Irish context
31/12/2018	cVPP value propositions and their communication plan
31/06/2019	Community specific action plans
27/09/2019	Report on the implemented and tailored market interaction database and consumer interaction databases for the cVPP
10/02/2020	Communications and marketing strategy for the cVPP stakeholders
31/03/2020	cVPP results of the prosumer recruitment
30/06/2020	Recommendations to the national regulator and legislator
11/12/2020	Lessons learned from the cVPP conceptualisation
15/12/2020	Report on the establishment of the cVPP
18/12/2020	Investment and implementation plan for additional RES in Tipperary
18/12/2020	Report on the requirements of a cVPP to supply system services
18/12/2020	Harvesting synergies: joint learning from sharing relevant expertise for cVPP development
25/03/2021	The suitable transnational/European cVPP platform framework

facilitate the growth and empowerment of the Irish community energy niche.

The niche hybridisation strategy involved drawing elements of both the community energy and commercial logics. This allowed Irish energy communities (together with their partners) to establish Community Power, a hybrid organisation that combines elements of cooperative and commercial organisational forms. CP is a citizen and community-owned supply company that traded energy on behalf of its members, thereby allowing them to gain revenues for RE generation. As such, CP protected energy communities from market pressures, which made them more competitive within an unchanged selection environment. Concerning technology, to expand

Table 12
Overview semi-structured interviews.

Date	Duration	Interviewee
25–06–2018	80 min	Representative Tait House Community Enterprise
26–06–2018	90 min	Employee CRES / CP
26–06–2018	60 min	Representative TWF
27–06–2018	50 min	Representative Aran Islands Energy Co-operative
04–07–2018	50 min	CEO Tipperary Energy Agency (TEA)
27–02–2019	50 min	Employee CRES / CP
17–04–2019	60 min	Employee SEAI
17–04–2019	50 min	Employee DCCEA (Electricity Policy Section)
17–04–2019	40 min	Employee Local Council Tipperary
14–05–2019	40 min	Policy and campaign manager FOE

Table 13
The propositions in the three phases of upscaling, adopted from (Bauwens et al., 2022).

Upscaling phase		Proposition
Community volunteerism	1	In the community volunteerism phase of upscaling, a community logic tends to dominate within the community enterprise, with no major tension with other logics.
Niche creation	2	In the niche creation phase of upscaling, a tension between the community logic and the market logic at the intra-organisational level is created by the acquisition of external commercial resources and the provision of private benefits to members.
	3	To manage institutional tensions between the community and market logics at the intra-organisational level, community enterprises can use organisational forms limiting the influence of opportunistic investors.
	4	In the niche creation phase of upscaling, a tension between the community logic and the corporate logic at the intra-organisational level is created by the introduction of hierarchical management.
	5	To manage institutional tensions between the community and corporate logics at the intra-organisational level, community enterprises can use organisational forms reinforcing democratic participation in decision-making.
Niche expansion	6	In the niche expansion phase of upscaling, a tension between the community logic and the market logic at the inter-organisational level is created by increasing competition between CEs operating in the same market.
	7	To manage institutional tensions between the community and market logics at the inter-organisational level, community enterprises can reduce competition by sharing resources and setting up an umbrella organisation as a guarantor of community values.
	8	In the niche expansion phase of upscaling, a tension between the community logic and the corporate logic at the inter-organisational level is created by consolidation processes between CEs.
	9	To manage institutional tensions between the community and corporate logics at the inter-organisational level, community enterprises can collectively negotiate strategic decisions while holding on to local autonomy.

its generation portfolio, CP deployed large scale RES in line with prescriptions of the regime, combined with microgeneration as part of efforts to stretch the institutional context.

Mimicking incumbency allowed CP and the involved energy communities to become more competitive and to engage in activities aimed at transforming the system from within. Following the example of Meijer et al. (2019) who distinguished between passive (align) and active (adapt) forms of fitting in, this paper distinguished between passive and active forms of stretching. By making energy communities more competitive, CP passively stretched the regime by simulating the growth and wider diffusion of the community energy logic throughout the field, e.g. by increasing the 'fertility' of energy communities, CP allowed an increasing number of energy communities to 'invade' the incumbent energy system (McMullen, 2018). The increasing presence of the community energy logic could in turn threaten the coherence between regime logics (Bergman, 2017; Fuenfschilling and Truffer, 2014). Over time a new regime could be established that incorporates (elements of) the community energy logic, thereby allowing for a larger variation of organisations, technologies, and socio-technical configurations to exist. In the case of CP, the effectiveness of this passive form of stretching, however, relies strongly on the extent to which CP manages to survive, grow, and prevent mission drift while facing an unfavourable institutional context.

The actors involved in CP aimed to actively stretch the institutional context through institutional entrepreneurship (Hoogstraaten et al., 2020). As part of the process of establishing CP, a shared vision was created on empowering the Irish community energy niche. When sharing this vision with regime actors to increase their support, community energy was explicitly framed as a solution for the growing opposition against RE projects. As such, the establishment of CP played a key role in unifying and mobilising energy communities and other stakeholders into a larger community energy movement, which is considered crucial for successful niche development and for realising regime shifts (Kemp et al., 1998; Schot and Geels, 2008). It, however, must be seen to what extent the actors involved in CP will be able to influence the course of the ongoing energy transition.

Future research should investigate both ongoing and historical cases to further elaborate on what hybridisation entails in relation to these three dimensions, as well as on interactions between them. Regarding the latter, these studies could build on previous studies of Geels (2004), Rohracher (2001) and Van Summeren et al. (2021), who discussed these interactions in detail. In addition, future studies should zoom in on success factors of different strategies, both in terms of becoming more competitive within incumbent regimes and their transformative impact. These insights can help niche actors in developing effective niche strategies and to overcome incumbency. These future studies could build on concepts developed to explain the variation (or degrees of) hybridity in the context of organisations, to better understand different ways in which hybridisation takes place in practice and how the hybridisation of the same logics

can still result in different hybrids (Besharov and Smith, 2014; Litrico and Besharov, 2019; McMullen, 2018; Shepherd et al., 2019).

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Declaration of Competing Interest

We confirm that this manuscript has not been published elsewhere and is not under consideration by any other journal. All of the authors agree with submission to *EIST*. We have no conflicts of interest to declare.

Data availability

The authors do not have permission to share data.

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Appendices

Appendix A: The interinstitutional system

Appendix B: Overview of meetings and semi-structured interviews

Consortium partners of the cVPP project who participated in the project meetings (in varying compositions):

- Eindhoven University of Technology
- Municipality of Apeldoorn
- DuneWorks
- USEF
- Alliander
- Kamp C
- Tipperary Energy Agency
- Community Renewable Energy Supply (CRES) / Community Power (CP)
- Friends of the Earth Ireland
- Foundation Sustainable Projects Loenen / Energy Cooperative Loenen
- Translyse
- Qirion
- EnerGent

Appendix C: Overview of Irish project meetings

Actors who participated in the Irish project meetings:

- Templederry Wind Farm (TWF)
- Tipperary Energy Agency (TEA)
- Friends of the Earth (FOE)
- Aran Islands Energy Co-operative
- Energy Communities Tipperary Co-operative
- Claremorris and Western District Energy Co-operative
- Tait House Community Enterprise

Appendix D: Overview of cVPP project Deliverables

Appendix E: Overview of semi-structured interviews

Appendix F

References

Battilana, J., Lee, M., 2014. Advancing research on hybrid organizing - insights from the study of social enterprises. Acad. Manag. Ann. 8, 397–441. https://doi.org/10.1080/19416520.2014.893615.

Bauwens, T., Huybrechts, B., Dufays, F., 2020. Understanding the diverse scaling strategies of social enterprises as hybrid organizations: the case of renewable energy cooperatives. Organ. Environ. 33, 195–219. https://doi.org/10.1177/1086026619837126.

Bauwens, T., Vaskelainen, T., Frenken, K., 2022. Conceptualising institutional complexity in the upscaling of community enterprises: lessons from renewable energy and carsharing. Environ. Innov. Soc. Trans. 42, 138–151. https://doi.org/10.1016/j.eist.2021.12.007.

Bergman, B., 2017. Agents of change? An inter-organizational research agenda on hybrid new ventures. Adv. Entrep. Firm Emerg. Growth 19, 219–232. https://doi.org/10.1108/S1074-754020170000019007.

Besharov, M.L., Smith, W.K., 2014. Multiple institutional logics in organizations: explaining their varied nature and implications. Acad. Manag. Rev. 39, 364–381. https://doi.org/10.5465/amr.2011.0431.

CER, 2002. CER/02/152 Public Service Obligation Levy 2003: a Decision By the Commission For Energy Regulation. Dublin.

Dallamaggiore, E., Boo, E., Aze, F., Lennon, B., MacSweeney, R., Gaffney, C., Dunphy, N., Landini, A., Otal, J., 2016. Energy System Stakeholder Characterisation. Deliverable D2.1 of the ENTRUST H2020 Project: University College Cork, Cork.

Dalpiaz, E., Rindova, V., Ravasi, D., 2016. Combining logics to transform organizational agency: blending industry and art at alessi. Adm. Sci. Q. 61, 347–392. https://doi.org/10.1177/0001839216636103.

DCENR, 2015. Ireland's transition to a low carbon energy future 2015-2030. Gov. Pap. 122.

DCENR, 2014. Towards a Sustainable Energy Future For Ireland. Green Paper on Energy Policy, Government Papers.

Department of Transport, 1996. Energy and Communications, Renewable Energy. - A Strategy for the Future, Dublin.

DiMaggio, P.J., Powell, W.W., 1983. The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. Am. Sociol. Rev. 48, 147. https://doi.org/10.2307/2095101.

Dóci, G., Vasileiadou, E., Petersen, A.C., 2015. Exploring the transition potential of renewable energy communities. Futures 66, 85–95. https://doi.org/10.1016/j.futures.2015.01.002.

European Commission, 2019. Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, 158.

Farla, J., Markard, J., Raven, R., Coenen, L., 2012. Sustainability transitions in the making: a closer look at actors, strategies and resources. Technol. Forecast. Soc. Change 79, 991–998. https://doi.org/10.1016/j.techfore.2012.02.001.

Fischer, L.B., Newig, J., 2016. Importance of actors and agency in sustainability transitions: a systematic exploration of the literature. Sustainability 8. https://doi.org/10.3390/su8050476.

Friedland, R., Alford, R.R., 1991. Bringing society back in: symbols, practices and institutional contradictions. Powell, W.W., DiMaggio, P.J. The New Institutionalism in Organizational Analysis. University of Chicago Press, Chicago, pp. 232–267.

Fuenfschilling, L., Truffer, B., 2016. The interplay of institutions, actors and technologies in socio-technical systems - an analysis of transformations in the Australian urban water sector. Technol. Forecast. Soc. Change 103, 298–312. https://doi.org/10.1016/j.techfore.2015.11.023.

Fuenfschilling, L., Truffer, B., 2014. The structuration of socio-technical regimes - conceptual foundations from institutional theory. Res. Policy 43, 772–791. https://doi.org/10.1016/j.respol.2013.10.010.

Gaffney, F., Deane, J.P., Gallachóir, B.P.Ó., 2017. A 100 year review of electricity policy in Ireland (1916–2015). Energy Policy 105, 67–79. https://doi.org/10.1016/j.enpol.2017.02.028.

Geels, F.W., 2004. From sectoral systems of innovation to socio-technical systems. Res. Policy 33, 897–920. https://doi.org/10.1016/j.respol.2004.01.015.

Geels, F.W., 2002. Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. Res. Policy 31, 1257–1274. https://doi.org/10.1016/S0048-7333(02)00062-8.

Geels, F.W., Turnheim, B., 2022. The Great Reconfiguration. Cambridge University Press. https://doi.org/10.1017/9781009198233.

Government of Ireland, 2018. Renewable electricity support scheme (RESS) high level design 30.

Greenwood, R., Raynard, M., Kodeih, F., 2011. Institutional complexity and organizational responses. Acad. Manag. Ann. https://doi.org/10.1080/19416520.2011.590299.

Grin, J., Rotmans, J., Schot, J., 2010. Transitions to Sustainable Development. Routledge, New York.

Gui, E.M., MacGill, I., 2018. Typology of future clean energy communities: an exploratory structure, opportunities, and challenges. Energy Res. Soc. Sci. 35, 94–107. https://doi.org/10.1016/j.erss.2017.10.019.

Hermans, F., Roep, D., Klerkx, L., 2016. Scale dynamics of grassroots innovations through parallel pathways of transformative change. Ecol. Econ. 130, 285–295. https://doi.org/10.1016/j.ecolecon.2016.07.011.

Hicks, J., Ison, N., 2018. An exploration of the boundaries of 'community' in community renewable energy projects: navigating between motivations and context. Energy Policy 113, 523–534. https://doi.org/10.1016/j.enpol.2017.10.031.

Hielscher, S., Seyfang, G., Smith, A., 2013. Grassroots Innovations For Sustainable energy: Exploring Niche-Development Processes Among Community-Energy Initiatives. Innovation in Sustainable Consumption, pp. 155–180. https://doi.org/10.4337/9781781001349.

Hoogma, R.J.F., 2000. Exploiting Technological Niches: Strategies for Experimental Introduction of Electric Vehicles. Twente University.

Hoogma, R.J.F., Kemp, R., Schot, J., Truffer, B., 2002. Experimenting For Sustainable Transport Transport. Development and Sustainability. Routledge.

Hoogstraaten, M.J., Frenken, K., Boon, W.P.C., 2020. The study of institutional entrepreneurship and its implications for transition studies. Environ. Innov. Soc. Trans. 36, 114–136. https://doi.org/10.1016/j.eist.2020.05.004.

Howley, M., Holland, M., 2016. Energy in Ireland 1990 –2015 86. http://www.seai.ie/Publications/Statistics_Publications/Energy_in_Ireland/Energy-in-Ireland-1990-2015.

Huijben, J.C.C.M., Verbong, G.P.J., Podoynitsyna, K.S., 2016. Mainstreaming solar: stretching the regulatory regime through business model innovation. Environ. Innov. Soc. Trans. 20, 1–15. https://doi.org/10.1016/j.eist.2015.12.002.

Huybrechts, B., Haugh, H., 2018. The roles of networks in institutionalizing new hybrid organizational forms: insights from the european renewable energy cooperative network. Organ. Stud. 39, 1085–1108. https://doi.org/10.1177/0170840617717097.

Jackall, R., 1988. Moral mazes: the world of corporate managers. Int. J. Polit. Cult. Soc. 1, 598–614. https://doi.org/10.1007/BF01390690.

Kaijser, A., 2003. Redirecting infrasystems towards sustainability. Biel, A., Hansson, B., Mårtensson, M. Individual and Structural Determinants of Environmental Practice. Ashgate Publishers, London, pp. 152–179.
Kemp, R., Schot, J., Hoogma, R.J.F., 1998. Regime shifts to sustainability through processes of niche formation: the approach of strategic niche management. Technol. Anal. Strateg. Manag. 10, 175–198. https://doi.org/10.1080/09537329808524310.
Klein, S.J.W., Coffey, S., 2016. Building a sustainable energy future, one community at a time. Renew. Sustain. Energy Rev. 60, 867–880. https://doi.org/10.1016/j.rser.2016.01.129.
Lallemand-Stempak, N., 2017. Rethinking hybrids' challenges: the case of French mutual insurance companies. Management 20, 336–367. https://doi.org/10.3917/mana.204.0336.
Layder, D., 1998. Sociological Practice: Linking theory and Social Research. SAGE Publications, Ltd.
Litrico, J.B., Besharov, M.L., 2019. Unpacking variation in hybrid organizational forms: changing models of social enterprise among nonprofits, 2000–2013. J. Bus. Ethics 159, 343–360. https://doi.org/10.1007/s10551-018-4047-3.
McMullen, J.S., 2018. Organizational hybrids as biological hybrids: insights for research on the relationship between social enterprise and the entrepreneurial ecosystem. J. Bus. Ventur. 33, 575–590. https://doi.org/10.1016/j.jbusvent.2018.06.001.
Meijer, L.L.J., Schipper, F., Huijben, J.C.C.M., 2019. Align, adapt or amplify: upscaling strategies for car sharing business models in Sydney, Australia. Environ. Innov. Soc. Trans. 1–16. https://doi.org/10.1016/j.eist.2019.06.003.
Mitzinneck, B.C., Besharov, M.L., 2019. Managing value tensions in collective social entrepreneurship: the role of temporal, structural, and collaborative compromise. J. Bus. Ethics 159, 381–400. https://doi.org/10.1007/s10551-018-4048-2.
Mylan, J., Morris, C., Beech, E., Geels, F.W., 2019. Rage against the regime : niche-regime interactions in the societal embedding of plant-based milk. Environ. Innov. Soc. Transit. 31, 233–247. https://doi.org/10.1016/j.eist.2018.11.001.
Niet, I.A., Dekker, R., Van Summeren, L.F.M., Masson, E., Wieczorek, A.J., Veraart, F., Van Est, R., 2022. Digitalization of the EU Electricity System: The Challenge of a Just Energy Transition. The Handbook on Climate Change and Technology.
Pache, A., 2013. Inside the hybrid organization : selective coupling as a response to competing institutional logics 56, 972–1001.
Pel, B., 2015. Trojan horses in transitions: a dialectical perspective on innovation 'capture.' DOI: 10.1080/1523908X.2015.1090903 18, 673–691. 10.1080/1523908X.2015.1090903.
Petzer, B.J.M., Wieczorek, A.J., Verbong, G.P.J., 2019. Cycling as a service assessed from a combined business-model and transitions perspective. Environ. Innov. Soc. Transit. 1–15. https://doi.org/10.1016/j.eist.2019.09.001.
QSR International Pty Ltd., 2018. NVivo.
Raven, R.P.J.M., 2007. Niche accumulation and hybridisation strategies in transition processes towards a sustainable energy system: an assessment of differences and pitfalls. Energy Policy 35, 2390–2400. https://doi.org/10.1016/j.enpol.2006.09.003.
Rip, A., Kemp, R., 1998. Technological change. Rayner, S., Malone, E.L.. In: Human Choice and Climate Change, II. Resources and Technology. Battelle Press, Ohio, pp. 327–399.
Rohracher, H., 2001. Managing the technological transition to sustainable construction of buildings: a socio-technical perspective. Technol. Anal. Strateg. Manag. 13, 137–150. https://doi.org/10.1080/09537320120040491.
Ruggiero, S., Martiskainen, M., Onkila, T., 2018. Understanding the scaling-up of community energy niches through strategic niche management theory: insights from Finland. J. Clean. Prod. 170, 581–590. https://doi.org/10.1016/j.jclepro.2017.09.144.
Šahović, N., da Silva, P.P., 2016. Community renewable energy - research perspectives. Energy Procedia 106, 46–58. https://doi.org/10.1016/j.egypro.2016.12.104.
Saldaña, J., 2016. The Coding Manual For Qualitative Researchers, 3rd ed. SAGE Publications, Glasgow.
Schot, J., Geels, F.W., 2008. Strategic niche management and sustainable innovation journeys: theory, findings, research agenda, and policy. Technol. Anal. Strateg. Manag. 20, 537–554. https://doi.org/10.1080/09537320802292651.
Sengers, F., Turnheim, B., Berkhout, F., 2021. Beyond experiments: embedding outcomes in climate governance. Environ. Plan. C Polit. Sp. 39, 1148–1171. https://doi.org/10.1177/2399654420953861.
Sengers, F., Wieczorek, A.J., Raven, R., 2019. Experimenting for sustainability transitions: a systematic literature review. Technol. Forecast. Soc. Change 145, 153–164. https://doi.org/10.1016/j.techfore.2016.08.031.
Seyfang, G., Hielscher, S., Hargreaves, T., Martiskainen, M., Smith, A., 2014. A grassroots sustainable energy niche? Reflections on community energy in the UK. Environ. Innov. Soc. Transitions 13, 21–44. https://doi.org/10.1016/j.eist.2014.04.004.
Seyfang, G., Park, J.J., Smith, A., 2013. A thousand flowers blooming? An examination of community energy in the UK. Energy Policy 61, 977–989. https://doi.org/10.1016/j.enpol.2013.06.030.
Seyfang, G., Smith, A., 2007. Grassroots innovations for sustainable development: towards a new research and policy agenda. Environ. Polit. 16, 584–603. https://doi.org/10.1080/09644010701419121.
Shepherd, D.A., Williams, T.A., Zhao, E.Y., 2019. A framework for exploring the degree of hybridity in entrepreneurship. Acad. Manag. Perspect. 33, 491–512. https://doi.org/10.5465/amp.2018.0013.
Smith, A., 2007. Translating sustainabilities between green niches and socio-technical regimes. Technol. Anal. Strateg. Manag. 19, 427–450. https://doi.org/10.1080/09537320701403334.
Smith, A., Kern, F., Raven, R., Verhees, B., 2014. Spaces for sustainable innovation: solar photovoltaic electricity in the UK. Technol. Forecast. Soc. Change 81, 115–130. https://doi.org/10.1016/j.techfore.2013.02.001.
Smith, A., Raven, R., 2012. What is protective space? Reconsidering niches in transitions to sustainability. Res. Policy 41, 1025–1036. https://doi.org/10.1016/j.respol.2011.12.012.
Thornton, P.H., Ocasio, W., 1999. Institutional logics and the historical contingency of power in organizations: executive succession in the higher education publishing industry, 1958-1990. Am. J. Sociol. 105, 801–843. https://doi.org/10.1086/210361.
Thornton, P.H., Ocasio, W., Lounsbury, M., 2012. The Institutional Logics Perspective. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199601936.001.0001.
Tracey, P., Phillips, N., Jarvis, O., Phillips, N., 2011. Bridging institutional entrepreneurship and the creation of new organizational forms : a multilevel model bridging institutional entrepreneurship and the creation of new organizational forms : a multilevel model. Organ. Sci. 22, 60–80. https://doi.org/10.1287/orsc.1090.0522.
van Bommel, N., Höffken, J., 2021. Energy justice within, between and beyond European community energy initiatives: a review. Energy Res. Soc. Sci. 79, 102157 https://doi.org/10.1016/j.erss.2021.102157.
Van den Berghe, L.H.G.J., Wieczorek, A.J., 2022. Community participation in electricity markets: the impact of market organisation. Environ. Innov. Soc. Transit. 45, 302–317. https://doi.org/10.1016/j.eist.2022.10.008.
Van den Bosch, S.J.M., 2010. Transition experiments: exploring societal changes towards sustainability.
Van Summeren, L.F.M., Breukers, S., Wieczorek, A.J., 2022. Together we're smart! Flemish and Dutch energy communities' replication strategies in smart grid experiments. Energy Res. Soc. Sci. 89, 102643 https://doi.org/10.1016/j.erss.2022.102643.
Van Summeren, L.F.M., Wieczorek, A.J., Bombaerts, G.J.T., Verbong, G.P.J., 2020. Community energy meets smart grids: reviewing goals, structure, and roles in virtual power plants in Ireland, Belgium and the Netherlands. Energy Res. Soc. Sci. 63 https://doi.org/10.1016/j.erss.2019.101415.
Van Summeren, L.F.M., Wieczorek, A.J., Verbong, G.P.J., 2021. The merits of becoming smart: how Flemish and Dutch energy communities mobilise digital technology to enhance their agency in the energy transition. Energy Res. Soc. Sci. 79, 102160 https://doi.org/10.1016/j.erss.2021.102160.
Walker, G., Devine-Wright, P., 2008. Community renewable energy: what should it mean? Energy Policy 36, 497–500. https://doi.org/10.1016/j.enpol.2007.10.019.
Walsh, B., 2018. Community: a powerful label? Connecting wind energy to rural Ireland. Community Dev. J 53, 228–245. https://doi.org/10.1093/cdj/bsw038.

Wesseling, J.H., Bidmon, C., Bohnsack, R., 2020. Business model design spaces in socio-technical transitions: the case of electric driving in the Netherlands. Technol. Forecast. Soc. Change 154, 119950. https://doi.org/10.1016/j.techfore.2020.119950.

Wittmayer, J.M., Avelino, F., Pel, B., Campos, I., 2021. Contributing to sustainable and just energy systems? The mainstreaming of renewable energy prosumerism within and across institutional logics. Energy Policy 149. https://doi.org/10.1016/j.enpol.2020.112053.

York, J.G., Hargrave, T.J., Pacheco, D.F., 2016. Converging winds: logic hybridization in the Colorado wind energy field. Acad. Manag. J. 59, 579–610. https://doi.org/10.5465/amj.2013.0657.