Facultad de Ciencias Económicas y Empresariales

BRIDGING DISCONNECTIONS THROUGH SOCIAL ENTREPRENEURSHIP TO TACKLE ENERGY POVERTY

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MADRID | November 14th, 2022

Dedication

I humbly dedicate this doctoral study to my partner, Daniel Pons, my daughter, Ana, my son Daniel, and all my family, for their unconditional support, encouragement, and endurance throughout this doctoral journey. Thank you for your delightfully continued support of everything and, of course, for helping to keep our family under control. Special thanks for caring for me when I noticed what I was going through.

Daniel, this project owes you the most time of anyone. So, thank you for unconditionally supporting me and being the most loving family imaginable.

I also dedicate this thesis to my parents, who always supported me in my decisions and were always a source of inspiration.

Preface

This report is the outcome of my thesis concluding my Doctorate in Business and Territorial Competitiveness, Innovation and Sustainability (CETIS) at the Pontifical University of Comillas. When writing my thesis, I learned what the energy poverty problem stands for, how we all need energy services to live and how relevant the minimisation of the energy poverty problem is for our society. Even if we are presumed to be in the Global North, everyone is vulnerable to energy poverty.

It was also peculiar to focus on critical thinking. I could explore diverse lines of research to understand the problem better and participate actively in the energy poverty network from an academic perspective. I could deliberate on my and others' roles from the lens of energy poverty. Then I understood how privileged I am to become a social scholar. The social science world is generously inspiring my professional and personal life in a dynamic and circular process that has just started.

I wish the reader good luck in reading this thesis.

Acknowledgements

Getting to the end of my thesis, this PhD is the product of the support several people have provided me over the last few years, not just during the research project want to name just a few of them.

First, I'd like to thank my supervisors, Dr Amparo Merino (from Universidad Pontificia de Comillas) and Dr Iain Cairns (from the University of Strathclyde), for their service, support, time, belief, dedication and mentorship in the research and many other areas of my life. You played an extremely generous role in this research process and guided me through the intellectual curiosities we share in the energy and social entrepreneurship field. I thoroughly enjoy your willingness to combine scholarly discipline with originality and to enjoy every encounter. Such is the influence you both have had on my academic, professional, and personal development that I'm unlikely ever to be able to make it up to you. So instead, I look forward to working with you both for a long time to continue to find new connections.

I am profoundly grateful to my colleagues in ICADE and ICAI (Comillas) research group, especially Dr Carmen Valor, for selecting me and allowing me to discover the social research world. Likewise, thanks to the Hunter Center for Entrepreneurship of the University of Strathclyde in Glasgow, where I stayed for three months, primarily to Dr Iain Cairns for his care and commitment to enabling my research there. Furthermore, thanks to the members of the Energy and Poverty Chair, who offered extensive support to understand the particularities of the energy poverty research and network and facilitate the dissemination of our papers. Many thanks to those who assisted me when I most needed it and who offered me their advice. They will find their influence in these pages.

I also express my enormous gratitude to the Universidad Pontificia de Comillas team for your willing and utterly supportive participation in this research journey. I hope I will justify your trust with ongoing contributions that move the social energy and social entrepreneurship fields forward and contribute to the University's vision for cultivating and transferring science.

A big thank you and a 'cheers!' to my friends and colleagues Mónica Vasquez del Solar, Nuria Fernandez Muñiz, Grace Akullo, Carolina Villegas, and Valeriya

Sidelkivska, and all my fellow PhD students. Thank you all for your support and unlimited flow for your accompanying on this shared journey. Thank you so much for your endless encouragement and for providing motivation and feedback on my ideas.

The feedback in the PhD process has been surprisingly rewarding and helpful. I also acknowledge the editors and anonymous reviewers who have provided invaluable feedback on the publications included here. I want to include special thanks to AnnMarie Strigari for her reviews.

Finally, I would like to thank Ashoka Spain for their assistance in providing the information for the initial database of the interviews, and we would also like to thank all the interviewees and participants that contributed to this study that are people passionate about their work, about human relationships, and about linking social justice with energy issues. We would particularly like to thank these people for sharing a bit of their everyday reality with people suffering from vulnerable situations. It is to them that we direct this research.

Despite this project making me so busy and unavailable, I am profoundly grateful to my friends and family for continuing to be my friends and family. I owe you all much time.

Abstract

The grand challenge of energy poverty is increasing in Europe and demands responses from a multi-actor approach. The social logic renders a variety of resources, skills, and perspectives that may play a crucial role in the development of networked responses to energy poverty through more spaces for interventions. However, the social entrepreneurship figure and intermediation's role in a fragmented energy poverty network is understudied in energy social science. Through the combination of several disciplines and fields of research, we explore how social entrepreneurship could contribute to alleviating energy poverty with a collective and network perspective. In an interpretative epistemology, this research process utilises several methods, starting with a systematic literature review to identify relevant topics in the intersection of social entrepreneurship, social innovation, and energy poverty in the just transition.

This literature review suggests the need for further exploration of the networked nature of energy poverty and the role of social entrepreneurship in the network. For that purpose, a hermeneutic phenomenological study is carried out to examine the experiences of social entrepreneurs within the energy poverty network. As a result, a spectrum of narratives of social entrepreneurship emerges, showing how the hybrid and collective nature of social entrepreneurship has the potential to coordinate the network. A particular case of this coordinating role is explored in the interplay between social entrepreneurship and large energy companies by proposing a conceptual model to advocate social energy departments within energy services companies. Those findings extend and enrich the knowledge about the role of the social entrepreneurship actor and, second, to stakeholders' management literature, advocate the prioritisation of vulnerable stakeholders through social intrapreneurship and organisational change. To tap into the potential of social entrepreneurship in energy poverty, tailor-made policies and an overall well-designed policy mix that fosters social innovation are necessary for the energy transition in Europe. Finally, we derive policy implications for Spain concerning building an energy poverty network, and we develop new avenues for research.

Resumen

El gran reto de la pobreza energética está aumentando en Europa y exige respuestas desde un enfoque multiactor. La lógica social aporta una variedad de recursos, habilidades y perspectivas que juegan un papel crucial en el desarrollo de respuestas en red a la pobreza energética a través de más espacios de intervención. Sin embargo, la figura del emprendedor social y el papel de la intermediación en la red fragmentada de pobreza energética están poco estudiados en la ciencia social de la energía. Combinando varias disciplinas, exploramos cómo el emprendimiento social contribuiría a paliar la pobreza energética con una perspectiva de red. En una epistemología interpretativa, este proceso de investigación utiliza varios métodos, partiendo de una revisión sistemática de la literatura para identificar temas relevantes en la intersección del emprendimiento e innovación social y la pobreza energética en la transición justa.

Esta revisión bibliográfica sugiere la necesidad de seguir explorando la naturaleza en red de la pobreza energética y el papel del emprendedor social en la red. Para ello, se realiza un estudio fenomenológico hermenéutico para examinar las experiencias del emprendedor social dentro de la red de pobreza energética. Como resultado, surge un espectro de narrativas de emprendimiento social, que muestra cómo su naturaleza híbrida y colectiva tiene el potencial de coordinar la red. Un caso particular de este papel coordinador se explora en la interacción entre el emprendimiento social y las grandes empresas energéticas, proponiendo un modelo conceptual para defender los departamentos de energía social en las empresas energéticas. Estas conclusiones amplían y enriquecen el conocimiento sobre el papel del actor emprendimiento social y, en segundo lugar, a la literatura de gestión de grupos de interés abogando por la priorización de los vulnerables a través del intraemprendimiento social y el cambio organizativo. Para aprovechar el potencial del emprendimiento social en materia de pobreza energética, son necesarias políticas a medida y una combinación de políticas bien diseñada que fomente la innovación social para la transición energética en Europa. Finalmente, derivamos implicaciones políticas para España en relación con la construcción de una red de pobreza energética, y desarrollamos nuevas vías de investigación.

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Manjon, M. J., Merino, A., & Cairns, I. (2022). Business as not usual: A systematic literature review of social entrepreneurship, social innovation, and energy poverty to accelerate the just energy transition. *Energy Research & Social Science*, 90, 102624.	Elsevier	Default permission under Author-Publisher Copyright Agreement

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The presentation of publications varies from their published format in these ways, but the text and structure are otherwise unchanged. This includes the English spelling used in the publications. For readers' convenience, the reference lists that have been removed and aggregated at the end of the document and tables and figures have been renumbered to relate to the thesis overall, not the individual publications.

1. Introduction

The journey toward the low-carbon energy transition challenges the inclusion of energy-vulnerable households, an issue of growing interest, particularly in Europe (Hiteva & Sovacool, 2017). Energy poverty refers to a household's difficulty or inability to maintain adequate temperature conditions and other essential domestic energy services (Bouzarovski & Petrova, 2015). It is estimated to affect more than 37.4 million people in Europe, as pointed out by the most recent report from the EU Energy Poverty Observatory (EPOV) (Bouzarovski et al., 2020). COVID-19 strongly influenced the expansion of energy poverty. War, conflict and geopolitical risks affect the lack of energy sources. Therefore, this number is likely to grow (Sovacool, del Rio, et al., 2020). If not adequately addressed through an attempted strategy coordinated by all actors, a more significant number of vulnerable people will also be affected by energy poverty.

The purpose of this introduction is to present the rationale of the PhD thesis, articulate the research aims and questions, and provide an overview of the thesis structure.

1.1. Rationale for this research

1.1.1. Energy poverty is a complex problem that requires a multi-actor approach

Energy poverty is a rapidly dynamic moving field in Europe, with increasingly diversified viewpoints from across the academic spectrum (Thomson et al., 2017; Thomson & Bouzarovski, 2018). Energy poverty has been predominantly attributed to the triad of insufficient income, high energy prices, and energy inefficiency (Bouzarovski, 2018; González-Eguino, 2015). However, other approaches view this delimitation as incomplete because it does not consider those causes of a more human-centred nature (Boni et al., 2016).

Although there is no universally accepted definition of energy poverty, it is widely recognised that energy services, such as heating, cooling, or refrigerating food, are necessary for people's health and to enable effective participation in society (Bosch et al., 2019; Bouzarovski & Simcock, 2017; Day et al., 2016). From the different definitions, we

prefer a broader and global approach to energy poverty that does not differentiate between Global North and South: “energy poverty is the difficulty or inability of a household to maintain adequate temperature conditions and other essential energy domestic services at a reasonable price” (Bouzarovski & Petrova, 2015). We acknowledge that a single method cannot exist without establishing a clear definition and accurate data on the problem. The need for a general definition of energy poverty is challenging, and there is a need for a well-organized, quantifiable way to measure and monitor it across the European member states (Bouzarovski et al., 2012). We stress the difficulties of making and tracking policies oriented to the most vulnerable consumers (Barrella et al., 2021).

Energy poverty has dealt with three different but interrelated central debates that are summarised through three dominant aspects: (i) the variety of causes and definitions, (ii) the predominant quantitative approaches to analyse the problem and (iii) the diversity of indicators.

If defining the problem is not simple, the combination of constraints can make things somewhat more complex. Firstly, there is ongoing research on the diversity of causes of energy poverty (González-Eguino, 2015), followed by multiple definitions that include such motives (Thomson et al., 2017). Understanding the connections between those two interrelated researchers’ objectives is complex because it requires a deeper understanding of the multiple alternative spaces of response beyond the traditional actors that energy poverty scholars (Bouzarovski & Petrova, 2015; Day et al., 2016; Grossmann et al., 2021; Middlemiss & Gillard, 2015) have examined through the concepts of energy services, precarity, and capabilities, offering more elements for the analysis of the socio-political dynamics shaping experiences of energy poverty.

These sociological studies mark a significant shift within the understanding of energy poverty. Bouzarovski and Petrova (Bouzarovski & Petrova, 2015) have engaged the concept of energy services to bring about the benefits that people derive from using energy, such as mobility, lighting, cooking, and so on, rather than the energy itself. These theoretical approaches recognise that domestic energy poverty is only fully understood by looking across multiple energy services and their interconnections, as well as taking the perspective beyond different actors (Middlemiss et al., 2019; Middlemiss & Gillard, 2015).

Secondly, we find the dominance of positivist research epistemology in the energy sector. Social problems require measuring and interpreting meanings, experiences, and

underlying explanations (Czarniawska, 2004; Yanow, 2000), specifically in the energy social science field (Grossmann et al., 2021; Middlemiss et al., 2019; Sovacool, 2014; Sovacool et al., 2018). Hence, the epistemological approach of this thesis is interpretive, as opposed to the positivist traditional approach to energy research that looks for causal relationships (Frigo, 2017). A limited perspective towards the need to measure the problem has led to emphasising only more objectifiable elements and less on experiences or the perception of the phenomenon that some other scholars highlight, such as capabilities and skills in more holistic, collective and hybrid perspectives (Day et al., 2016). Therefore, this strand of extant research prioritises the relevance of the diversity of experiences of energy poverty by the people suffering from it and the different people working on it.

Thirdly, the emphasis on unidimensional indicators to measure poverty is insufficient to understand the implications of the problem in a person's life. Simple or less structured solutions, such as the electric bonus, are short-term one-dimensional solutions that do not integrate all individual's needs (Barrella et al., 2021). The "social bonus" does not mitigate energy poverty but helps identify "new typologies of households" energy poor (Cadaval et al., 2022).

New strands of literature underscore how energy needs underpin many of the 'functionings' that enable people to have a (minimally) decent quality of life (Bouzarovski & Petrova, 2015). In the end, searches from unidimensional indicators to more multidimensional and sophisticated indicators for energy poverty measurement are not enough, mainly due to their inability to capture the variety of realities experienced by each individual, such as personal, housing and climate-related particularities. Research capturing human diversity is a critical challenge that energy researchers are incorporating into their agendas to reflect the diversity and complexity of energy poverty, not only in statistical form but also through understanding. However, more structural and holistic solutions may emphasise the capabilities approach to energy poverty and social relations rather than energy availability (Middlemiss et al., 2019).

Energy poverty is a complicated problem with no single solution, and it requires a multi-stakeholder approach (Elia & Margherita, 2018; Waddock et al., 2015). Given its systemic, multidimensional, and frequently invisible nature, the complexity of energy poverty requires the coordinated participation of multiple interrelated actors through complex interventions (van Tulder & Keen, 2018). However, previous research has mainly

overlooked this multiple-actor approach. Structural problems imply the multi-actor participation of connected individuals who provide multiple-faceted responses and are not isolated from one another. Therefore, collective approaches may be relevant when addressing energy poverty (Martiskainen et al., 2018; Montgomery et al., 2012) and are increasingly gaining scholarly interest.

This collective approach suggests an increasing interest in the network formed by the different actors in the energy poverty ecosystem. A variety of actors, such as governments, regulators, private companies (from small and large businesses to Non-Governmental Organisations (NGOs), or civil society organisations (including consumer associations and social movements) are, whether consciously or not, forming this energy poverty network (Bouzarovski et al., 2020). Different actors with different roles provide varied responses to fuel poverty, but there is evidence that the energy poverty network is emergent and fragmented.

1.1.2. An unexplored actor in the multi-stakeholder energy poverty: the social entrepreneur

This study delves into a multidimensional and multi-actor approach through the role of social entrepreneurship in a fragmented energy poverty network. The two strands of literature on social entrepreneurship and energy poverty have rarely been brought into direct conversation with one another. There are only a few examples that emphasise the relevance of social entrepreneurship in the literature on energy poverty (Hewitt et al., 2019; Hillman et al., 2018; Hiteva & Sovacool, 2017), and only a few case studies have partially addressed the intersection (Boerenfijn et al., 2018; Sahakian & Dobigny, 2019; Webb, 2015).

Social entrepreneurship tackle problems with collective approaches guided primarily by a social mission (Saebi et al., 2019) and is often associated with social innovation since social entrepreneurs search for innovative solutions to meet social needs. The hybrid nature of social entrepreneurship combines institutional logic in unprecedented collective ways (Battilana & Dorado, 2010) with a social mission in an enterprise format (Dacin et al., 2011; Elia & Margherita, 2018; Mato-Santiso & Rey-García, 2019; Mitzinneck & Besharov, 2019; Montgomery et al., 2012). Hybridity between economic and social and collective traits may position this actor as a connector, also due to his or her

capacity for agency, pointing out a potential role in interacting with the other dominant actors in the network (Bauwens et al., 2020; Huybrechts & Haugh, 2018; Martiskainen et al., 2018; Picciotti, 2017). The hybrid nature endows social entrepreneurs with diverse skills that can be useful as bridging functions and facilitators for providing multi-stakeholder solutions across different languages. Social entrepreneurs are innovative members of a network of actors working on energy poverty, as illustrated by the Energy Cafés (Martiskainen et al., 2018), the home energy advisors called *green doctors* (Sdei et al., 2015), or other diverse projects as the Spanish social enterprises such as Aeioluz, Socaire, Asociación Ciencias Ambientales (Environmental Science Association-ACA), and other energy community spaces (Bauwens et al., 2020, 2022; Campos & Marín-González, 2020; Huybrechts & Haugh, 2018) as the energy communities Sapiens or Ara de Olmos. However, the literature rarely investigates this need for coordination.

The opportunity to examine the role of the social entrepreneur in the energy poverty network may provide several responses by underscoring the collective nature of social entrepreneurship, particularly its hybrid capabilities that would be revealed through its intermediary agency. The extant literature on energy poverty does not sufficiently conceptualise two topics: the activity of social entrepreneurship whose mission is to tackle energy poverty, and how awareness of the problem and commitment from social enterprise to achieving social goals is relevant to systemic transformation (Dawson & Daniel, 2010; Gupta et al., 2020)

Some literature intends to understand the meaning of energy poverty, underscoring the relevance of understanding the lived experiences of social entrepreneurship in the field (Bouzarovski et al., 2020; Butler & Sherriff, 2017; Grossmann et al., 2021; Middlemiss & Gillard, 2015). Those qualitative approaches which are attentive to people’s lives justify the increase in researchers' focus on measuring and identifying vulnerability (Barrella et al., 2021; Hills, 2011; Kyprianou et al., 2019; Sovacool & Mukherjee, 2011; Thomson, 2020; Thomson & Bouzarovski, 2018). However, making and monitoring policies oriented to the most vulnerable consumers is still challenging and is utilising more qualitative measurements of the experiences of vulnerable consumers.

This thesis proposes using interpretive research methods to understand the perceptions of other actors as social entrepreneurs acting in energy poverty, which may allow researchers to understand and integrate values, beliefs, and feelings with a more

human-centred approach in a social world formed by multiple different interpretations (Dawson & Daniel, 2010). The study of social entrepreneurship is relevant because energy poverty demands responses from the multiple actors involved in the energy poverty network, which can be understood as a group of entities or individuals interconnected (Bouzarovski et al., 2020; Littlewood & Khan, 2018) through the implementation of any activity towards energy poverty mitigation.

Consciously or not, all the actors form this energy poverty network in a dynamic process (Bouzarovski et al., 2020). The network actors have a common goal: reducing or eradicating energy poverty from different perspectives. Moreover, there are no formal or informal large spaces where these actors can act in a coordinated manner. Several spaces are blossoming for interventions from network and community perspectives, such as Alianza contra la Pobreza Energética (Alliance against Energy Poverty-APE), Asociación Ciencias Ambientales (Environmental Science Association-ACA), Fundación Ecodes (Ecodes Foundation), Ashoka (Ashoka and Schneider Electric Foundation, 2019), and other energy community spaces (Bauwens et al., 2020, 2022; Campos & Marín-González, 2020; Huybrechts & Haugh, 2018) for social innovation with more and more activity and impact. Since the "others", the different actors of the network, seem to speak a foreign language (Jonas, 2016), the search for cohesion within the network can contribute to consolidating the legitimation of hybrid organisations in plural field-level audiences (Huybrechts & Haugh, 2018; Martí et al., 2017).

1.1.3. The hybrid adaptability of the social entrepreneur is required to understand the context of energy poverty

Hybridity is crucial for complex problems that require responses on various multilevel and multi-actor scales (Geels, 2002, 2019). Social entrepreneurship intends to tackle social problems by adopting a non-business-as-usual approach with different dimensions within the network (Mair & Martí, 2006). However, we found little research on how and why the social entrepreneur operates and only a few social innovation approaches to energy poverty are subject to scholars' analysis (Boerenfijn et al., 2018; Campos & Marín-González, 2020; Hanke & Lowitzsch, 2020; Martiskainen et al., 2018). Some scholars emphasised that hybrid skills are appropriate to study specific human contexts, such as energy poverty, that

have a plural and diverse nature (Bauwens et al., 2020; Huybrechts & Haugh, 2018) but also face some challenges due to such hybridity (Battilana & Dorado, 2010)

Social entrepreneurship research draws attention to the local embeddedness of social entrepreneurship and how social entrepreneurship can be understood only in context (Sengupta & Lehtimäki, 2022). Energy poverty researchers point out that the choice to study human dimensions in energy poverty relates to the careful interpretations required when looking at different contexts (Grossmann et al., 2021).

Therefore, we underscore the geographical context linked to studying energy poverty. Within the European geographical boundaries of this thesis, diverse situations are given from multilevel and multi-actor infinite perspectives (Gibson-Graham, 2008). It is relevant to contextualise the case of this thesis within the framework of European geography mainly due to the separation of lines of study between the access to energy in the Global South and energy poverty in the Global North. Some researchers start from a geographical perspective in energy studies (Bouzarovski & Simcock, 2017).Geographical disparities highly influence the risk and incidence of domestic energy deprivation as a vital component of energy justice and seeing how injustices emerge in different geographical contexts. Such a geographical perspective is essential when illuminating socio-material inequalities that drive spatially uneven exposure to energy poverty (Aristondo & Onaindia, 2018; Robinson, 2019; Sahakian & Dobigny, 2019).

Energy poverty is manifested in a diversity of contexts. Local embeddedness is a central element around which the importance of the spatial context of the social enterprise revolves. Understanding each social situation's embeddedness calls for special hybrid skills to emerge when dealing with energy poverty: vulnerability. The concept of vulnerability is not apparent but is a systemic and often hidden reality (Butler & Sherriff, 2017; Hall et al., 2013). It is a broader concept than energy poverty. It is reflected in many different situations; in all cases, it does not necessarily have to happen. It is not a question of fate (destiny). Scholars and practitioners need to listen to the people suffering from it and work to providing more appropriate solutions (Creutzfeldt et al., 2020). The multi-actor approach may help identify and overcome vulnerability through each actor's potential agency, complementing the other actors' agency in a co-responsible multilevel action (Bouzarovski et al., 2020).

Finally, we would like to highlight the fact that social entrepreneurship is a concept that may be understood as linked to hybrid organisations with a social mission to meet social needs (Dacin et al., 2011; Dacin et al., 2010; Hiteva & Sovacool, 2017; Martiskainen et al., 2018). Social entrepreneurship is connected with the term "social enterprise" (Nandan et al., 2015), which might not be powerful actors remaining as niche players. Nevertheless, they might be actors who exercise a different kind of power in alternative ways (Tulder, 2018). To illustrate this idea, we offer one definition of social entrepreneurship that suggests the idea of hybridity.

A practical definition of social entrepreneurship

A social enterprise is a dynamic, ethical, and sustainable way of doing business which positively impacts communities and makes a difference to people, the environment and the economy. Social enterprises are businesses that trade in many markets selling goods or services to consumers, other companies and organisations, government, and the public sector. They aim to become financially sustainable, with 100% of their profit reinvesting into their social, environmental, or economic purpose. In addition, they are asset-locked, meaning that all assets and profits are locked into the organisation and cannot be distributed for private gain (The Pocket Guide to Glasgow Social Enterprise Network, Editor Ed Harts, 2018).

1.1.4. The intermediation function in the energy poverty network is ill-considered

Energy poverty literature skips over the study of the network of actors in this field. The role of some actors in integrating and reinforcing the emerging and fragmented network is understudied (Bouzarovski, 2018). The structural and multidimensional aspects of energy poverty that go beyond individual circumstances also demand responses from the multiple actors involved in the energy poverty network (Bouzarovski et al., 2020), which can be understood as a group of entities or individuals interconnected (Littlewood & Khan, 2018) through the implementation of any kind of activity aimed at energy poverty mitigation. A variety of actors such as governments, regulators, private companies (from small and large businesses to NGOs, or civil society organisations (including consumer associations and social movements), whether consciously or not, are currently forming this energy poverty network.

A coordinated network under a common aspiration or mutual interest to minimise energy poverty may provide (i) more effective and (formally or informally) connected responses to energy poverty and (ii) reinforce the relationship among the members better than initiatives developed by isolated actors (Huybrechts & Haugh, 2018). The actors that form the network have a common goal to mitigate or eradicate energy poverty from different perspectives. Social networks are instrumental in pursuing these divergent perspectives of the vulnerable community (addressing social, economic, and environmental objectives); thus, they have the potential to help implement multi-actor and multilevel interventions to tackle energy poverty (Nathwani & Kammen, 2019).

Although the energy network nominally exists while its members are working separately on the problem, in practice, the network is primarily fragmented, uncoordinated, and unknown to the supposed members. In other words, the energy poverty network lacks cohesion, measured as the degree of interconnections among a group of nodes (Guyet et al., 2018; Webb, 2015). In addition, actors vary in their capabilities and aims. This creates problems, such as information asymmetry (Joskow, 2007; Martiskainen et al., 2018), the use of different languages by each actor, especially activists and mainstream corporations (Campos & Marín-González, 2020) or the unclear identification and role of each member of the energy poverty network. Such differences trigger the need for coordination and intermediary capabilities (Smith, 2007). The network may be an effective tool for alleviating energy poverty where all the voices can express their views and proposals (Bale et al., 2013; Webb, 2015).

Paying attention to the network, we observe how the phenomenon of social entrepreneurship generates intermediary capacities that may be an alternative option to connect different actors, understand the energy vulnerability, and enable network integration (Hess, 2018). This network perspective is slightly addressed by examining the collective experience of social innovators and entrepreneurs in energy poverty, considering their hybrid nature (Huybrechts & Haugh, 2018). The hybrid nature of social entrepreneurship (Dacin et al., 2011; Dacin et al., 2010; Gupta et al., 2020) renders a variety of resources, skills, and perspectives that may play a crucial role in the development of networked responses to energy poverty through more spaces for interventions emerging in both deliberate and non-deliberated interaction (Martiskainen et al., 2018). The collective nature of the problem of energy poverty requires interrelated actors' coordinated

participation. Despite some stakeholders' efforts, neither governmental policies, civil society, NGOs, nor the private sector (utilities, small entrepreneurs, or social innovators) have thus found the key to reducing the problem.

Interest in social innovation and social entrepreneurship issues within energy social science to provide partial solutions to tackle energy poverty is increasing (Hiteva & Sovacool, 2017; Martiskainen et al., 2018; Sovacool, 2014). A social enterprise might be a productive space to build integrative responses to energy vulnerability and coordinate and leverage resources throughout the energy poverty network (Huybrechts & Haugh, 2018; Mato-Santiso & Rey-García, 2019; Mitzinneck & Besharov, 2019; Montgomery et al., 2012).

We adopt the following defitnition of social entrepreneurship as an collective experience of social innovation and transformation in the face of the network nature phenomenon that defines energy poverty. We acknowledge the integrative approach of the collective dimension often embedded in social entrepreneurship (Montgomery et al., 2012; Picciotti, 2017). From this perspective, we also acknowledge the criticism of social entrepreneurship, the tensions, and the challenges of social entrepreneurship to tackle the voids in a system (Dey et al., 2016; Dey & Steyaert, 2018; Mitzinneck & Besharov, 2019). The intention is not to idealise social enterprises, discarding all the controversies, tensions and elements that challenge the intermediation in the energy poverty network, nor to have the last word with a single solution. Instead, we intend to draw attention to those actors in energy poverty whose narratives may have more coordination capabilities.

Social innovation is necessary in the transition (Geels, 2021). To clarify the interlink of social innovation, social entrepreneurship, and social intrapreneurship in this thesis, we mention that social entrepreneurship is the establishment of initiatives to implement social innovations, and social intrapreneurship is the application and integration of social innovations within organizations (Nandan et al. 2015). Social innovation includes any new processes, products and services that address social issues to improve the quality of human life. Social innovation is a broad concept and practice that could be implemented through social intrapreneurship or social entrepreneurship. Social intrapreneurship is an entrepreneurial behavior exhibited by employees within an organization.

1.1.5. The emerging figure of social entrepreneurship in the just energy transition addressing social energy issues

The just energy transition is the context of this research. Energy transition refers to a significant structural change in the energy system towards a more sustainable energy system based on efficiency and low-carbon sources (Bridge et al. 2013). In the transition literature, the social aspect of innovation was often hidden behind the technical agenda and business competence (Dawson & Daniel, 2010). However, a complete understanding of the social dimensions of energy poverty in the frame of the transitions is becoming a previous step to then be enabled to theoretically contribute to emphasising effective coordination by the collective hybrid social entrepreneur to tackle such a problem (Moulaert, 2019). Social entrepreneurship logic in the transition frames social missions, agency, empowerment, and proximity to vulnerable communities (Hanke & Lowitzsch, 2020; Pareja-Cano et al., 2020).

The transition requires experimentation, dynamism, and flexibility that social entrepreneurs can provide if they acquire more influence and relevant roles (Hockerts & Wüstenhagen, 2010; Huybrechts & Haugh, 2018). We acknowledge some extant literature on social entrepreneurship in energy poverty (Ashoka and Schneider Electric Foundation, 2019). We highlight the impact of the program of Ashoka and the Schneider Electric Foundation to support social innovations in energy poverty in Europe. Such programs show that the reality of the phenomenon of social innovation is happening more intensively than is reported in the literature (Hoppe & de Vries, 2019). In the global North, the number of energy-vulnerable people is increasing despite the growing number of private and third-party interventions (Kyprianou et al., 2019).

Furthermore, social entrepreneurship and transition scholars recognise that social entrepreneurship is still a niche that has not expanded on a scale level but has excellent potential as not-as-usual business (Hockerts & Wüstenhagen, 2010; Schot & Geels, 2008; Vasquez-Delsolar & Merino, 2021). Conversations about the agency of niche actors, such as social intrapreneurs, in interaction within incumbent energy companies, stand out. This emerging niche of social intrapreneurs in energy corporations is also understudied. We want to emphasise the historical moment of the energy transition as a dominant context in addressing the problem of energy poverty. In the decarbonisation era, minimising energy poverty constitutes an element of the Sustainable Development Goals ("SDGs") 1 and 7. Such a non-binding legal framework is adequate to eradicate energy poverty (van Zanten

& van Tulder, 2018). Not only is the energy poverty discourse present in this work, but the fight against climate change appears transversally linked to the energy poverty problem. The transition may impact the vulnerable consumers who should not be left behind again since they are the ones who will suffer more of the consequences of climate change. Energy justice is an element that energy poverty scholars are developing as a theoretical framework to legitimise the moral obligation of the actors in the network (Jenkins et al., 2018). Energy justice is a conceptual, analytical, and decision-making framework for understanding when and where ethical questions on energy appear, who should be involved in their resolution, and ultimately which solutions must be pursued to achieve a sustainable energy system underpinned by fairness and equity (McCauley et al., 2019). An inclusive energy transition may allow more experimentation in social innovation and foster origination and scale-up of social innovation and entrepreneurship.

Energy transitions may generate geographically uneven social, political, and environmental displacements that may increase the vulnerability of particular social groups or places: a finding of special relevance to the global movement toward low-carbon energy systems. Little consideration of social issues and little stress on 'the person' in the energy transition may lead to injustice. Therefore, theoretical frameworks like energy justice are explored by researchers to be legitimised and applied to energy decisions from the different actors (Jenkins et al., 2020)

The increasing attention to transition literature profoundly influences this research and the transversality of their stronger linkages to establish strands of research on social entrepreneurship (Köhler et al., 2019; Markard et al., 2012). The multilevel perspective in the transition theory ("MLP") (Geels, 2019, 2019) is one of the main anchors of this thesis (see Figures 1-1 and 1-2 below) and provides a new lens for the niche development and incumbent reorientation of the energy corporations (Geels, 2021; Hockerts & Wüstenhagen, 2010; Schot & Geels, 2008; Smith, 2007; Smith & Raven, 2012; Sovacool, Turnheim, et al., 2020; Turnheim & Sovacool, 2020). The following two figures are adopted from the transition literature to illustrate the potential of the niche of social innovation of social entrepreneurship to transform the energy regime. MLP is one of the of the points of departure for this research to position the narrative perspective within the management of the innovation niches (chapter 3) and the transformation of the incumbents through social entrepreneurship in energy corporations (chapter 4). MLP is dominant in

this research process as a point of departure to serves to contextualise the different lines of study.

We focus on social entrepreneurship as an innovative niche, a space for innovation from this perspective. Although niches in the MLP are sector-specific, we are considering them as social innovation areas of non-conformation (Avelino and Rotmans, 2009, page. 545) and potentially deviations of the dominant system (Melucci, 1980). Social enterprises might not be powerful actors, but they might be actors who exercise a different kind of power. In the niche, social enterprises might exercise innovative power and, in the niche-regime interaction they might exercise transformative power (Avelino and Rotmans, 2009). Other transition researchers like Van Tulder (2018) indicate that: "Social enterprises run the risk of remaining niche-players". In chapter 4 we will build on how a niche of social intrapreneurs may form part of the system of large organisations but would need the tolerance and support from the rest of the organisation to obtain resources and to make vulnerable stakeholders become salient stakeholders.

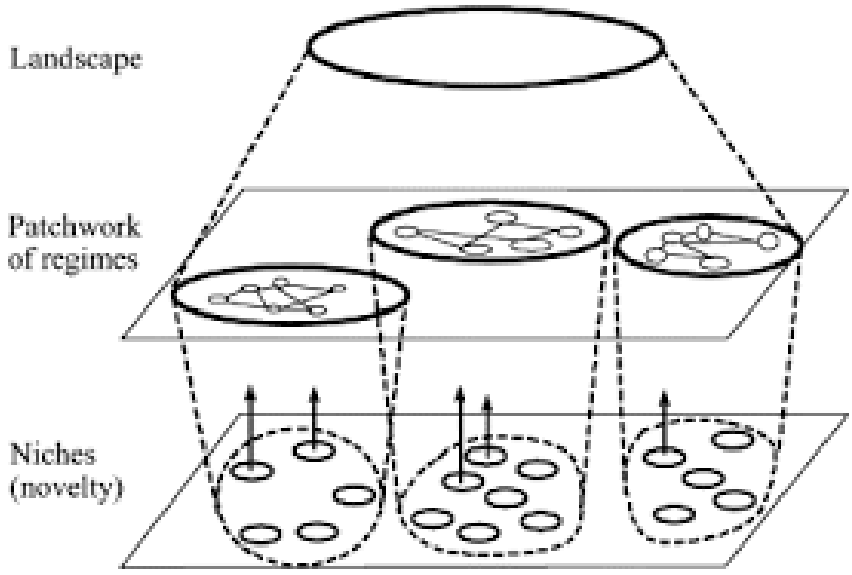

Figure 1-1 A MLP perspective theory to explain the path of the Social Energy Department. Adopted from Geels (2002).

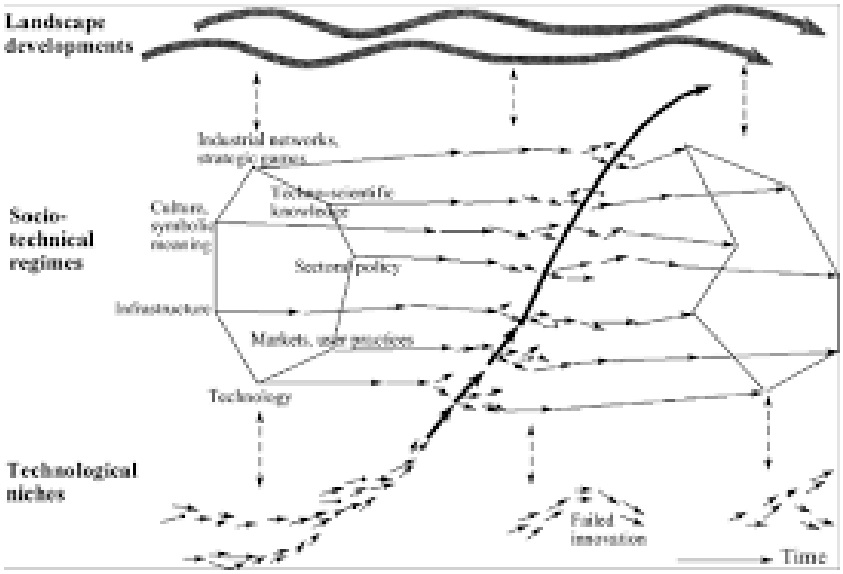

Figure 1-2 A MLP perspective theory. Adopted from Geels (2002).

Transition management literature is not the core of this research. Nevertheless, it is relevant since it provides a broader context to how social entrepreneurship may play a more relevant role in the subsequent phases of the inclusive energy transition. A widespread presence of social business innovation initiatives with a single (or indirect) mission to tackle the social problem of energy-deprived households may be developed in the just transition, allocating a relevant role for social entrepreneurship. To illustrate the contextualisation of the energy transition in the thesis, we state the elements of this research through the thesis statement in Figure 1.3. Thesis statement: social entrepreneurship in energy poverty in the transition context.

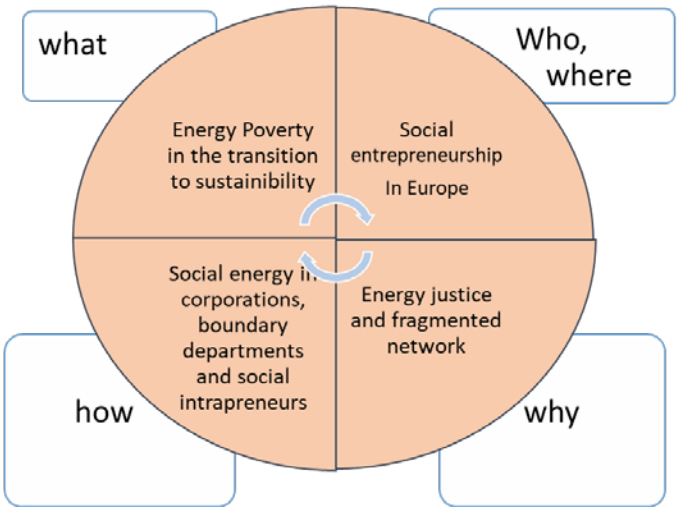

Figure 1-3 Thesis statement

Figure 1-3. illustrates how the just energy transition, which forms part of the *transition to sustainability,* directly affects the contextualisation of this thesis's different elements. The thesis statement indicates the topic formulation and the geographical scope (*energy poverty in the European transition*), focusing on one actor: firstly, through the hybrid and collective narrative of an understudied actor (*social entrepreneurship*). And secondly, through an organisational approach of bridging and boundary departments to implement the change in corporations led by social entrepreneurs *(the Social Energy Department*) duly legitimised by the energy justice framework with the network perspective *(energy justice and network)* to highlight the possibilities for a productive interaction between niche and regime actors.

To facilitate the context of the main definitions of the research, we included the following

Table 1-1 Main Definitions

Terms	Definitions
Energy Justice	Energy justice is a conceptual, analytical, and decision-making framework for understanding when and where ethical questions on energy appear, who should be involved in their resolution, and ultimately which solutions must be pursued to achieve a sustainable energy system underpinned by fairness and equity (McCauley et al., 2019).
Energy poverty	Energy poverty is the difficulty or inability of a household to maintain adequate temperature conditions and other essential energy domestic services at a reasonable price" (Bouzarovski & Petrova, 2015). Also, Day, Walker and Simcock (2016) is a clear illustration of the broad approach: An inability to realise essential capabilities as a direct or indirect result of insufficient access to affordable, reliable, and safe energy services, and taking into account available reasonable alternative means of realising these capabilities. To clarify, the reference to energy poverty is framed in developed countries, particularly in the European region. Energy poverty and fuel poverty are often used interchangeably in the literature when discussing the affordability of adequate energy resources in the context of developed countries. This should not be confused with the term 'energy poverty' when employed in a development context, usually referring to inadequate access to energy.

Energy poverty network	Energy poverty network is a variety of actors, such as governments, regulators, private companies (from small and large businesses to Non-Governmental Organisations (NGOs), or civil society organisations (including consumer associations and social movements) are, consciously or not, forming this energy poverty network (Bouzarovski et al., 2020). The actors that form the network have a common goal: reducing or eradicating energy poverty, but from different perspectives.
Just energy transition	The energy transition refers to a significant structural change in the energy system towards a more sustainable energy system based on efficiency and low-carbon sources (Bridge et al., 2013).
Social movements	Social movements - A collective action by a group of people with a shared or collective identity based on a set of beliefs and opinions that intend to change or maintain some aspect of the social order (Diani, 1992).
Social entrepreneurship	There are different definitions for social entrepreneurship in the literature. The mission of the social entrepreneur as related to disadvantaged groups is not generally disputed (Mair & Martí, 2006) and stricter approaches to the concept of social entrepreneurship require commercial and profitable business models through market-based activities for social purposes and normally face the challenge of managing the balance in the social–profit tensions (Gupta et al., 2020). Social entrepreneurs use networks to obtain resources and legitimacy differently than conventional commercial enterprises (Littlewood & Khan, 2018). We refer to the table of definitions in Dacin et al., 2010. With the energy poverty network perspective, we adopt the definition of social entrepreneurship as an collective experience of social innovation and transformation in the face of the network nature phenomenon that defines energy poverty.
Social enterprises	Social enterprises—defined simply—are organisations seeking business solutions to social problems. (Thompson & Doherty, 2006, p. 362)
Social intrapreneurship	Social entrepreneurship within corporations is called social intra-entrepreneurship, defined as the establishment of initiatives to implement social innovations within organisations of different sizes (Nandan et al., 2015). Social intrapreneurship is an entrepreneurial behaviour exhibited by employees within an organization.

Social innovation	Social innovation includes any new processes, products and services that address social issues to improve the quality of human life. Social entrepreneurship is the establishment of initiatives to implement social innovations, and social intrapreneurship is the application and integration of social innovations within organizations (Nandan et al. 2015). Social innovation is a broad concept and practice that could be implemented through social intrapreneurship or social entrepreneurship.

1.2. Research questions

The questions that underpin this research emerged from the intentional design of the research project and the fieldwork. The research aims and the specific research questions are crystallised over time. For this reason, we pose the following research question 1 (RQ1) "What is the role of social entrepreneurs and companies in the energy poverty network?". This RQ1 is relatively broad, with each subsequent question becoming more specific. Although the research questions have been addressed directly in the project's findings and discussion in a circular approach (Laverty, 2003), they have functioned as framing devices for the results that naturally emerged from the explorative approach to the field.

To address the research questions, several subordinated RQs were formulated and included in Table 1.2 below, outlining the theoretical imperative for asking the question and where they are addressed in the thesis. In each case, the theoretical imperative stemmed from the findings as they emerged from the fieldwork and the gaps in the extant literature. As the academic discussion that responds to the research questions is spread across several publications, it is necessary to indicate where these research questions are addressed.

Table 1-*2* Outline of Research Questions

	Research Question	**Theoretical Imperative**

	What is the role of social entrepreneurs and companies in the energy poverty network?	This thesis wants to examine the role of social entrepreneurship as an intermediary and bridge between different actors in the energy poverty network when tackling energy poverty.
	How are social innovation and entrepreneurship addressed in the literature on energy poverty?	To identify and understand the central debates in the extant research on social entrepreneurship/innovation in energy poverty through the examination of themes, methodologies, foci, theoretical perspectives, and interventions from a multi-actor/network approach, the literature on social entrepreneurship in the emerging energy social science field is remarkably scarce.
	Subquestions RQ2	What perspectives on energy poverty are adopted in the literature regarding social entrepreneurship and innovation? What conceptualisations of social entrepreneurship and innovation are used in the literature to address energy poverty? What types of solutions proposed by social innovation and social entrepreneurship as interventions in energy poverty predominate in the literature? What role is assigned to social entrepreneurship and social innovation in addressing the challenges of the inclusive energy transition? What implications for policymaking in energy poverty emerging from social entrepreneurship and social innovation initiatives? To enrich policymaking by understanding and examining the energy poverty problem with a multi-actor and network perspective on energy poverty.
	How do social entrepreneurs perceive and experience their role in the network derived from their collective and hybrid nature?	To examine narratives of social entrepreneurs in Europe about their experience in trying to provide solutions to energy poverty) To examine the experience of the phenomenon of social entrepreneurship, specifically in its collective dimension, in advancing solutions to energy poverty from a holistic and more integrative approach To provide knowledge from empirical data of the diversity of narratives from social entrepreneurs in energy poverty from the lens of network theories through in-depth interviews with a phenomenological hermeneutical approach.

	Subquestions RQ3	What is the role of each narrative within and towards the energy poverty network? What implications of hybridity nature for the composition of the network member? How does a bridging narrative affect the relationship within the network to scale and connect networks? What implications for policymaking may the different narratives have? Is there any policy instrument that may facilitate the understanding of all voices?
	How and why would the logic of social intrapreneurship within large-scale energy companies respond to the challenges of energy poverty in the framework of a just energy transition?	To develop new insights from theories such as framing in social movements or networks to study the collective dimension of social entrepreneurship as a member of energy poverty networks in developed countries. To focus on the role of social intrapreneurship in energy poverty in energy corporations and provide theoretical insights to stakeholder's theory and organisational management theories in the context of niche and pathways transition theories to shed light on how social entrepreneurship may play a new role as a social intrapreneur within large-scale energy companies through existing organisational structures to respond to the challenges of energy poverty vulnerable communities. This thesis has a clear objective of developing practical and policy implications for some members of the energy poverty network. An empirical and valuable contribution to the social entrepreneurship domain may foster a number of innovative and inclusive solutions in practice for marginalised energy-vulnerable groups in developed countries.
	Subquestions RQ4	What profiles are required to form the department? What framework may legitimise the introduction of new logic? Which organisational forms would fit better for bridging and boundary departments? What are the implications of the social intrapreneurship department about the weak actors (vulnerable communities) and B-Suite of the corporations in positioning the stakeholder's map?

To address the overarching RQ1 that guides the research, a few actions were taken. Firstly, a systematic literature review was conducted to deeply understand the state of the art of how social entrepreneurship and innovation and entrepreneurship are addressed in

the literature on energy poverty (RQ2). The objectives were to identify and understand the central debates in the extant research on social entrepreneurship/innovation in energy poverty through the examination of the themes, methodologies, foci, theoretical perspectives, and interventions from a multi-actor/network approach to this problem from the literature of social entrepreneurship/innovation in energy poverty in the emerging energy social science (Sovacool et al., 2018).

Secondly, understanding the lived experience of the social entrepreneur within the energy poverty network needs more attention (RQ3). Hence, we posed the question to elucidate how social entrepreneurs perceive and experience their role in the network derived from their collective and hybrid nature, examining the narrative of social entrepreneurs in Europe when providing solutions to energy poverty. The objective is to explore the phenomenon of social entrepreneurship in its collective dimension from a holistic and more integrative approach beyond the positivistic limited lens of causes, indicators, and definitions of energy poverty (Grossmann et al., 2021; Middlemiss et al., 2019). This part highlights the theoretical knowledge obtained from empirical data of the narrative from social entrepreneurs through the lens of network theories and social movements through in-depth interviews with a phenomenological hermeneutical approach.

Finally, building on stakeholders' perspectives on corporate social responsibility ("CSR") and strategic entrepreneurship, we formulated the following RQ4 question: How and why would the logic of social intrapreneurship within large-scale energy companies effectively respond to the challenges of energy poverty in the framework of a just energy transition? The final conceptual chapter searches for new insights from theories such as framing in social movements or networks to study the connecting dimension of social entrepreneurship as approaching vulnerable communities, activist voices, and influential mainstream corporations. Some areas intervene in the research, from the type of profiles that would be more adequate, the organisational form of the intrapreneurship department, the framework needed to legitimise the change in logic and the impact of the department on the position of the weak and powerful stakeholders map of business-as-usual energy corporations.

RQ4 addresses the issue of the coordination role of the business not-as-usual of social intrapreneurs within business-as-usual mainstream energy corporations and provides theoretical insights into stakeholder's theory and organisational management theories in

the context of niche management and pathways transition theories (Geels & Schot, 2007; Schot & Geels, 2008). The study sheds light on how social entrepreneurship may play a new role within large-scale energy companies through hybrid profiles and less utilised organisational structures such as boundary departments to respond to the challenges of energy poverty in vulnerable communities. Moreover, this thesis expressly declares its objective of developing practical and policy implications for some members of the energy poverty network. An empirical and valuable contribution to social entrepreneurship may foster several innovative and inclusive solutions for vulnerable energy groups.

1.3. Methodology: an interpretative approach to understand the phenomenon of social entrepreneurship in energy poverty

This section includes a general explanation of methodology and epistemology in the context of this research and justify why they are the most appropriate approaches to this work to address the role of social entrepreneurship in the complexity of the energy poverty problem. After explaining the epistemological approach followed, we provide the context that justifies why we used such epistemology and the hermeneutic phenomenology methodology approach. We will provide details on the methodology and procedures utilized to explain and justify why they are appropriate in the corresponding chapter 3 to address the research problem.

Interpretative research methods permit researchers to understand phenomena that require interpretation. The informants' values, beliefs, and feelings draw from the presupposition that we live in a social world with multiple interpretations (Creswell and Poth, 2016). For interpretivists, the study of human society must go beyond empirical and supposedly objective evidence to include subjective views, opinions, emotions, and values. what can't be directly observed and counted require interpretation.

Before addressing the methodology, one must place oneself in an epistemological paradigm: the interpretative method from a hermeneutic phenomenological approach. What is proposed here is located in an interpretivist epistemological paradigm in which philosophical assumptions are guiding the research. Interpretive research inferences result from the analysis and interpretations of researchers to generate conclusions, insights, and meanings through their representations of the reality described by the data (Spiggle 1994:

492). The interpretive approach to research does not readily facilitate the statement of generalizations outside the context of the study, and the method does facilitate generalization within the context or case (Hudson and Ozanne, 1988). Reality is not fragmented but understood holistically. Interpretivism views the world as being so complex and changing that it is impossible to distinguish a cause from an effect. Viewing the world holistically, the interpretivism stance is that mutual, simultaneous shaping occurs between entities (Lincoln and Guba 1985). Our research is always guided by some of these philosophical considerations, intending to hear the plurality of voices simultaneously oriented towards the objective of tackling energy poverty, a complex social problem in which, by definition, causality predictions are not always valid (Sardar, 2010; Rittel and Webber, 1973)

For interpretivists, the primary goal is understanding, not predicting. Understanding is a process and not an end product. This research is dynamic and in circles, and it is not closed. Understanding involves (1) gaining "an appreciation of the innumerable mutual shapings that are synchronously ongoing and abstracting from that complexity a subsystem that serves the investigator's needs" (Lincoln and Guba, 1985, p. 152), and (2) developing "an idiographic body of knowledge in the form of 'working hypotheses' that describe the individual case" (Lincoln and Guba, 1985, p. 38). Lincoln and Guba's interpretation reveals an inconsistency between their assumptions and evaluative criteria and assume that individuals' and groups' perceptions determine reality. With this assumption, no one reality can be captured in an unbiased/neutral way. Furthermore, the researcher's expectations may influence the construction and interpretation of these realities. As indicated by Braun and Clarke (2006) the development of the themes themselves involves interpretative work, and the produced analysis is not just a description but theorized in a constructionist paradigm.

This study fits with an interpretive epistemology from which a thematic analysis of the data that supports a rich and comprehensive analysis through pattern-based organisation and description (Riessman, 1993; Braun and Clarke, 2006). A theme captures something important about the data concerning the research question and represents some level of patterned response or meaning within the data set. For this study, themes and patterns of meaning were identified and analysed within the context of the research topic and shaped by the researcher's standpoint, experiences, and epistemology (Braun and Clarke, 2013;

Clandinin, 2016). The determination of the theme is flexible, and it allows to determine themes (and prevalence) in several ways.

Such flexibility derives from the interpretive assumption that denies that one real-world exists since reality is mental and perceived. Individuals create devices, such as theories and categories to help them make sense of their worlds (Burrell and Morgan, 1979). Reality is also socially, and multiple realities exist because of different individual and group perspectives, coherent with the study of this research's collective and network theories. This approach views individuals' realities holistically. We highlight that it is not the intention of qualitative research to allow the findings to be generalised, and therefore, it is not a limitation itself.

The multiplicity of interpretations involved in complex social problems as energy poverty, demands complex and holistic pictures of the problem under study. Researchers are then not tight by the cause-and-effect relationship among factors, but by identifying complex interactions of factors in any situation. Interpretive analysis often focuses on tensions and the perception of experiences (Middlemiss & Gillard, 2015). It utilises other lenses to understand and reveal beyond explaining or demonstrating the phenomenon of study through alternative readings (Smith and Heshusius, 1986).

Qualitative research involves close attention to situating the thesis within the political, social and cultural context of the participants and readers. It requires a certain commitment of the researcher with the object of study (in a simplified approach, the network lens to the energy poverty problem from the perspective of the social entrepreneur), including time and ethics (Creswell and Poth, 2017). The relevance of context is developed by interpreting narratives of social entrepreneurs/innovators in chapter 3. We emphasize that context is critical in interpretative epistemology because social beings construct reality and give it meaning based on context. Our study is limited to evidence from the European context. To illustrate this, consumers would view information differently in a retail store or laboratory setting. Furthermore, these interdependent systems must be viewed holistically. If the systems are separated and fragmented, their meanings change (Hudson and Ozanne, 1988). Thus, the individual who is studied, the social entrepreneur, becomes a participant in the research, guiding the research and supplying information. Interpretivism believes that scholars are members of the social reality, not privileged (Giddens 1976; Lincoln and Guba 1985).

In energy research, interdisciplinary research between social and natural sciences is a trend as well as engineering implementation supported by scientific data is crucial. Consequently, there are more calls for future research including qualitative methods for human-centred approaches (McCauley et al., 2019). The energy poverty network will entail an act of re-reading a complex narrative. In an interdisciplinary field such as energy poverty, the act of re-reading complex narrations shows ambivalence and the interpretation may be more adequate than cause-effect in interdisciplinarity, where researchers identify complex interactions of factors in any situation (Creswell and Poth, 2016). In the positivist method, one of the assumptions is that there are no previous gaps in the knowledge, but in interdisciplinary studies, there are multiple gaps of knowledge. That is why it is, generally, the only possible method in interdisciplinary studies.

Though the process, a reflection on my personal experience is continuously revealed. Although it is impossible to see the world through other eyes, I consciously try to bracket my personal beliefs and views through a reflexive stance to bring awareness of them. Many perspectives are of interest in such an enterprise because I am interested in describing multiple realities and do not believe a single reality exists (Hudson and Ozzane, 1988). How to bracket if our beliefs constantly change? Our beliefs are confirmed, dismissed, enforced, or discredited by ideas, experiences, relationships, and introspection. They demand reformulation and adaptation to new life situations. The process of recalibrating beliefs involves impressions, emotions, cultural and social circumstances, or personal commitments. In other words, believing is a subjective experience analogously to "qualia" (the subjective and conscious experiences, such as the sensation of cold or heat). As such, the believing process is simultaneously cognitive and emotional.

I like the reflection of Giddens (1976) suggesting reforming existing welfare systems through "the active mobilization of life decisions rather than the passive calculation of risk". Also, I found very powerful his conviction that the "enormous expansion of the scope for reflexivity — the growing need for everyone to take specific decisions on many different aspects of daily life — creates a new politics of "life decisions". Too many sources in my experience (law, renewable energy, companies, entrepreneurship, finance, international, access to energy, development, transition, …)

I have worked closely with energy for many years, and my personal experience in business development and financing of renewable energy industry projects has prompted

this research. My close understanding and living of the phenomenon of big corporations and their potential and influence to deal with several problems took me to energy poverty. This research complements an earlier study with no academic approaches but has shown a revolutionary rigorous methodology to approach vulnerability, which is a far object from the corporations.

In each chapter 2, 3, and 4 of the thesis, there is a specific section devoted to explain the method. In the empirical work of chapter 3, the method is described including, but not limited to, the phenomenological analysis approach, the ethics approval, choice of participants, mode of recruitment, and method of data collection (e.g. Semi-structured interviews) followed by the research findings, which will be the main body of the report or paper and a discussion around the participant's quotes including the limitations of the research and the implications that the research has for practice. Also, a specific section on the relationships between the researcher and participants should be included when giving an account of the methodological procedures. Chapter 3 will provide a methods sections used within the interpretivist epistemology and qualitative methodologies.

1.4. Thesis Structure: discovering connections between an unexplored actor with the potential role to bridge the energy poverty network

Social entrepreneurs and networks are understudied in the field of energy poverty. One challenge of the just energy transition is the inclusion of vulnerable energy households. Despite the issue’s importance, social entrepreneurship has partially focused on energy poverty intervention, has done so in isolation, and with few visible success stories in the fight against energy poverty. The lack of studies on social entrepreneurship in energy poverty justifies the attention of the systematic literature review (Chapter 2) to the intersection of social entrepreneurship in energy poverty (Boerenfijn et al., 2018; Hiteva & Sovacool, 2017; Loorbach et al., 2010; Loorbach & Rotmans, 2010; Lupi et al., 2021; Martiskainen et al., 2018).

This section refers to the expected results of this thesis through the phenomenon of social entrepreneurship and its potential role of connecting actors in the network through their direct experience in the field and within large energy corporations. The under-researched area of this unexplored actor poses the need to understand the experience of

social entrepreneurship within the energy poverty network due to its hybrid condition (Bale et al., 2013; Bauwens et al., 2020; Dufays & Huybrechts, 2012; Gupta et al., 2020). The narrative of the social entrepreneur toward the energy poverty network is subject to analysis (Chapter 3). Finally, we emphasise the need for coordination and intermediary capabilities of social intrapreneurs (Smith, 2007) in another scenario: the energy corporation. One of the pathways in transition studies underscores those radical grassroots innovations with the highest transformation potential that will only lead to sustainability transition if they appeal to mainstream actors (Geels, 2021; Turnheim & Sovacool, 2020). Intermediation capabilities of social intrapreneurship extend further in the concepts of stakeholders' theory context discussed in the previous chapters by examining how a particular organisational innovation, a social intrapreneurship department, is shaped in an energy corporation. It mainly looks at how the influence of stakeholders is discussed through the application of stakeholder salience and legitimacy (Mitchell et al., 1997; Parmar et al., 2010). The model theoretically implements and explores the alignment through the intermediation of social entrepreneurs when connecting vulnerable energy communities and the traditional business-as-usual to transform the stakeholders' map of energy corporations potentially. Chapter 4 examines how innovation in social intrapreneurship happens regarding actors and action interfacing with institutionally constructed social contexts. In this way, it concerns a fundamental aspect of social entrepreneurship that receives too little attention in the literature. Moreover, it begins to form a theoretical basis for the process through which social enterprises can become relevant actors in the energy poverty network. Figure 1.4. states the thesis structure, two publications, and mapping of the outputs of the research project). The core of the thesis is the role of bridging networks by the unexplored actor of social entrepreneurship in energy poverty.

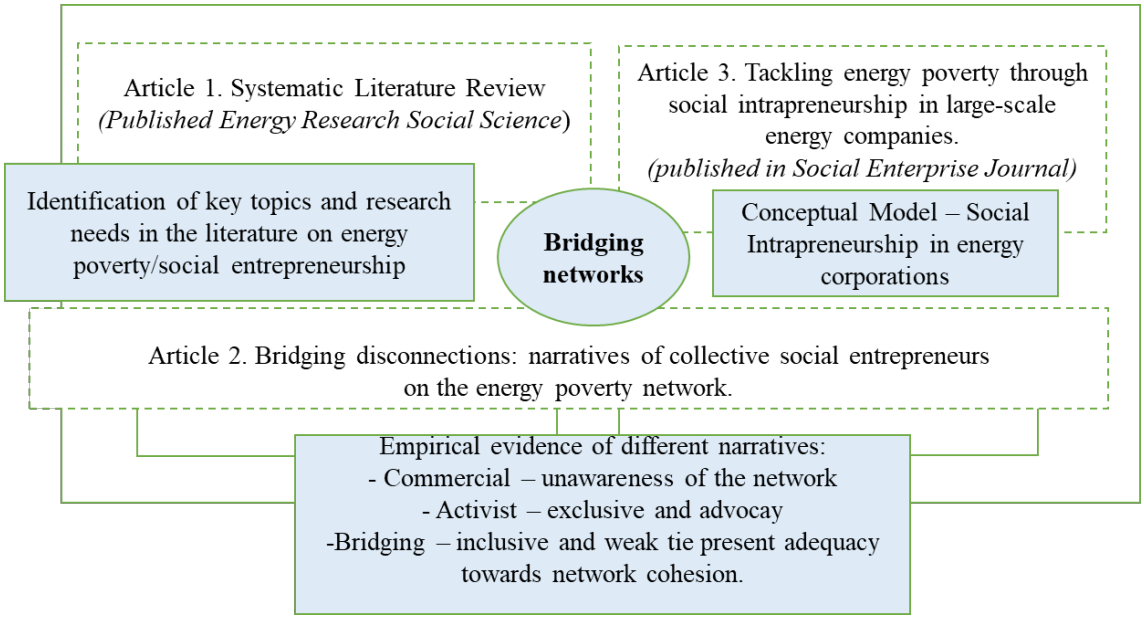

Figure 1-4 Thesis structure, publications, and mapping of the outputs of the research project

Each chapter has a meaning for the work as a whole. The purpose of the following Figure 1-4 is to help enrich the integration of the chapters with each article's role in the thesis as a whole and mark the main elements of each of the chapters reflected in the thesis. The context and theoretical grounds are identified in the systematic literature review and developed in two foci connected by the intermediary hybridity features of social entrepreneurship in the narrative levels within the energy poverty network and in the corporation's space to bridge the idea of social intrapreneurs to reorient the mainstream to minimising energy poverty. Notwithstanding this, the referred classification of contributions of each publication (Chapter 5) to the whole is not trying to be unique or exhaustive and to guide the readers. Each piece itself has its background, its analysis, its method, and its contribution. Each one contributes in a way because each response to an objective fulfils a function in each part of the thesis.

This thesis's core theoretical background, research methodology, findings, and discussion are spread across three articles. Figure 1-4. outlines how these publications contribute to the whole of the thesis and how they collectively provide these essential elements. Each piece is the primary component of a chapter corresponding to a publication, and each is accompanied by an introduction to ensure linear coherence. When tackling the problem, the research thread is guided by the connection function of social entrepreneurship in the energy poverty network. From this departure point, we examine the literature on the intersection of energy poverty and social entrepreneurship, highlighting

the main topics that will guide the research: the energy capabilities framework, the need for hybridity and the network perspective. Then we theorise by examining the narrative of social entrepreneurs perceiving the network phenomenon of social entrepreneurship in energy poverty to unravel the bridging role of social entrepreneurship. Finally, there is a zoom to a particular interaction, which allows transcending the logic of confrontation and conflict to propose spaces of collaborative exchange, from the breaking of boundaries, and without losing sight of the hybrid and collective dimension of social enterprise through the size of social intrapreneurship within a boundary department in energy corporations

Section 1.3. is dedicated to the overview of the relationships between the parts of the thesis and a brief introduction of their objectives and contributions to the whole. The relationship between the three elements is captured through the essence of each and, above all, how they are linked. The conducting thread is a logical, linear connection that begins with a literature review to identify critical issues and research needs.

1.4.1. Envisioning: Connecting dots from two separate bodies of literature: social entrepreneurship and energy poverty.

Core lines of thought within energy poverty research that could offer important insights into multi-actor approaches to energy poverty have been left largely unexplored. Little attention has been given to the social entrepreneur's insights into energy poverty. This section outlines the thesis's central concern with social entrepreneurship in energy poverty and sets the context for the research topics identified and addressed through its pages. Significant literature has examined issues of energy poverty, with critical interventions using concepts of energy vulnerability, precarity, and capabilities highlighting the development of the capabilities-based approach to understanding energy deprivation (Day et al., 2016; Kalt et al., 2019; Middlemiss et al., 2019). This work facilitates an understanding of energy poverty as a multifaceted phenomenon while also focusing on energy services and the connections between energy and human needs. As an approach to energy poverty, it has essential appeal due to (for) the potential it holds to engage with the complexities of lived experiences and the manifold intersections that shape them.

Moreover, an equally large body of work has examined social entrepreneurship by focusing on the importance of social capital and networks (Gupta et al., 2020; Mair &

Martí, 2006). Though these two significant works of literature occasionally intersect, they have rarely been brought into direct conversation with one another

The research starts with a systematic review of the literature that explores the most relevant publications on the intersection between energy poverty and social entrepreneurship in developed countries to identify the main issues addressed and the barriers and drivers to be activated by social entrepreneurs. Efforts to tackle the complexity of energy poverty by different actors appear insufficient (Waddock et al., 2015). The intersection of domains from other disciplines is increasingly relevant in energy social science (Sovacool, 2014, 2016; Sovacool & Geels, 2016). Social entrepreneurs have the mission to solve social problems and might be attractive actors to be examined as a potential space to address energy poverty (Gupta et al., 2020).

Social entrepreneurship and innovation provide productive space for building on energy vulnerability responses in a multi-act non-exclusive approach (Geels, 2002, 2014, 2021; Hörisch, 2015; Wigren-Kristofersen et al., 2019). This is an example of how energy social science needs more research on interdisciplinary themes to connect more holistic and comprehensive discussions (Sovacool, 2014) through connecting energy poverty and social innovation scholars. When looking at those two areas, the literature reveals the need for collective and hybrid approaches, among other topics. The results show the potential of social entrepreneurship to provide value to structured interventions in energy poverty due to the identification of theoretical perspectives of energy poverty from holistic approaches, such as energy justice or energy capabilities frameworks, and the roles and characteristics of social entrepreneurship in the network of energy services to intermediate in networks and provide innovative solutions offered by interventions in energy poverty. Terms such as community, community innovation, and collective action are included and result in a unified framework that facilitates a more cohesive body of research (Nordstrom & Jennings, 2015; Peredo & Chrisman, 2006). Furthermore, such a collective approach overruns the demystified individualistic image of the entrepreneur (Dey & Steyaert, 2018).

The state-of-the-art also emphasises several insights for bottom-up policymaking in energy poverty from social entrepreneurship and innovation initiatives. Finally, the outcomes of the review state new lines of research placed within the intersection of the three domains in the energy social science. Both theoretical and practical implications may be derived from each line to help policymakers be better informed through bottom-up

interventions from social entrepreneurs and design more integrated and adequate policies in energy poverty (Middlemiss & Gillard, 2015).

Therefore, in the literature review, we identify appealing issues underscoring the need for holism and a collective perspective that focuses on the experiences of hybrid social entrepreneurs in the network of the collaborative social entrepreneur.

1.4.2. Relating: Understanding the narrative of social entrepreneurship for self-awareness and bridging energy poverty network

Chapter 3 studies the implications of the hybridity of social entrepreneurship in the narrative through the perspective of the network. Fundamentally, this research aims to respond to critical issues highlighted in the literature review of Chapter 2, underscoring the social entrepreneurs' capabilities as suitable vehicles in the network. The collective and network dimension of the social entrepreneur is evidenced (Burress & Cook, 2010; Elia & Margherita, 2018; Mato-Santiso & Rey-García, 2019; Mitzinneck & Besharov, 2019; Montgomery et al., 2012; Nordstrom & Jennings, 2015, Bauwens et al., 2020; Huybrechts & Haugh, 2018; Kerr et al., 2018). Despite the need for integrative and multilevel solutions, the role of small social entrepreneurs has received very little scholarly attention to date.

In this qualitative analysis of the discourse of the collective social entrepreneurs at a micro level, a study is carried out through in-depth interviews to identify the central narrative of the phenomenon of social entrepreneurship in energy poverty. We discover three patterns of narratives that depend on the priority of the social aspects provided by the entrepreneur and analyse their differences, similarities, and interrelationships with the network and the rest of the actors. The starting point is that the emerging network of energy poverty is fragmented, which invites responses from hybrid organisations, such as social enterprises (Littlewood & Khan, 2018).

There is a growing interest in social innovation and social entrepreneurship (Hiteva & Sovacool, 2017; Naintoan et al., 2015; Pitt & Nolden, 2020; Silvestre & Ţîrcă, 2019) within the energy social sciences to provide partial solutions to address energy poverty (Bouzarovski et al., 2020; Butler & Sherriff, 2017; Creutzfeldt et al., 2020; Middlemiss & Gillard, 2015; Sovacool et l., 2017, 2019). Drawing inductively from empirically qualitative data, this work intends to provide theoretical insights on the role of entrepreneurship and social innovation in the European energy poverty network. Social

enterprise as an institution, with the diversity of forms and specific purposes it can take, has a hybrid nature integrating multiple logics (Gupta et al., 2020; Mair & Martí, 2006; Short et al., 2009), making it a potentially productive space for building responses to energy vulnerability from the necessary diversity of perspectives that the complexity of the problem requires.

We intend to understand the diversity of social entrepreneurs' narratives on the energy poverty network from a phenomenological approach to enrich the understanding of the mechanisms at play in a such network (Czarniawska, 2004; Kerr et al., 2018; Laverty, 2003; Smith & Osborn, 2015). We collect their lived experiences and analyse the meanings attributed to these experiences within the network.

This research could favour understanding the phenomenon of social entrepreneurship in energy poverty and the relations with the rest of the actors involved in the network contributing to its cohesion with a more integrative and holistic approach to energy poverty. In particular, the development of network cohesion may enrich the policymaking process and policy implementation outcomes (Bouzarovski et al., 2020; Guyet, 2018; Webb, 2015).

1.4.3. Debating: Social intrapreneurship bridging the corporation´s network to approach vulnerable communities

Chapter 4 focuses on social entrepreneurship as a temporary intermediator of organisational changes in large energy corporations bridging vulnerable communities and B-suite and connecting social logic with traditional profit logic. Through the organisational form of a boundary department, the objective of the process is to strengthen the position of energy-vulnerable communities on the companies' stakeholders' map. The last article was the first to be published, but its contribution connects with the final part corresponding to the circular interpretive approach of this thesis.

Following the study of small social entrepreneurs, their relationship with the rest of the actors and their potential as intermediaries within the fragmented energy network (Bouzarovski et al., 2020; Smith, 2007; Webb, 2015). The study of the different private initiatives to combat energy poverty through the small and large companies are not exclusive territories within the network of social actors fighting against energy poverty. We look at how a specific interaction transcends the conflict logic to propose an alternative

collaborative space led by an emerging actor: the social intrapreneur within large-scale energy corporations.

We also try to clarify the interconnection among social entrepreneurship, social intrapreneurship, and social innovation. Social innovation includes any new processes, products and services that address social issues to improve the quality of human life. Social entrepreneurship is the establishment of initiatives to implement social innovations, and social intrapreneurship is the application and integration of social innovations within organizations (Nandan et al., 2015). Social innovation is a broad concept and practice that could be implemented through social intrapreneurship or social entrepreneurship. Social intrapreneurship is an entrepreneurial behaviour exhibited by employees within an organization. Since we decided to stick to social entrepreneurship, we opted to reduce the reference to the literature on social innovation despite its connection with the literature on social entrepreneurship and social intrapreneurship, focusing mainly on those two. Looking at social entrepreneurship, we consider that the social entrepreneur's mission related to disadvantaged groups is not generally subject to dispute (Mair & Martí, 2006). Social innovation moves beyond the limitations of studying prevailing energy poverty indicators and provides coherence and inspiration to foster multi-actor participation in the network (Nandan et al., 2015; Smith, 2007). Social entrepreneurship may be a vehicle to introduce and spread social innovation into corporations. These intermediation capabilities can be part of the role of social entrepreneurship within the corporate network. Beyond conflict and struggle, it can be understood in terms of cooperation and joint work. The social enterprise department would be the intermediary between the corporation and the vulnerable communities.

By drawing on the literature on social intrapreneurship and stakeholder theory (Parmar et al., 2010) and delving into the business actors of the network, the dominant assumption indicates that social entrepreneurship and corporations are spaces in contradiction and separation. This challenge to connect both spaces is addressed in the conceptual proposal of Chapter 4. From the network perspective, the social entrepreneur's potential as a coordinator proposes the innovative objective of the fight against energy poverty to large-scale energy companies. Something that seems contradictory may imply an organisational change that will lead in the long term to a shift from a logic of economic profit to hybridisation with social aspects and outreach to vulnerable communities through

debt-bearing figures prepared to lead this interaction by their hybrid technical and social nature.

This article examines a related interdisciplinary background in social entrepreneurship and intrapreneurship (Halme et al., 2012; Kistruck & Beamish, 2010; Nandan et al., 2015), organisational change (Waddock et al., 2015; Weick & Quinn, 1999) and singular structures (Aldrich & Herker, 1977; Berkes, 2009; Leifer & Delbecq, 1978), and stakeholder theory (Burga & Rezania, 2016; Mitchell et al., 1997; Parmar et al., 2010; Weber & Marley, 2012), we provide a conceptual proposal for an organisational structure.

The search for more guidance and formality in productive interactions between conflicting logics of agents of different natures, such as activists, vulnerable communities, and B-Suite departments of giant energy corporations, is undertaken in this third part of the thesis. The current institutionalised designs in energy corporations deal peripherally with vulnerable customer communities but fail to tap into their high potential to alleviate energy poverty. They are adding to the already advanced critique of the underperformance and deviation of social corporate responsibility departments (Banerjee, 2008; Parmar et al., 2010). With the mission of solving social problems, the logic of social entrepreneurship could create a potential space in the incumbents for them to tackle energy poverty directly. This conceptual article intends to respond to this need by proposing a conceptual process model for structured organisational change to implement multi-actor collaboration (van Zanten & van Tulder, 2018) through integrating social intrapreneurship departments (Nandan et al., 2015) within energy companies to minimise the energy poverty. The current structures within corporations, such as corporate foundations or other non-single mission departments, have minimal impact on minimising energy poverty. To date, vulnerable energy consumers are the last and weakest stakeholders in the corporation.

Social entrepreneurship is an innovative hybrid connection space dominated by relatively few entities with a hybrid nature and a large capacity for leveraging resources within the network (Dacin et al., 2011; Mato-Santiso & Rey-García, 2019; Montgomery et al., 2012). As this is an innovation niche, there is a risk that it may disappear, although it could survive if such a niche reaches the necessary degree of maturity (Hillman et al., 2018; Schot & Geels, 2008). Due to their limited power and resources, few collective social entrepreneurs have become large enough to strongly influence government and policymakers (Campos & Marín-González, 2020; Hess, 2018; Lupi et al., 2021;

Montgomery et al., 2012; Nordstrom & Jennings, 2015). Their agency in just energy transitions still requires construct clarity and legitimacy (Suddaby, 2010; Suddaby et al., 2017).

A more significant change is needed for energy companies to move toward the diffusion and implementation in practice of the principles of energy justice (Jenkins et al., 2020; Jenkins et al., 2018, 2020; van Zanten & van Tulder, 2018; Waddock et al., 2015). Large companies are increasingly recognised as market/technology/value innovators, although little research focuses on their high potential as social innovators (Barnett, 2019). Perceived as resistant to change, incumbent energy companies could become proactive agents since their power is highly influential (Turnheim & Sovacool, 2020) and re-orients the energy transition (Geels, 2021). Society closely watches energy corporations because the power supply is essential in developing and developed countries (Jenkins & Pérez-Arriaga, 2017). The resources of large-scale companies could support experimentation with social intrapreneurship models despite these companies' traditional, resistant position regarding radical changes (Jenkins et al., 2020; Wesseling et al., 2020).

In transitions, disruptive change occurs as an outcome of the various multilevel relationships existing in a specific context, where conflict exists between the dominant entity (actors, structures, and practices) and the new emerging alternatives (Araújo, 2014; Geels & Schot, 2007; Hockerts & Wüstenhagen, 2010; Köhler et al., 2019; Schot & Geels, 2008). There has been very little research on these two levels of the agency of small and large company actors in transitions (Hiteva & Sovacool, 2017; Hörisch, 2015). i.e. firstly, on the level of the emerging niche of social intrapreneurs as innovators in energy poverty and secondly, on the story of the existing large-scale energy companies (energy companies). The unique position of these companies as influential actors could transform large energy companies to help alleviate poverty (Halme et al., 2012; Turnheim & Sovacool, 2020).

The current structures within corporations, such as corporate foundations or other non-single mission departments such as CSR departments, have minimal effects on minimising energy poverty. To date, vulnerable energy consumers continue to be the weakest stakeholders in corporations. We intend to respond to this need by proposing a conceptual process model for structured organisational change to implement multi-actor collaboration (van Zanten & van Tulder, 2018) through integrating social intrapreneurship

departments within energy companies to minimise energy poverty. Specifically, we illustrate the proposal by introducing a new department in the organisational structure of an energy company that would deal directly with vulnerable customers, the Social Energy Department. The specific details of the business model would be designed on a case-by-case basis and are not addressed in this thesis. Introducing a new logic does not mean substitution. Instead, it involves more complementary actions through the increase of formal interaction and adaptation between actors on a gradual path towards reorientation and transformation (Geels, 2021).

Therefore, our thesis illustrates a method that builds and includes a novel organisational unit through departments formed by social intrapreneurs in incumbent energy companies united to tackle energy poverty. The objective is to defend a model for large-scale companies to adapt to just energy transitions with an organisational change led by a vision to impact the stakeholders' map and protect the fundamental energy rights linked to the core of the business. This proposal could help assign vulnerable clients to a department driven by an aspiration to reduce energy poverty. This organisational change could lead to a more stakeholder-oriented approach to CSR, accelerating the just energy transition.

The following three chapters will present the three articles conforming the thesis. They will be followed by a discussion and conclusion on the connecting role of social entrepreneurship in the energy poverty network.

2. Business As Not Usual: A systematic literature review of social entrepreneurship, social innovation, and energy poverty to accelerate the just energy transition

2.1. Abstract

Energy poverty still affects 37.4 million people in Europe. Due to the COVID-19 crisis, this number may increase significantly. However, efforts to tackle this complex problem have thus far proved insufficient. The intersection of domains from different disciplines is increasingly relevant within energy social science. Social entrepreneurship has a mission to alleviate social problems. Thus, the role of social entrepreneurship and social innovation in tackling energy poverty, although still an emerging area of research, is receiving increasing attention. To contribute to assessing the state of the research on this topic, a systematic literature review was developed on the intersection between energy poverty, social innovation, and social entrepreneurship in countries in the Global North. The results of the review show the central dimensions of social entrepreneurship and social innovation outlined by researchers, such as the collective and network nature of social entrepreneurship, hybrid skills, proximity, involvement of households, and a user-centred approach, shedding light on the primary potentialities of interventions in energy poverty driven by the social entrepreneurship phenomenon. Such findings may help social entrepreneurs, innovators, and policymakers recognise possibilities and challenges in the field. Based on the outcomes of this review, potential new avenues for research within the intersection of the three domains are identified.

2.2. Introduction

The pathways towards low-carbon energy transition are faced with the challenge of including energy vulnerable households, which is an issue of growing interest in the Europe pandemic could affect a more significant number of vulnerable people, thus increasing energy poverty (Sovacool, del Rio, et al., 2020). Some progress has been made towards

tackling the problem, but it remains a pressing challenge that requires attention to the wide variety of causes and perspectives involved, as well as the efforts of a wide range of actors.

Energy poverty has been predominantly attributed to the triad of insufficient income, high energy prices, and energy inefficiency (Bouzarovski, 2018). However, other approaches see this delimitation as partial since it ignores factors of a different nature, such as information asymmetries, energy efficiency strategies or more human-centred approaches (Boni et al., 2016; Bouzarovski & Petrova, 2015). Multiple actors form the energy poverty network, including governments, regulators, private companies, civil society, and public-private agreements (Bouzarovski et al., 2020). However, research has dominantly focused on the role of public agents, while more attention needs to be paid to business actors as social innovators tackling energy poverty (Bouzarovski & Simcock, 2017). Moreover, energy poverty can be characterized as a *wicked* problem given its complex, systemic, multidimensional, and frequently invisible nature, which requires the coordinated participation of multiple interrelated actors (Elia & Margherita, 2018). Therefore, hybrid approaches that bridge disciplines and domains are particularly appropriate to address energy poverty issues (Sovacool et al., 2019). Social entrepreneurship provides a clear illustration of hybrid organisation that encompasses a social mission together with skills and solutions traditionally based on market logic (Bauwens et al., 2020). Social entrepreneurship is a loosely defined construct, but a mission related to solving social problems or creating social value is widely accepted as a central feature (Saebi et al., 2019). Moreover, social entrepreneurship is often associated with social innovation since social entrepreneurs search for innovative solutions to meet social needs.

The dominance of partial approaches to complex problems calls for the need to adopt multi-actor approaches to energy poverty (Power, 2018, Sovacool, 2014). In an attempt to respond to this call, we examine how the literature on energy poverty addresses the role of social innovation and social entrepreneurship in tackling energy poverty. The interest in the social innovation and entrepreneurship phenomenon to tackle energy poverty within the field of energy social science is of emerging relevance (Martiskainen et al., 2018). Social entrepreneurship is acknowledged to be a productive space for building effective responses to the problem of energy vulnerability due to its collaborative and hybrid nature (Montgomery et al., 2012), as well as its capabilities for leveraging resources

through the energy poverty social network (Dacin et al., 2011). Potential contributions of social entrepreneurship to energy poverty might increase the number of innovative solutions for marginalised groups in the context of the inclusive energy transition from the lenses of energy justice (Jenkins et al., 2018; Okhuysen and Bonardi, 2011).

Since there are a great variety of examples of social innovation relevant to energy poverty, from the examples of Ashoka, discussed further below, to the Alliance against energy poverty in Barcelona (Moulaert, 2019), we examine the role of social innovation and social entrepreneurship in tackling energy poverty. For that purpose, we carry out a systematic literature review on the intersection between social entrepreneurship, social innovation, and energy poverty. This intersection may be a productive space to question conventional management practices that will allow us to change the lens through which we look at the problem (Okhuysen & Bonardi, 2011; Webster & Watson, 2002). Moreover, limited research has addressed the issue from interdisciplinary lenses, and there is a particular lack of systematic literature reviews in the field of energy social science (Sovacool et al., 2018).

Research addressing the role of social enterprise in energy poverty is only emerging (Hiteva & Sovacool, 2017), despite the widespread presence of the social business and social innovation initiatives with a mission to tackle energy poverty. In this regard, we note the impact of the program of Ashoka and the Schneider Electric Foundation to support social innovations in energy poverty in Europe. This three-year program varied the geographic scope in each iteration (Western, eastern, and central European countries). Thee projects were selected upon their maturity, impact, and commitment to their networks (Ashoka and Schneider Electric Foundation, 2019; Desroches et al., 2015). Although energy poverty is a global problem (Day et al., 2016; Osunmuyiwa & Ahlborg, 2019), it is also situational and varies along with the geographical context (Bouzarovski & Petrova, 2015). In the global North, the number of energy vulnerable people is increasing despite the growing number of interventions from both the private and the third sectors (Kyprianou et al., 2019). Research contributions on social entrepreneurship for energy poverty are still scant. This is specifically the case concerning poverty in the countries of the Global North (Bouzarovski & Petrova, 2015). In response to this call, our systematic literature review is focused on these countries (Sovacool et al., 2019).

In sum, this review intends to address the following research question: How social innovation and social entrepreneurship are addressed in the literature on energy poverty?

More specifically, this review responds to the following five research sub-questions:

a) What perspectives on energy poverty are adopted in the literature in relation to social entrepreneurship and social innovation?
b) What conceptualisations of social entrepreneurship and social innovation are used in the literature as addressing energy poverty?
c) What types of solutions proposed by social innovation and social entrepreneurship as interventions in energy poverty predominate in the literature?
d) What role is assigned to social entrepreneurship and social innovation in addressing the challenges of the inclusive energy transition?
e) What are the implications for policy making in energy poverty emerging from social entrepreneurship and social innovation initiatives?

The remainder of the paper is structured as follows. Section 2 presents the background of interdisciplinary literature defining the key terms and suggesting potential for research in energy poverty and social entrepreneurship. Section 3 describes the methodology of the systematic literature review and the procedures followed. The results section (Section 4) identifies the main approaches adopted at the intersection through a comprehensive review of themes, methods, and topics (Webster & Watson, 2002). In Section 5, we discuss our findings, pointing out some barriers and challenges for social entrepreneurs in energy poverty. In Section 6, the conclusions and research agenda are established.

2.3. Background

Boardman (1991) identified and made the energy poverty problem visible, considering political scepticism at the time. Although she was interested in an inter-disciplinary approach (policy, technology, economics, sociology), she provided the first definition in the UK in 1991, limiting the concept of energy poverty to cover households whose fuel expenditure on energy services exceeded 10% of their income. Since then, the UK has been at the head of energy poverty research, which has been progressively extended to many other countries in the Global North to account for local differences, such as the demand for

cooling in Southern Europe (Bouzarovski & Petrova, 2015). Other approaches broaden the notion to include different dimensions of energy poverty, such as a 'low income/high costs' definition, in which households would need to have both a low income and high energy costs to be classed as fuel poor (Hills, 2011) or as a key determinant of health among the low-income population (Bosch et al., 2019). Most encompassing definitions refer to the absence of sufficient choice in accessing energy services to support economic and human development including multiple perspectives, more aligned with the complexities/multidimensionality involved in energy poverty (Dey & Steyaert, 2010; González-Eguino, 2015). The definition by Day, Walker and Simcock (2016) is a clear illustration of the broad approach:

> *An inability to realise essential capabilities as a direct or indirect result of insufficient access to affordable, reliable, and safe energy services, and taking into account available reasonable alternative means of realising these capabilities.*

Such a holistic definition seems to be more appropriate than other narrower definitions when investigating responses to the energy poverty problem since it incorporates several elements and nuances and thus captures more aspects of the phenomenon (Barrella et al., 2021). This definition focuses on energy services rather than energy per se, as well as on the capability's framework, which may adequately respond to the dimensions of energy poverty.

In this sense, social entrepreneurship in energy poverty may focus on the debate about which specific services are considered fundamental (cooling, cleaning, household appliances, lighting, cooking but also entertainment and socialising or even charging a phone) or how the lack of energy services feeds the vicious circles of energy vulnerability (Bouzarovski & Simcock, 2017). Furthermore, identification and information about energy services concerning energy vulnerability factors (Bouzarovski & Petrova, 2015) may be an interesting field for social innovation and social entrepreneurship. Also, the concern for the invisibility, stigmatization, and emancipation of vulnerable people, which have been widely addressed by energy poverty research (Bouzarovski & Simcock, 2017; Day et al., 2016) could be engaging for social entrepreneurs. However, the social entrepreneurship

initiatives in energy poverty and their measurements and monitoring in countries in the Global North are very rarely addressed in the literature.

Although social entrepreneurship is already a mature field (Gupta et al., 2020), there is neither a universal definition nor a single narrative of social entrepreneurship (González-Eguino, 2015; Mair & Martí, 2006). Looking at social entrepreneurship in energy poverty, we adopt a broader meaning by considering two elements: the mission and the collective dimension. First, the mission of the social entrepreneur as related to disadvantaged groups is not generally disputed (Mair & Martí, 2006). Stricter approaches to the concept of social entrepreneurship require commercial and profitable business models through market-based activities for social purposes and normally face the challenge of managing the balance in the social–profit tensions (Gupta et al., 2020). Broader approaches go beyond the commercial perspective giving priority to the social dimension in social entrepreneurship to avoid the tensions affecting the social goals associated with economic value. In social entrepreneurship, the primacy is on the person and the social object versus share capital (notwithstanding the legal form).

Second, this study recognizes how the heroic individual theory of the social entrepreneur (Bornstein, 2007) is abandoned in favour of research on the major presence of the collective entrepreneur or the community-based collaboration among similar or diverse actors applying business principles to solving social problems (Saebi et al., 2019). Social entrepreneurship is a networked activity that introduces the progressive consolidation of more comprehensive definitions of social entrepreneurship as a collective endeavour, involving the collaboration amongst similar and diverse actors with the purpose of applying business principles to solving social problems (Power, 2018; Saebi et al., 2019; Short et al., 2009).

The umbrella concept of collective entrepreneur includes terms such as community, or community innovation, resulting in a unified framework that facilitates a more cohesive body of research (Nordstrom & Jennings, 2015; Peredo & Chrisman, 2006). Social entrepreneurship has been criticized for being a vehicle of neoliberalism to cover the wounds left by capitalism when it aims to provide public and essential services traditionally provided by the State(Nicholls & Teasdale, 2017). The creation of policies for supplying vulnerable customers is a concern typically addressed by regulation. The aspiration of social entrepreneurs to balance the market and social service logic is seen with scepticism

when utilized to serve the collective interest (Dey & Steyaert, 2010). However, the role of the social entrepreneur as a central actor in social transformation is also acknowledged, in particular within the literature on transition management.

This review includes the literature on social entrepreneurship and social innovation because both are connected and overlapping. Social entrepreneurship can be defined as the establishment of initiatives to implement social innovations within organisations of different sizes (Nandan et al., 2015). Considering the synergies between these two concepts, social innovation is a broad concept and practice implemented through social entrepreneurship. Social innovation includes new processes, products, services, concepts, strategies, and tools that address social issues to support groups in enhancing well-being and improving people's conditions in society (Dawson & Daniel, 2010). Therefore, social innovation and social entrepreneurship can be considered two sides of the same coin.

Once such a link between social entrepreneurship and social innovation is stated, we consider the literature on social entrepreneurship may be applied (albeit with caution) to explain how the agency of social entrepreneurs could approach energy poverty communities through social innovation. Concepts such as perceived moral legitimacy, empowerment, resistance, embeddedness, risk-taking, proactiveness, and diffusion of ideas are overlapping characteristics in social entrepreneurship and social innovation(Dawson & Daniel, 2010). Therefore, both terms, social innovation, and social entrepreneurship will be applied indistinctly hereafter.

These interrelated phenomena are a potentially powerful tool to facilitate the adoption of new logic to address complex social problems (Dacin et al., 2011) within the context of sustainability transitions (Geels, 2002), where the multilevel framework identifies collective social entrepreneurs as innovators at the niche level, highlighting their role in influencing at scale to produce effective changes in the incumbents of the regime (Montgomery et al., 2012; Smith, 2007). In this sense, we should keep in mind that social entrepreneurship and energy poverty are highly influenced and firmly embedded in their context, so researchers may consider different contextual and geographical settings while deploying their theoretical lenses (Mair & Martí, 2006). The context of inclusive energy transitions is significant in foregrounding the problem of energy poverty and the vulnerability of energy rights (Jenkins et al., 2018). The double challenge of the just transition aims to ensure the decarbonisation of global society without leaving anyone

behind (Sovacool, del Rio, et al., 2020). Therefore, conversations about the agency of niche actors as social entrepreneurs and innovators and their interaction at different levels to accelerate the transformation stand out in the sustainability transitions literature (Martiskainen et al., 2018). This study considers transitions as a contextual framework for the phenomenon of social entrepreneurship in energy poverty rather than considering the just transition as the object or a fundamental objective of this research.

2.4. Methodology and overview of results

2.4.1. Methodology

The first step in the systematic literature review was the identification of the keywords based on the background and reflection of the intersection between the domains of energy poverty, social entrepreneurship, and social innovation. The articles analysed were selected through a keyword advanced search using the "SUBJECT" field (including Title, Abstract, and Keywords detected by Web of Science (WOS) from a previously selected database: the WOS core collection. WOS includes the following three databases: SCI-EXPANDED, SSCI, A and HCI, and ESCI. Establishing this *practical* screen that does not include conferences proceedings or books, the focus on research-oriented context and strict filtering of only peer-review or highly rated journals relevant to the research areas was undertaken to maintain a high level of conceptual rigor and methodological quality (Gupta et al., 2020; Okoli, 2015; Smith, 2007).

Various combinations of search terms resulted in two search strings. The first one (Search 1) was ((fuel or energy) poverty AND (ENTREPRE* OR INNOVATION)), which found 190 articles. A second search string (Search 2) was (((fuel OR energy) poverty) AND (social (innovat* OR entrepreneur*))), which found 117 articles. In a second step, a comparison of the 307 articles was carried out and 216 duplications were removed. The use of these terms is justified by the intention of obtaining articles that focused on the intersection between social entrepreneurship (or innovation) and energy poverty, which are the terms commonly used by academics and professionals. The choice of a broader focus concerning social entrepreneurship justifies the inclusion of the term innovation in the search, as mentioned above. Concerning the notions of social entrepreneurship and social enterprise, they are frequently used almost interchangeably in the reviewed literature (Silvestre & Ţîrcă, 2019). The most widely accepted view is that domestic energy

deprivation could be seen as a global problem (with no division between the Global South and North), and it is generally considered that all forms of energy poverty in developing and developed countries have a common characteristic, i.e. the lack of capacity to achieve a social and material level of domestic energy services at different sizes (Day et al., 2016; Osunmuyiwa & Ahlborg, 2019). Nevertheless, this systematic literature review is focused solely on countries in the Global North because mainstream literature differentiates between the affordability perspective of energy poverty in these countries and the access to energy perspective in low-income countries.

In line with this decision, in the third step, we manually reviewed all abstracts, excluding those unrelated to our research regarding developing countries or specific to a particular industry but not energy-related (e.g., health, agriculture, water, food security). Where there was doubt about the content of an article, we retained it. The rationale for this exclusion is to limit, specify, and restrict the results as much as possible to articles whose central theme is related to entrepreneurial and/or innovative solutions and energy poverty in developed countries.

In the final step, we carefully read the full content of all articles in detail and discarded those that did not meet our criteria but had not been detected as such during the review of abstracts. The final sample included 47 articles (see Figure 2-1. Prisma flow chart of the systematic literature review).

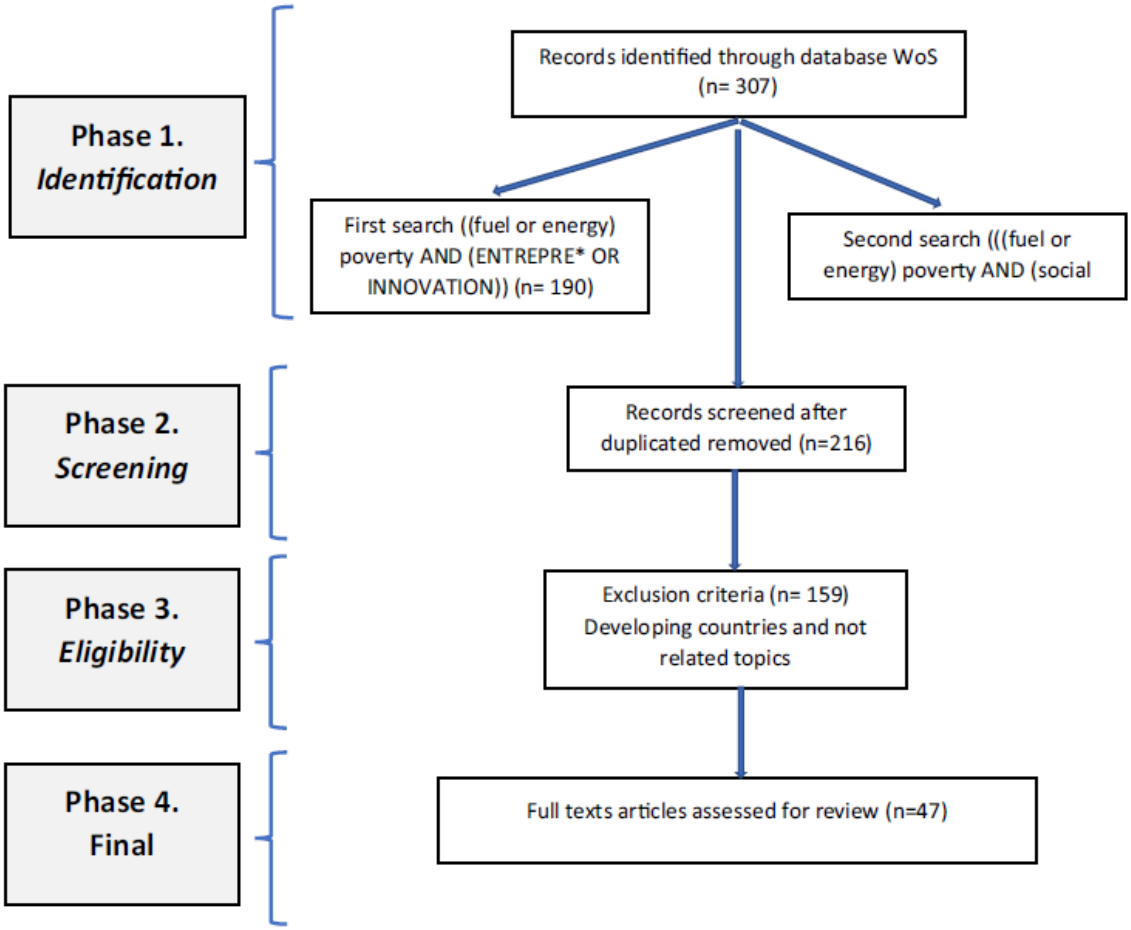

Figure 2-1. Prisma flow chart of the systematic literature review

2.4.2. Overview of studies

We conducted a preliminary quantitative analysis of the articles to help us understand the current development of academic research at the intersection of social entrepreneurship/innovation and energy poverty. The citations of each article are relevant to identify academic interests, highlighting seminal papers in the review, that is, *to identify the giants* (Okoli, 2015). There are not many citations in any of the articles: seven articles have more than 100 citations, twenty articles have between 20 and 100, and the rest (twenty-five articles) have fewer than 10 (see Table 2-1. Methodology and Citations). Besides fulfilling the Pareto principle, this indicates that relevant attention to the literature dealing with the intersection is increasing.

Table 2-1 Methodologies and citations of each article of the systematic literature review

Nº	Reference of papers in the SLR from 2020 back to 2007	Citations in 2021		Research Methods	Themes/keywords
		Feb	Oct		
1	Campos, and Marín-González (2020)	3	16	Qualitative	Prosumerism, social movements, sustainability transitions, energy justice, energy democracy
2	Jenkins *et al*. (2020)	12	13	Conceptual	Value sensitive design, responsible research and innovation, energy justice, energy systems, conceptual review
3	Belaïd, Youssef and Lazaric (2020)	8	11	Quantitative	Energy efficiency, rebound effect, quantile regression, residential energy consumption, household behavior
4	Sovacool, Del Rio, and Griffiths (2020)	15	46	Mixed Methods	Coronavirus, covid-19, energy policy, climate policy, energy governance, sustainability transitions
5	Pitt, and Nolden, (2020)	0	3	Qualitative	Social housing, solar pv, feed-in tariff; community energy, multi-occupancy buildings; fuel poverty; energy justice
6	Mechlenborg., and Gram-Hanssen (2020)	5	10	Conceptual	Gender studies; meaning of home; theories of practice; energy demand; energy transition; technology studies
7	Carley, and Konisky (2020)	16	69	Qualitative	Lower-carbon, energy transition, policy insights, justice, and equity dimensions
8	Streimikiene, and Balezentis (2020)	1	6	Quantitative	Energy, renovation, multi-flat buildings, barriers; willingness to pay, state policies
9	Longo, *et al*. (2020)	5	8	Quantitative	Energy poverty, vulnerable consumers and households, energy vulnerability, efficiency, customer engagement, energy citizenship
10	Youssif, Gatt and Caruana (2020)	1	2	Quantitative	Nearly zero energy buildings; smart building; energy renovation; social housing; energy storage; thermal comfort
11	Patkos *et al*. (2019)	2	3	Qualitative	Public policies, community innovations, climate change
12	Kalt *et al*. (2019)	39	62	Conceptual	Energy poverty, definition, energy services
13	Osunmuyiwa and Ahlborg (2019)	15	28	Quantitative	Entrepreneurship, employment, gender, and energy
14	Pueyo and Maestre (2019)	34	58	Mixed Methods	Energy poverty, conceptual definition, gender
15	Sovacool, Lipson and Chard (2019)	34	58	Qualitative	Energy justice in household low carbon, Retrofitting innovations
16	Knuth (2019)	17	22	Conceptual	Retrofitting, green growth
17	Silvestre and Tirca (2019)	119	183	Quantitative	Literature review of innovation, sustainability

18	McCauley *et al*. (2019)	69	117	Conceptual	Energy justice, interdisciplinary energy research, low carbon
19	Power (2018)	3	3	Qualitative	Regional and municipality policies, climate change and social networks
20	Elia and Margherita (2018)	25	36	Quantitative	Conceptualization of complex problems
21	Jenkins, Sovacool and McCauley (2018)	111	160	Conceptual	Energy justice and humanizing, transitions, invisibility
22	Boerenfijn *et al*. (2018)	28	31	Qualitative	Innovations, energy efficiency, social housing, older adults
23	Martiskainen, Heiskanen and Speciale (2018)	31	37	Qualitative	Information, awareness, innovation
24	Claude *et al.* (2017)	32	37	Qualitative	Energy efficiency, innovation, municipality and university role, user´s centre
25	Butler and Sherriff (2017)	23	27	Qualitative	Identification, young adults, awareness, and information
26	Picciotti (2017)	36	46	Qualitative	Social enterprises, sustainability, cooperatives, collaborative networks
27	Dandara, Tabacaru and Danila (2017)	3	3	Quantitative	Role of the financial system for social welfare
28	Imaz and Sheinbaum (2017)	27	31	Qualitative	Science and technology, SDGs, networks, research
29	Boni, Leivas and De la Fuente (2016)	0	2	Qualitative	Innovation for human development, invisibility
30	Karlsson (2016)	10	13	Conceptual	Public policies, innovation, climate change
31	Okkonen and Letonen (2016)	70	79	Qualitative	Community wind power projects, rural public policies, social entrepreneurship
32	Sdei *et al*. (2015)	17	18	Quantitative	Retrofitting, public policies, social housing
33	Dineen, Rogan and Gallachoir (2015)	35	36	Quantitative	Innovation centres, energy efficiency, limitations to data gathering
34	Webb (2015)	34	41	Qualitative	Public policies, lack of coordination in networks, social innovation
35	Schaffrin and Reibling (2015)	39	43	Quantitative	Public policies, energy efficiency, climate change
36	Fu *et al*. (2014)	18	18	Quantitative	Public policies, heating, climate change
37	Bale *et al*. (2013)	59	65	Quantitative	Networks, energy technologies
38	Sovacool and Mukherjee (2011)	485	538	Mixed Methods	Public policies, data gathering, energy security
39	Dyck (2006)	14	15	Quantitative	Planning, networks

40	Sahakian and Dobigny (2019)	5	6	Qualitative	Public policies initiatives, awareness. communication in networks, energy transition, reduction of consumption
41	Streimikiene and Balezentis (2019)	5	9	Quantitative	Public policies, retrofitting, Russia
42	Nunes (2018)	7	8	Mixed Methods	Identification, older adults
43	Sovacool, Axsen and Sorrell (2018)	300	439	Mixed methods	Research in energy and science, excellency, energy social science
44	Santamouris (2016)	176	201	Qualitative	Innovating, energy efficiency, climate change
45	Costello *et al.* (2011)	82	90	Conceptual	Climate change, positive action
46	O'Brien and Hope (2010)	136	145	Qualitative	Public policies, localism and centralism, private funding, user focus
47	Brugmann and Prahalad (2007)	488	529	Conceptual	Private sector and third sector, networks relationship among Non-Governmental Organisations and companies

Source: Authors' elaboration. Number of citations accessed on February 20th, 2021, and October 3rd, 2021.

We filtered this search by publications until December 2020. An initial time restriction was not included since the treatment of the three domains together is relatively new, meaning that there is considerable previous literature about social innovation, social entrepreneurship, and energy poverty but not with the joint perspective. We did not include either any limitation on conceptual or empirical articles or on any type of methodology. Because the intersection of energy poverty, social innovation, and social entrepreneurship is an emerging issue, the articles reviewed began to appear in 2000 with a steep rise of publications after 2015, mainly related to the growing interest from researchers in the problem from a multi-actor and MLP approach (Geels, 2002) (see Figure 2-2). Figure 2-2 (Timings of publications) also shows the topics addressed by the studies linked with each of our research questions, illustrating the growing interest in efficiency, but also policy implications of social innovation in energy poverty or the networked nature of energy poverty.

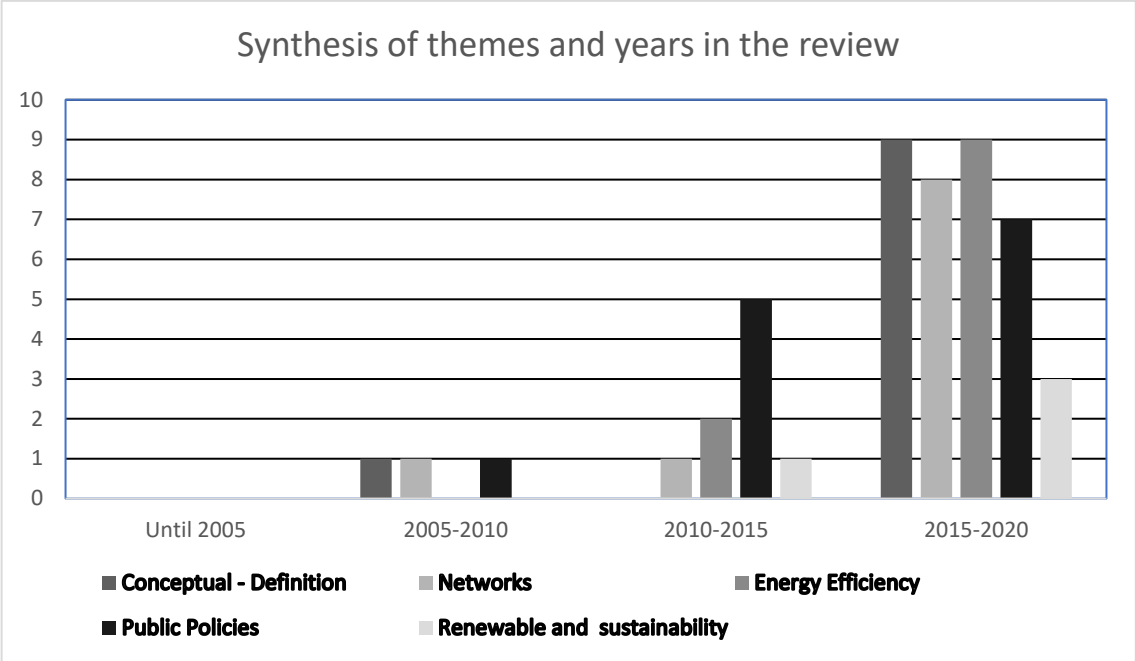

Figure 2-2. Timing of publications and themes of the articles selected in the review.

Each step in the review is documented and content validity is confirmed by including the research community in the process (Wannags & Gold, 2020). Two factors motivated the methodology selection: to better assess the state of research at the intersection (Webster & Watson, 2002), and to understand how researchers dealt with social entrepreneurship in energy poverty and what innovative solutions were proposed (Macinnis, 2011).

The general overview of results shows four main features in the description of studies. First, regarding the disciplinary approach, it is remarkable that social science journals represented only 5% of studies in the energy field. This suggests the opportunity for scholars to focus on human-centred studies and consultation with people, addressing topics such as energy justice, social innovation, or financial incentives. For instance, the Energy Research & Social Science Journal attempts to cover these gaps. However, this review shows that the focus centralised on the intersection between the two areas of energy poverty and social entrepreneurship/innovation still appears to be understudied.and it elicits the opportunity to reinforce pre-research to obtain the necessary scientific utility as a theoretical development, but also as its applicability in practice (Sovacool et al., 2018). In sum, this literature reflects the concern about the limited attention paid to the research on social entrepreneurship and social innovation in energy poverty and its inclusion in the political agenda (González-Eguino, 2015). The diversity of foci, methodologies, and lenses

and the segmentation of actors into disciplines may tend to lead to inefficient approaches (Guyet et al., 2018).

Second, in relation to the frameworks used in the articles reviewed, three main approaches stand out: the capabilities approach, the energy service cascade framework, and the energy justice theoretical perspective (Elia & Margherita, 2018; Kalt et al., 2019; McCauley et al., 2019; Sovacool et al., 2019). Hence, while, as noted above, the extant literature on energy poverty eschews a human-centred approach, the work on the intersection between energy poverty and social enterprise demonstrates holistic, people-centred approaches, rather than a focus on the technological perspective of the problem.

Third, concerning the type of journals that published the 47 articles analysed, they were mostly related to energy and less to management domains. There were ten articles from the journal *Energy Research and Social Science*, seven (7) from *Energy Policy* and two (2) in *Energy Journal*. The rest of the journals only had one entry in the review and reflected diversity as illustrated by other publications such as *Technological Forecasting and Social Change, Environment and Planning A-Economy and Space, Energy and Buildings, or Applied Geography*. As Sovacool (2014) highlighted, the three main journals dealing with interdisciplinary discussions on the interaction of social and technical issues related to energy, the so-called *energy social science,* are *Energy Policy*, *Energy Research and Social Science,* and *Energy Journal*. The journal *Energy Research and Social Science* is expressly committed to human-centred approaches to energy-related problems, integrating methods and concepts from social sciences to investigate the social system around energy technology (Sovacool, 2014; Sovacool et al., 2020).

Finally, regarding the methodological designs used in each article of the review (see Table 2-1), we found four types of studies in our 47 papers sample: conceptual (9), qualitative (18), quantitative (15), and mixed methods (5). 38% of the articles reviewed were qualitative. This Table 2-1 indicates the methodology and epistemology in each paper as a starting point guide from where the authors are building (Gupta et al., 2020). This review identified a considerable number of qualitative research approaches, mainly using semi-structured interviews (Patkós et al., 2019), case studies (Boerenfijn et al., 2018; Martiskainen et al., 2018; Power, 2018) or even participatory video (Boni et al., 2016). The topics of these analyses are dominantly about social housing (Boerenfijn et al., 2018; Pitt & Nolden, 2020), energy efficiency (Dineen et al., 2015; Santamouris, 2016), and

retrofitting. The type of actors involved in the interventions vary from housing associations (Sdei et al., 2015), local networks (Bale et al., 2013), and energy communities (Campos & Marín-González, 2020; Martiskainen et al., 2018), to energy cooperatives for further local development (Picciotti, 2017). Fewer examples of quantitative methods were found, except in the selected papers on measuring indicators and quantitative energy models (Dineen et al., 2015; Fu et al., 2014).

The type of methodologies used by scholars reflects a balance between human interpretation and the quantitative measurement required to understand the highly variable context of energy poverty. Also, the reference to the research method of each of the papers included in Table 2-1 enriches the contribution with examples, not as blueprints or as models for collective construction (Czarniawska, 2004). The attention to the epistemological approach of the researchers examining the activity of social entrepreneurs or social innovators in energy poverty shows an increasing number of qualitative studies in which the object is beyond the identification of the causes of energy poverty (Nunes, 2018; Sdei et al., 2015). Interpretive epistemologies commonly focus data analyses on tensions and perceptions of experiences of the phenomenon (Yanow, 2000) review highlights the opportunity to use such lenses - different from those focused on explaining or demonstrating statistical relationships about the phenomenon - to grasp the social phenomenon of energy poverty through the study of organisations and help to maintain a close link between research and practice (Czarniawska, 2004).

Sovacool (2014) called attention to the gap between what energy researchers consider to be essential and what practitioners, utility commissioners, and politicians think and do. Especially in energy poverty, there are few connections between academic literature and actions coordinated by practitioners, resulting in a lack of structured solutions through scalable interventions. In other words, the literature on energy poverty tends to be inattentive to evaluating interventions in energy poverty. This review acknowledges the limited availability of relevant and comparable data, often collected for other purposes and the inexistence of reliable metrics to characterise energy poverty, which justifies a dominant focus of researchers on identifying and measuring vulnerability. Without those measurements, it is difficult to make and monitor policies oriented to the most vulnerable consumers. However, this review emphasises also the relevance of more qualitative and interpretive research approaches that may permit researchers to understand and integrate

values, beliefs, and feelings with a more human centred-approach in a social world formed by multiple interpretations (Dawson & Daniel, 2010; Yanow, 2000).

2.5. Results

The findings in the review reveal a fragmented map of social entrepreneurship and social innovation solutions offered to address energy poverty, as would be expected for this emerging territory of responses to this pressing challenge. The papers tend to give social entrepreneurship a secondary rather than a central role in the problem of energy poverty, since political actors, energy poverty dimensions, and relevant topics are dominant. The energy transition is the backdrop to the current research on social innovation/social entrepreneurship in the field of energy poverty.

From a careful examination of the selected articles, five main categories of themes were developed inductively: 1) perspectives of energy poverty; 2) roles and characteristics of social entrepreneurship in the network of energy services in energy poverty; 3) solutions offered by interventions in energy poverty; 4) the role of social entrepreneurship in addressing energy poverty in the context of the inclusive energy transition; and 5) the implications for policymaking in energy poverty from social entrepreneurship and social innovation. Underlying such diversity of themes emerging from the review, a common thread connecting energy poverty, social entrepreneurship and social innovation is found: a general concern about the opportunity to include more social enterprise approaches to tackling energy poverty.

2.5.1. Conceptualizations of energy poverty about social entrepreneurship

The definition of energy poverty is not universal, and different definitions may encompass different causes, consequences, and ethical frameworks that underly the need to tackle energy poverty. Such variety has implications for the type of interventions authors find appropriate to alleviate energy poverty, as well as on the interpretations they make regarding the role of social entrepreneurship and social innovation.

First, when approaching the causes of energy poverty, most articles show that, although low income is assumed to be the main cause of energy poverty, other factors such as energy inefficient housing, institutional political factors, or the need to approach energy poverty from the notion of energy services are also emphasized (Boerenfijn et al., 2018;

Santamouris, 2016) individuals or families do not demand energy itself but rather the services delivered by energy. Energy-poor households suffer the inability to attain a socially and materially necessary level of domestic energy services. Thus, the relationship between energy services and human needs is central in the articles reviewed, since a better understanding of energy services may encourage the emergence of alternatives to current interventions, such as innovations enacted by social entrepreneurs (Martiskainen et al., 2018; Sdei et al., 2015; Sovacool et al., 2019). An 'energy services' conceptualisation could reveal new routes across multiple levels to eliminate fuel poverty or culminate in new integrated business models to deliver co-benefits. A clear illustration is offered in the work by Kalt *et al*. (2019), in which a model called Energy Service Cascade is developed. This model identifies energy services, together with energy structures, functions, benefits, and values, along the whole energy chain. This approach widens the possibilities for creating social innovation initiatives and new social business models to meet basic needs and increase well-being through the provision of energy services, such as “space heat and cooling, developing energy concepts for buildings or monitoring energy consumption before and/or after implementation of efficiency measures" (Kalt et al., 2019).

A second finding regarding the conceptualisation of energy poverty in the review is the significance of energy justice, generally used as the appropriate rationale and ethical framework to guide social innovation and social entrepreneurship initiatives (Jenkins et al., 2018; McCauley & Heffron, 2018; Sovacool et al., 2019, 2020). The energy justice frame is an emerging field that envisions a world where all individuals, across all areas, have safe, affordable, and sustainable energy (Jenkins et al., 2018). Energy poverty affects the people who suffer from it, and energy justice requires reflexivity to reshape the work of energy companies (Jenkins et al., 2020).

Energy justice is a conceptual, analytical, and decision-making framework for understanding when and where ethical questions on energy appear, who should be involved in their resolution, and ultimately which solutions must be pursued to achieve a sustainable energy system underpinned by fairness and equity (McCauley et al., 2019). Interdisciplinary approaches that bridge disciplines and domains are particularly suitable to address energy justice issues (Sovacool, 2014; Sovacool et al., 2019). Poor consideration of social issues and little focus on individuals in the energy transition can lead to injustice, so states and companies should also apply energy justice (Jenkins, Spruit, et al., 2020;

Jenkins et al., 2018; O'Brien & Hope, 2010). Non-systematic application of energy justice principles in energy poverty initiatives may lead to the non-inclusion of vulnerable people in the energy transition.

The root of the energy justice scholarship is evolving from the environmental justice frame, and greater direct engagement with energy justice frameworks is often missing (Jenkins et al., 2018). Energy justice allows engaging with ethical dilemmas in the context of the energy transition framework. Calls for performing energy justice decisions in transitions must include care for ethical dilemmas like fairly distributing energy infrastructure and services, allowing attention to the anticipated future wishes of those currently marginalised (Jenkins et al., 2018). Therefore, providing resonance to energy justice should be a priority when planning for more sustainable transitions (Manjon et al., 2021). However, this conceptual and analytical tool is not comprehensive as a decision-making tool, demanding further application in practice. In the review, we find two examples of implementation of the energy justice framework from a perspective on the insufficiency of information on energy services. Martiskainen *et al*. (2018) study Energy Cafés as an example of how community action initiatives are often driven by social good rather than by pure commercial motives. Energy Cafés have been conceptualised as grassroots innovations providing advice on energy issues to the public. Also, the *green doctors* of the behavioural change programs of social housing strategies provide door-to-door energy advice for residents (Boerenfijn et al., 2018).

Therefore, the framework of energy justice intertwines with other dimensions of poverty in the interventions (Jenkins et al., 2020; McCauley et al., 2019). Jenkins, Sovacool, and McCauley (2018) differentiated between the practical terms of energy poverty and the more theoretical concept of energy justice, which, combined, enable social entrepreneurs to have the aspirational goal of tackling this complex problem. Such a goal will help social entrepreneurs in energy poverty to become familiarised with the concept of energy poverty more broadly and to guide decision-making. Elia and Margherita (2018) also raise the difficulty of complex problems that need complex solutions and how social justice in the energy transition would lead us to energy justice principles. However, the terminology of this conceptualisation is still not precise and homogeneous among all actors involved (Jenkins, Spruit, et al., 2020; Jenkins et al., 2018).

In sum, the intersection of domains under review makes this framework appropriate for legitimising entrepreneurial interventions in energy poverty. It may provide a shared vision for social entrepreneurship in energy poverty with justice and person-centred approach specifically focused on vulnerable groups (Bouzarovski & Petrova, 2015).

2.5.2. Conceptualisations of social entrepreneurship in the network of energy services in energy poverty

This section discusses the conceptualisations of the social entrepreneurship initiatives identified in the review. The results show that the role of social entrepreneurship is not treated homogeneously in energy poverty, demonstrating a lack of clear boundaries with which to define social entrepreneurship (Short et al., 2009) that we discussed in the background section. The tension between social and economic missions, common in the social entrepreneurship phenomenon (Gupta et al., 2020), also appears in social innovation in energy poverty. Still, this tension seems to be solved by giving prevalence to the social dimension. The reference to the commercial mission that may be part of the definition of a social enterprise does not appear in the review except on rare occasions. For instance, the study by Boerenfijn *et al*. (2018) uses four case studies to highlight economic profitability as an objective of the social housing initiative of Habion in the Netherlands. This paper investigates the financial aspects (e.g., crowdfunding) of the interventions related to investments in better appliances in terms of electricity consumption, smart home technologies, or renewable energy.

Other papers show that the commercial dimension in social innovation is questioned to some extent since the initiatives might fail more often due to commercial uncertainties. Innovation implies that significant changes must be adopted by community networks (Silvestre & Ţîrcă, 2019) to steadily allow the energy transition with new metrics, processes, and structures (Sovacool et al., 2019). Thus, it requires action from all actors, given its complexity, dynamism, and uncertainty. In this sense, social entrepreneurship in relation to communities is clearly illustrated in the article on Energy Cafés (Martiskainen et al., 2018), which refers to interventions to tackle energy poverty in areas such as energy literacy, energy poverty awareness, and billing information. It also explains the crucial role of grassroots innovations, i.e., "networks of activists and organisations generating novel bottom-up solutions for sustainable development" (Smith & Seyfang, 2013), driven by

social good rather than by purely economic motives. In this respect, we should highlight the critical agency of social services assistance to implement palliative measures through isolated public or private interventions such as Energy Cafés in the UK (Martiskainen et al., 2018).

Some papers are concerned with the role of community-based initiatives in tackling energy poverty with innovation (Okkonen & Lehtonen, 2016; Picciotti, 2017), commonly highlighting the relevance of cooperatives in the energy field. For example, Picciotti (2017) explores social entrepreneurship through the case study of some cooperatives in Italy, such as collaborative networks, with an emphasis on democratic governance, multivocality, the integration of the disadvantaged in qualified activities and the reinvesting of profits in the community. The collective side of social innovation applies to the organisations' ability to innovate as a result of the collective capabilities and their activities and networks to reach their goals (Dawson & Daniel, 2010). Community-based social enterprises are also studied by Okkonen and Lehtonen (Okkonen & Lehtonen, 2016), who analyse the socio-economic impacts of eleven wind farms on those types of social enterprises as promising solutions for transforming rural areas.

2.5.3. Characteristics of the solutions offered by social entrepreneurs to energy poverty

Regarding the solutions and interventions identified in the literature to fight energy poverty through social innovation and entrepreneurship, three common features stand out. First, they are predominantly based on both the identification of vulnerable households and the analysis of the indicators to gain a clear understanding of the causes (Dineen et al., 2015; Nunes, 2018; Sovacool & Mukherjee, 2011). Second, the social innovations studied usually encompass a diversity of perspectives in the subgroups of affected communities (Butler & Sherriff, 2017), as well as multiple actors participating in the interventions (O'Brien & Hope, 2010; Streimikiene & Balezentis, 2019). Third, in many cases, the actors involved are not self-identified as social entrepreneurs, which reveals the lack of institutionalisation of the phenomenon of social entrepreneurship working with impoverished groups, as illustrated for example by the home energy advisors or *green doctors* (Sdei et al., 2015).

On these bases, the types of social innovation and entrepreneurship initiatives studied include two foci related to the causes of energy poverty: to reduce energy

consumption and empower individuals and groups suffering from energy poverty from collective action.

2.5.3.1.Social innovation and entrepreneurship to reduce energy consumption

The relationship between energy poverty and home energy efficiency is developing both in the academic realm and in the European legal framework for housing renovation. The emphasis on alleviating energy poverty by reducing energy consumption and related expenditure revolves around increasing energy efficiency (Gatt et al., 2020; Sahakian & Dobigny, 2019; Schaffrin & Reibling, 2015). Solutions to tackle energy poverty based on energy efficiency issues are dominant in the review, ranging from palliative or light measures (Sdei et al., 2015) to deep or more structural perspectives (Knuth, 2019).

The perspectives on energy efficiency vary among the articles reviewed. Some papers are concerned with the role of retrofitting or renovation to address energy poverty to ensure healthy, energy-efficient, and carbon-free buildings for all since they see in retrofitting an opportunity to introduce green and inclusive energy efficiency measures (Bale et al., 2013; Claude et al., 2017; Dineen et al., 2015; Knuth, 2019; O'Brien & Hope, 2010; Sahakian & Dobigny, 2019; Santamouris, 2016; Sdei et al., 2015; Streimikiene & Balezentis, 2019). These works refer to the need for a skilled workforce to carry out the energy retrofitting of old buildings by the private and public sectors.

Several authors study social innovation initiatives related to energy efficiency at household levels (Sahakian & Dobigny, 2019; Schaffrin & Reibling, 2015) since decreasing domestic energy consumption is a way to tackle energy poverty that can be more manageable locally through social entrepreneurship initiatives. Sahakian and Dobigny (2019) empirically verify how consumption patterns can provide much information about household time uses or lack of insulation, and therefore why focusing on changes in behaviour patterns could have reduced energy consumption.

Other initiatives focus on efficiency-based solutions to social housing, i.e., initiatives that provide housing to people with limited financial resources (Boerenfijn et al., 2018; Gatt et al., 2020; Pitt & Nolden, 2020; Streimikiene & Balezentis, 2019). They are oriented both to improve the lives of vulnerable people and to address one of the overarching causes of energy poverty: energy efficiency in homes. Community benefits gained through renovation works appear, for instance, in Boerenfijn *et al*. (2018), who

study an initiative on energy information asymmetry in social housing aimed at favouring energy savings for their residents. An illustrative example is that offered by Sdei *et al*. (2015), who compare the results of two retrofitting interventions in social housing, using innovative social alternatives of behavioural programs with empowerment through energy advice and energy education programmes. Beyond the retrofit works, the objective is also generating energy savings, improving fuel bills, and minimising fuel poverty throughout the engagement of the community (not just at the level of individual households). Social activities, reaching otherwise 'hard to reach' households, formed an essential part of this strategy, so residents attended various meetings and workshops (Sdei et al., 2015). There was a combination of community work with the *green doctors*, energy efficiency experts who visit people in their homes, helping vulnerable households to save money and stay warm. Their work was designed to enable and empower the local community. They had a very positive impact on engaging the residents in some of the energy reduction practices and how capable residents felt in passing on energy-saving practices to other residents. The focus on individual and community interventions was essential for the success of those projects.

Finally, we note a lack of longer-term evaluation of energy renovation programmes that includes measuring the social impact and more comprehensive studies. The potential reduction of energy poverty usually is not quantified in advance. Since completed renovation programs have positive and negative factors, fundamental principles may be applied to the design of energy renovation programmes to maximise the social benefits. Such re-design may avoid the social risk of adverse outcomes, such as unaffordable rents after retrofitting, higher energy bills after new heating and payment arrangement, or lack of focus in the community (European Commision, 2020; Maby, 2020).

2.5.3.2.Social innovations and entrepreneurship to empower people through social networks and energy communities

Overall, the collective dimension of the innovation and entrepreneurship initiatives to alleviate energy poverty is dominant in the papers examined (Bale et al., 2013; Claude et al., 2017; Martiskainen et al., 2018; O'Brien & Hope, 2010; Okkonen & Lehtonen, 2016; Patkós et al., 2019; Picciotti, 2017; Webb, 2015). This finding is coherent with the collective social dimension often embedded in social entrepreneurship (Nordstrom & Jennings, 2015), as well as the extension of the concept of social entrepreneurship to that

of community-based enterprises, integrating elements from commercial entrepreneurship and social network theory to show how community-based enterprises may differ from the standard notion of entrepreneurship (Picciotti, 2017).

Thus, a variety of examples of interventions, community action, and co-creation with a network perspective appear (Bale et al., 2013; Claude et al., 2017; Martiskainen et al., 2018; O'Brien & Hope, 2010; Okkonen & Lehtonen, 2016; Patkós et al., 2019; Webb, 2015) in the review reflecting the collective nature of the energy poverty problem, For instance, Martiskainen, et al., (2018) describe how local communities approach energy poverty with innovations such as the Energy Cafés (United Kingdom). This research shows that energy poverty is essentially a poverty issue and is therefore very sensitive to the fear of stigmatization. As Sdei *et al*. (2015) or Butler and Sheriff (2017) also highlight, social problems like energy poverty must be treated with special care and through proximity.

The study of the Living Labs in Cahors (France) shows the relevance of the network of actors in energy poverty. It offers an example of co-creation of innovation with vulnerable consumers, governance of collaborations and multidisciplinary work, as well as the relevant roles attained by the university and the municipality. The user-centred approach successfully brings about expertise among the several partners involved in the project (Claude et al., 2017). O'Brien and Hope (2010) also argue that privately funded interventions should pay special attention to the user vision and the non-commercialization of certain energy services. In turn, Picciotti (2017) emphasizes the complexity of implementing renewable energy projects through local communities and how these initiatives may create new ways for local development with a human-centred approach.

When describing social innovation and entrepreneurship initiatives related to energy networks, a diversity of subthemes arises. Depending on the actor in the network, the levels of awareness and priority of the problem will be different (Butler & Sherriff, 2017). O'Brien and Hope (2010) refer to the skills of the members of the network and their learning capacity suggesting the need to share common goals. In this sense, trust, coordination, and communication are capabilities required in the relationships forged between the members of the networks to achieve the activation of all players (Jenkins et al., 2018; Knuth, 2019; Montgomery et al., 2012; Okkonen & Lehtonen, 2016; Picciotti, 2017; Sahakian & Dobigny, 2019). Brugmann and Prahalad (2007) propose adopting a combination of technical and managerial skills in third sector networks, aligned with Saebi

et al., (2019) defence of interactive and collective processes to enhance innovation, commercialisation, and business development in energy poverty.

In sum, social innovation and entrepreneurship are a productive space for training all actors involved in energy poverty from a co-creative approach (Campos & Marín-González, 2020; Claude et al., 2017; Webb, 2015).

2.5.4. The role of social entrepreneurship in energy poverty in the context of inclusive energy transition

A recurring pattern in our review is the interrelationship between fighting climate change and alleviating energy poverty, either explicitly or implicitly (Knuth, 2019; Santamouris, 2016; Silvestre & Ţîrcă, 2019). Such an interrelationship is contextualized by the energy transition framework (Jenkins et al., 2018; McCauley & Heffron, 2018; Sovacool et al., 2019, 2020) based on the idea of vulnerable consumers not being left behind in the energy transition, since they will suffer more from the consequences of climate change or the non-use of low carbon resources (Campos & Marín-González, 2020). This approach is applied to specific groups such as older adults (Boerenfijn et al., 2018), young adults (Nunes, 2018), women (Mechlenborg & Gram-Hanssen, 2020), people in rural areas (Okkonen & Lehtonen, 2016), and local communities (Patkós et al., 2019).

It is argued that the effects of climate change are devastating to health and energy poverty, and we should move towards pragmatic and positive action. For instance, Knuth (2019) mentions the opportunities for entrepreneurship in green retrofitting entrepreneurs, and those only sustainability-based policies should be considered. Silvestre and Tirca (2019) discuss the tensions between commercial innovation and sustainable, green, and social innovation, and defend the triple bottom line reporting for sustainable innovation.

The double challenge of energy transition and energy poverty addressed by social innovation is addressed by scholars, who underline the need to bring people to the centre of the energy transition. For example, Energy Cafés are local community initiatives providing face-to-face energy advice to people in a welcoming setting. Such settings address the identification and partial solutions to energy poverty and other areas of the energy transition by empowering communities (Martiskainen et al., 2018). In a similar vein, Cahors innovation lab is searching for user-centred solutions by providing retrofitting

initiatives to address the high levels of deterioration and vacancy rate of dwellings and varied problems derived from energy poverty.

Jenkins, Sovacool, and McCauley (2018) redirect the energy poverty problem into the sustainability transition including renewable energy and social lenses. The concept of sustainability transition goes beyond renewable energy and foresees paradigm shifts in energy use. The question of inclusivity, the right to energy, and energy justice are central in this system transformation, so the agency of all actors involved is crucial (Jenkins et al., 2020). The transition framework brings visibility to energy poverty as a social problem in social entrepreneurship and supports the growth of private social innovation initiatives in this field. The inclusive transition is a process, and it demands a multi-actor approach (Carley & Konisky, 2020). Thanks to their hybrid nature, new social spaces created by social entrepreneurs may acquire more influence and relevant roles. Moreover, examining how social entrepreneurs and innovators overcome the challenges of the energy transition and the growing visibility of energy poverty in this context may develop more social entrepreneurship initiatives with the aspirational goal to tackle energy poverty and more attention from scholars to *responsible research* (Jenkins et al., 2020).

With a more critical approach to the decarbonisation process, Sovacool, Lipson and Chard (2019) show how the challenges of decarbonisation and innovation in household energy services will bring new tensions and risks for houses in vulnerable situations. They suggest four typologies of technological changes (from incremental to more radical) to show low carbon innovations through the conceptual lens of energy justice. This paper illustrates the challenges emerging from this critical approach to decarbonization that social entrepreneurship engaged in alleviating energy poverty will have to face. Those challenges point also to the role of science and innovation and the SDGs in the green transition, as highlighted by Imaz and Sheinbaum (2017).

The social side of innovation frequently remains hidden behind a technical agenda and business competition (Dawson & Daniel, 2010). The environmental aspect is an underlying constituent in many articles because the energy transition is noted as a requirement to combat climate change. Thus, the environmental dimension is predominant over the social one. For this reason, the literature has not yet sufficiently conceptualised social entrepreneurship where the primary or the sole mission is tackling energy poverty. Instead, energy poverty alleviation is usually a side effect of the conscious sustainability

strategy of a principal business. However, social enterprise´s engagement to achieve social goals (González-Eguino, 2015), together with social awareness, are relevant for successful change (Dawson & Daniel, 2010).

2.5.5. Implications of bottom-up social entrepreneurship and innovation initiatives on energy poverty public policies

Among the papers examined, seven articles from *Energy Policy* make explicit contributions for policymakers and energy planners, including the role of social entrepreneurship and social innovations in public policy. From the review of social entrepreneurship experiences on energy poverty, we can draw policy insights to provoke and develop bottom-up, integrated, and better-informed public policies to tackle energy poverty(S. Bouzarovski et al., 2020). More specifically, this section addresses policy insights into energy consumption, data collection, and modelling for energy poverty policymaking, as well as the need for innovative schemes and coordination of levels of government.

Energy provision is a highly regulated sector. Therefore, the influence of policymakers in minimising energy poverty is significant, as is evident in the constant references to policy insights in the review of the literature (Sovacool & Mukherjee, 2011). Silvestre and Tirca (2019) recommend that policymakers adopt more radical approaches towards sustainable innovation to address the current social and environmental challenges and obtain additional insights into public policies about energy poverty. One of the aspirations of the interventions from social entrepreneurs in energy poverty is to trigger bottom-up public policies towards minimising energy poverty. Social innovation is characterised by their enthusiasm for bottom-up approaches (Seyfang et al., 2013). O´Brien and Hope (2010) address the challenge for energy policy to work with environmental and social issues such as energy poverty in the case study of North Tyneside Council. They argue that interventions with a user-centred approach may improve the interaction with the energy system and provide more structured approaches to energy poverty.

Sovacool, Lipson, and Chard (2019) justify the need to develop inclusive policies considering the justice tensions developed in the decarbonization process and the innovation in household energy services. The authors indicate who is at risk today from low-carbon innovations: consumers with prepayment meters who pay more for their energy, tenants and those with no roof, and people unable to purchase technologies. They

also explain who will be at risk in the future: consumers without access to new energy services or rooftop PV, those who have no roof on which to sire solar PV and those with no access to low-carbon energy networks. They recommend that policymakers focus on the tensions of today instead of tomorrow's challenges. Therefore, since decarbonizing the household energy system also comes with justice tensions, collective social entrepreneurship, and innovation's role in understanding those tensions and addressing those challenges is an opportunity.

Webb (2015) analyses the case study of a non-profit ESCO in Aberdeen (Scotland) and identifies a lack of clarity in the competence appropriation between State, region, and local government. The results unveil the lack of capability and technical experience in energy matters from local authorities as well as social and environmental issues related to energy projects, and they also highlight the lack of coordination in multi-party networks. Her work proposes long-term approaches and tackles any confusion regarding the boundaries of energy poverty and climate change policies. Such tensions highlight where energy and social policies intertwine, but these conflict-specific misunderstandings represent critical challenges for social transformations.

Regarding policy insights from bottom-up approaches to energy consumption, Sahakian, and Dobigny (2019) analyse fifty initiatives related to reducing household energy use in Switzerland and provides some findings from the participatory processes of engaging households in such initiatives. For example, how people engage in their everyday life with appliances or behavioural changes. This paper illustrates how long-term solutions co-produced by participatory processes may increase the efforts to make household energy uses more efficient depending on the diversity of the user and the everyday practices within different contexts. Policymakers involved in energy policies should foster participatory initiatives and acknowledge their insights because collaborations between different actors who have come together have benefits in two directions: first, they encourage public sector learning from associations, social movements, cooperatives, and researchers; and second, they provide more diversity to policy agendas.

The relevance of data collection and the modelling of energy use and consumption to avoid exclusion errors in political measures is also addressed by researchers. For instance, Bale *et al.* (2013) study public sector interventions to increase the uptake of low carbon technologies for domestic energy use and alleviate energy poverty. They build a

'social networks' mixed model that may serve as a tool for local authorities to design and assess the strategy of their interventions. Their results suggest more research into energy innovations in energy poverty is required, to achieve consolidation of the field and ensure its diffusion to larger audiences. This paper proposes that local authorities use this model to maximise energy efficiency and retrofitting in households.

Some papers emphasise the need for attractive, innovative schemes for entrepreneurs operating within different scales of enterprise. In the context of Lithuania, Streimikiene, and Balezentis, (2019) highlight the fact that holistic, well-targeted schemes could encourage an increase in bottom-up interventions (Dandara-Tabacaru & Danila, 2017). They also propose ways to implement energy justice principles through, for example, life-line tariffs for renovation, which imply sharing the costs among apartment owners, depending on their incomes.

Finally, there are also insights related to the coordination of levels of governments and regions to address energy poverty. In this sense, we find a call to the moral obligation of rich countries to implement global sustainable innovation policies arguing that innovation is mainly a state obligation (Karlsson, 2016). This obligation reveals the tension between the inclusive transition challenge and the development of regional, local, and rural renewable policies.

Concerning the critical role of municipalities in energy poverty, two papers stand out. Okkonen and Letonen (2016) study a case of wind projects in Northern Scotland to highlight the problem of political competencies. This study provides evidence of the lack of technical capacity in local administrations to face complex problems like sustainability and energy poverty. They find it is not common for a project coordinator position to be held by local authorities and not by private entities, but it is rarely the case that such public leaders are fully trained in all technical and social skills. Patkos *et al.* (2019) research on Hungarian municipalities pays attention to local communities as relevant agents versus the central government in the origination of adequate responses to energy efficiency and renewable energy sources.

2.6. Discussion and research agenda

This systematic literature review showed the main themes identified in the intersection of energy poverty, social entrepreneurship, and social innovation. In order to take a step

further, this discussion suggests some theoretical and practical implications derived from the review for the social entrepreneur and social innovation to promote and institutionalize their activity to mobilize other actors, especially policymakers, in tackling energy poverty.

First, the review highlights the relevance of the energy justice perspective (Jenkins et al., 2018) as an overarching framework for underpinning bottom-up local social innovation initiatives and top-down public policies from a holistic perspective. Scholars emphasise that a systematic application of energy justice principles in energy poverty initiatives may encourage inclusivity in the context of the energy transition (McCauley & Heffron, 2018; O'Brien & Hope, 2010; Sovacool & Mukherjee, 2011). Thus, more theoretical research is necessary to study energy social entrepreneurship and social innovation in energy transitions from justice lenses as an integrative and comprehensive framework to adopt a common language across the energy poverty network (Jenkins et al., 2020; Silvestre & Ţîrcă, 2019; Sovacool et al., 2019).

Second, our findings call for more consideration of the adequacy of the hybrid nature of social entrepreneurs to tackle energy poverty, since they may have acquired both technical skills related to the knowledge of the complexities of the energy systems and social skills related to their proximity to energy users suffering from energy poverty. Specific knowledge, experience, and skills are needed to deal with energy poverty, given its difference from other aspects of poverty. Furthermore, as energy poverty is marked by collective and network dimensions, the research reviewed emphasises how social entrepreneurs working in energy poverty have developed the corresponding focus on building trust, communication, and other coordination skills directed towards the activation of all players (Jenkins et al., 2018; Knuth, 2019; Montgomery et al., 2012; Okkonen & Lehtonen, 2016; Picciotti, 2017; Sahakian & Dobigny, 2019). Therefore, social entrepreneurs might play a productive role in training all actors involved in the problem of energy poverty from a co-creative approach (Prahalad & Brugmann, 2007) paying special care to the active involvement of the vulnerable people.

More research on the attributes of social entrepreneurs as coordinators and intermediators could help increase the awareness and visibility of the energy poverty problem. A prior reflection on which type of new ways of collaboration and the reason for the need, are questions that need to be posed, including the transference of capabilities among private and public actors with a focus on a wider impact and a single objective

shared by the whole network to eradicate the problem of energy poverty (Martiskainen et al., 2018). The exchanges of resources and the improvement of the relationships between the members of the fragmented social network around energy poverty need to be analysed in-depth, including the challenges of communication, active listening, information, and awareness of social changes. The agency of the social entrepreneur as an intermediary may help to ensure the involvement of human-centred aspects in energy democracy (Boni et al., 2016; Claude et al., 2017; Kalt et al., 2019; O'Brien & Hope, 2010). The social side that appeared sporadically in some papers more focused on technical or traditional energy business, maybe scrutinised through the sustainability plans of the growing number of renewable energy projects or decarbonisation projects promoted by the transition. Social aspects are gaining relevance since their non-consideration may put the development and execution of those urban or rural projects at risk. It may be an opportunity for social innovations in energy poverty to institutionalise and be part of good practices in sustainability plans of renewable energy projects. The findings reflect the relevance and fragmentation of the network in energy poverty and raise new considerations for tocial entrepreneur and social innovation interventions. The unclear identification of the different members of this network and the unclear role of the social entrepreneur (Kalt et al., 2019; Streimikiene & Balezentis, 2019; Webb, 2015) in the energy poverty network suggest the potential for developing coordination and intermediary capabilities (Gupta et al., 2020). The robustness and strength of ties in the network are key to the alleviation of energy poverty. However, it is not properly coordinated (Bale et al., 2013; Webb, 2015) since not all actors have adequate levels of information, awareness, and training, especially in public administration (Butler & Sherriff, 2017; Claude et al., 2017; Elia & Margherita, 2018; Knuth, 2019; Martiskainen et al., 2018). Moreover, the relationships between climate change issues and energy poverty are often misunderstood (Santamouris, 2016; Schaffrin & Reibling, 2015). The hybrid nature of social entrepreneurs might effectively mediate in such a fragmented network while future transition literature studies might focus on the agency of actors, strategic niche management, transition management, and multi-stakeholder partnerships theories.

Third, the interventions by social entrepreneurs examined by researchers we identify reveal an opportunity to explore further the domains of energy efficiency, social housing, and green retrofitting as practical solutions to tackle energy poverty that different

actors may develop in the energy poverty network. Beyond dominant approaches focused on income-based solutions, more user-centred approaches, humanizing development, and co-innovation with vulnerable consumers are more aligned to the complexity of the problem (Boni et al., 2016; Claude et al., 2017; O'Brien & Hope, 2010). Energy empowering activities may be beyond the traditional approaches but may have more impact in the long term on tackling energy poverty (Datta & Gailey, 2012; Hanke & Lowitzsch, 2020; Pareja-Cano et al., 2020).

The fourth implication is that bottom-up public policies could promote innovation and energy efficiency in a more inclusive way (Okkonen & Lehtonen, 2016). There is a lack of a defined global legal environment, with a mixture of competencies between several levels such as regional and municipality policies in Europe to combat climate change and social inequalities (Fu et al., 2014; Karlsson, 2016; Patkós et al., 2019; Power, 2018; Streimikiene & Balezentis, 2019; Webb, 2015). European energy poverty policies focus mainly on consumer protection, financial interventions, energy savings measures, energy efficiency and renewable energy development, and information provision (Kyprianou et al., 2019). However, those policies could be improved by integrating social innovation aspects through the insights from bottom-up initiatives from other actors working with higher proximity and allowing the empowerment of the vulnerable communities. The high number of papers found in the review that include policy insights reveals a perceived lack of control and weak leadership of the problem. The responsibility for tackling energy poverty seems to be considered to fall to the public sector, but this focus of responsibility may explain the isolation of community initiatives in promoting bottom-up public policy creation (Picciotti, 2017). Future studies on the co-responsibility of actors could promote the replication of good practices.

Additionally, no study is without its limitations. First, the selection of the keywords might have left out initiatives that may also respond to the same concept but do not appear in this research and might have been overlooked. Second, excluding articles from non-impact journals, conference proceedings, or languages other than English limits the inclusion of all relevant articles to ensure quality (Okoli, 2015). Moreover, we point out that hidden local social innovation or entrepreneurship realities are currently happening and emerging in social innovation niches in practice. Most of the relevant and more innovative

ones (as Ashoka referred to in section 1) are still not research-driven and subject to the study of energy poverty or social innovation/entrepreneurship scholars.

Despite the limitations, we have systematically explored the state of the research in the intersection of social entrepreneurship, social innovation, and energy poverty, which is expected to increase in the energy transition context in a multi-actor and multilevel approach (Jenkins et al., 2020). While we have found very little social entrepreneurship research examining the energy poverty field and only a few studies engaging with related concepts, theories, and perspectives, we have also identified areas that deserve further scholarly attention. Addressing questions of "what is next" for the nexus between social entrepreneurship and energy poverty scholarship and defining patterns and categorisations in the review may help state several avenues for research.

Further research on private (or public-private) interventions in energy poverty should help design better-informed public policies. Proximity and an understanding of the context by social entrepreneurs are a source of social innovation that can provide new lenses and valuable ideas for policymakers to develop energy poverty strategies. The review highlights the lack of an appropriate framework for analysis and action to tackle energy poverty through harmonized approaches to clear policy guidelines. In this sense, much of the existing literature on energy poverty focuses on the early stages of the process (e.g., objective, and subjective indicators (Belaïd et al., 2020; Dineen et al., 2015), identification of vulnerability (Butler & Sherriff, 2017) or the use of smart metering (Boerenfijn et al., 2018). Thus, more research on interventions could pay closer attention to scaling and long-term perspectives of bottom-up innovations to significantly reduce energy poverty and not merely produce quick solutions in response to emergencies.

As Jenkins, Sovacool, and McCauley (2018) point out, transitions require more fluid, coordinated, multisectoral action to reform the various domains with high greenhouse gas emissions, such as energy (including heating) and industry, and to harmonize them in a systemic strategy that involves societal actors. Solid political incentives and more integrated programs should lead the energy system transformation to operate inclusively. Public plans and policies should respond to the multiplicity of needs, interests, and preferences of groups and people. They should consider the needs of vulnerable customers, but they could also foster actors such as social entrepreneurs who may play crucial roles in the energy transition. In this sense, policymakers could look into the multiplicity of

perspectives in energy poverty to understand the agency and effects of bottom-up interventions from social entrepreneurs and social innovators to carefully establish and implement more holistic policies that foster human-centred activities and integrate more varied information and knowledge.

Public policy on energy poverty and general poverty should co-evolve constantly with technical progress and with consideration of the views of communities. Therefore, more research should be carried out into the objectives of clear public policies toward effective and integrative interventions on energy poverty with palliatives and structural approaches to help formulate solutions to the root causes of energy poverty. In this field, the bridging role of social entrepreneurs between vulnerable groups and politicians could provide new avenues for research in energy poverty with empirical evidence to enable human-centred aspects to be reflected in regulations and legislation in energy and other disciplines.

More research on energy justice and social entrepreneurship may help develop the framing of collective social entrepreneurship on a wide variety of actors, making debates less reductionist. Beyond energy justice and framing, it would be fruitful to explore other ethical frameworks in future research with a diversity of epistemological approaches and research methods. The line of research on the ethics of care would be particularly relevant for approaches to vulnerability. This study also may guide social entrepreneurs or social innovators as practitioners to minimize energy poverty in developed countries.

In summary, this review leads to the *pre-science* (Corley & Gioia, 2011)since (i) it pays attention to future emergent domains and complex problems, and (ii) it focuses on improving the relationship and communication between academia and practitioners. Collective social entrepreneurship and innovation may be an alternative, partial, and non-exclusive solution to reduce energy vulnerability.

3. Results: Bridging disconnections: narratives of collective social entrepreneurs on the energy poverty network

"The necessity of making oneself unseen to be a good listener"
el-Wardany, (2018). How to Disappear

3.1. Abstract

The roadmap to a just energy transition faces the challenge of including vulnerable households, whose number will only increase in the following years. The complex and networked nature of energy poverty invites responses from a growing diversity of perspectives and actors, among whom social entrepreneurs are increasingly notable contributors. The phenomenon of social entrepreneurship and social innovation is growingly offering responses to energy vulnerability since the hybrid and collective nature of social enterprises confer them suitable and distinctive capabilities to contribute to this multi-actor problem. This work aims to join the ongoing conversation on the collective dimension of entrepreneurship through the phenomenon of social entrepreneurship aimed at tackling the energy poverty problem.

Interviews with social entrepreneurs addressing energy poverty issues in several European countries allowed us to analyse their narratives about self-perceived roles in the energy poverty network and to understand the plurality and diversity involved. The theoretical lens of the multi-actor network frames our interpretations. Narratives that construct social entrepreneurship as a bridge between actors in the energy poverty network provide evidence of the potential coordinating role that social entrepreneurship can play in fragmented networks -characteristic of complex social challenges as energy poverty- through the combination of both its collective and hybrid defining dimensions.

3.2. Introduction

As pointed out by the EU Energy Poverty Observatory (EPOV) (Bouzarovski et al., 2020), in 2018, 37.4 million people were unable or could not afford to keep their homes warm in the European Union, thereby experiencing energy poverty. Although some progress has been made towards addressing energy poverty through holistic approaches (Day et al., 2016), it is a complex, systemic, and multidimensional problem (Waddock et al., 2015)

Therefore, non-structural and one-dimensional solutions, such as those focused on the availability of energy itself (the electric bonus is a clear illustration of this one-dimensional perspective), are not coherent with such complexity, in contrast to solutions based on more holistic perspectives, such as vulnerability and capabilities-based approach (Day et al., 2016c; Middlemiss et al., 2019), or the perspective of trust to reduce the "we versus them" logic enhanced by in-group interactions in complex social problems (Grossmann et al., 2021). As Day et al. (2016: p,255] indicate, "[*u]nderstanding energy use in the capabilities space also provides a means for identifying multiple sites of intervention, including some areas that are currently largely overlooked*".

Such structural and multidimensionality aspects of energy poverty that go beyond individual circumstances also demand responses from the multiple actors involved in the energy poverty network (Bouzarovski, et al., 2020), which can be understood as a group of entities or individuals interconnected (Littlewood & Khan, 2018) through the implementation of any kind of activity towards energy poverty mitigation. A variety of actors, such as governments, regulators, private companies (from small and large businesses to NGOs, or civil society organisations (including consumer associations and social movements) are, consciously or not, forming this energy poverty network (Bouzarovski, et al., 2020).

It can be argued that a coordinated network coordinated (through a common aspiration or mutual interest to minimise energy poverty) may provide more effective and (formally or informally) connected responses to energy poverty and reinforce the relationship among the members (Huybrechts & Haugh, 2018) than the initiatives developed by isolated actors. The actors that form the network have a simultaneous common goal to mitigate or eradicate energy poverty but from different perspectives. Social networks are instrumental in pursuing these divergent perspectives of the vulnerable community (addressing social, economic, and environmental objectives); thus, they have

the potential to help implement multi-actor and multilevel interventions to tackle energy poverty (Nathwani & Kammen, 2019).

However, although the energy network nominally exists in so much their components are working on the problem, in practice, it is primarily fragmented, uncoordinated, and unknown to the supposed members. In other words, the energy poverty network lacks cohesion, measured as the degree of interconnections among a group of nodes (Webb, 2015). In addition, actors vary in their capabilities and aims. This creates problems, such as information asymmetry (Martiskainen et al., 2018), the use of different languages by each actor (Campos & Marín-González, 2020), or the unclear identification and role of each member of the energy poverty network. These problems trigger the need for coordination and intermediary capabilities (Smith, 2007). The network may be an effective tool for alleviating energy poverty where all the voices can express their views and proposals (Bale et al., 2013; Webb, 2015).

Following this line of inquiry, we focus on the role of one actor in the energy poverty network: the social enterprise, that -defined simply- are organisations seeking business solutions to social problems (Thompson & Doherty, 2006, p. 362) and involving innovation to pursue opportunities to promote social change and/or address social need (Mair and Marti, 2006, p. 37). Both the collective and hybrid nature of this actor with a social mission in an enterprise format (Dacin et al., 2011; Elia & Margherita, 2018; Mato-Santiso & Rey-García, 2019; Mitzinneck & Besharov, 2019; Montgomery et al., 2012) renders a variety of resources, skills, and perspectives that may play a crucial role in the development of networked responses to energy poverty through more spaces for interventions emerging in both deliberate and non-deliberated interaction (Martiskainen et al., 2018, Boerenfijn et al., 2018; Sahakian & Dobigny, 2019; Webb, 2015)

Social enterprises are increasingly inhabiting the landscape of the energy poverty network (Hiteva & Sovacool, 2017). Some projects from the Ashoka and the Schneider Electric Foundation program to support social innovations in energy poverty in Europe (Ashoka and Schneider Electric Foundation, 2019) or the fast development of energy communities promoted by European energy policy to encourage local generation (Huybrechts & Haugh, 2018; Reis et al., 2021), clearly illustrate the multiple forms that this phenomenon may adopt.

The growing interest in social entrepreneurship issues within *energy social science* calls for further exploration of the responses from social enterprises to meet social needs, such as tackling energy poverty (Martiskainen et al., 2018). However, most of the social entrepreneurship initiatives in energy poverty (Ashoka and Schneider Electric Foundation, 2019; Ecoserveis, 2017) are under-researched by energy poverty scholars from a social entrepreneurship approach (Creutzfeldt et al., 2020; Hiteva & Sovacool, 2017).

Even though social entrepreneurship has also been questioned from the traditional energy paradigm mainly focused on technical and economic fixes (Frigo, 2017) or because of commercial uncertainties (Silvestre & Ţîrcă, 2019), research is increasing upholding views of alternative business actors in energy poverty in spaces of misrecognition, which require broader interpretations and interventions beyond the large and dominant actors such as the energy corporations (Bouzarovski & Simcock, 2017).

Remarkably, one of the features of social entrepreneurship is its hybrid and collective nature (Montgomery et al., 2012), referring to the role those social enterprises play while pursuing their social mission to facilitate collaboration among the plurality of actors involved in the social problem. The collective perspective of the role of social entrepreneurship in building networks has been emphasised in social entrepreneurship (Dufays & Huybrechts, 2012; Montgomery et al., 2012). Moreover, as (Shaw & Carter, 2007) highlighted, a distinctive feature of social enterprises would be their embeddedness in the local community networks. Beyond embeddedness, collective social entrepreneurship implies that the social entrepreneur may be an individual but mainly a coalition of actors (Montgomery et al., 2012), often reflected in cooperative models (Huybrechts & Haugh, 2018). In the increasing energy cooperatives literature, the emphasis on the collective dimension is very explicit. However, few scholars have established a fruitful dialogue between social entrepreneurship and energy poverty; this dialogue, and notably the collective perspective of social enterprises (Huybrechts & Mertens, 2014) and their nature of "hybrid organizations" that combine different goals and logic plurality at the core of their activities (Bauwens et al., 2020) may resolve the disembeddedness of energy poverty networks.

We intend to fill this gap through the perspective of social entrepreneurs of the energy poverty network. To elucidate how social entrepreneurs perceive and experience their role in the network derived from their collective and hybrid nature, we examine

narratives of social entrepreneurs in Europe about their experience in trying to provide solutions to energy poverty.

Energy poverty is a rapidly moving field, with increasingly diversified viewpoints across the academic spectrum (Middlemiss et al., 2019). However, the growing attention to the energy poverty network at the policy level has not been reflected in research (Gangale & Mengolini, 2019). This work contributes to the field by understanding the role of the collective and hybrid nature of social entrepreneurship in responding to energy poverty in Europe through the lens of the network. By examining the experience of social entrepreneurs in the energy poverty network, we hope to expand the boundaries of the field to envision more holistic responses to energy poverty. Responses generated from a broad and inclusive network of actors may be more likely to be accepted, implemented, or normalised (Turnheim et al., 2018). This in turn contributes to reinforcing the multi-actor dialogue issue, rarely addressed in the energy poverty literature, except for some research on advocacy for new emancipatory narratives that reveal the unjust social provisioning of essential services (Jenkins et al., 2020).

The remainder of the paper is structured as follows. In the next section, we present the theoretical background concerning energy poverty and social entrepreneurship context and the networks theory. Then, we explain the qualitative methodology utilized to collect and interpret data from in-depth semi-structured interviews with social entrepreneurs. Finally, our results are reported and discussed, together with a proposal for future lines of research.

3.3. The collective action of social entrepreneurship in the energy poverty network

This section delves into the collective dimension of social entrepreneurship from a network perspective drawing from the critique to the general narrative of the heroic social entrepreneurs (Drakopoulou Dodd & Anderson, 2007) as individual *do-gooders*. Dey and Steyaert (2010) identify three "negative" effects in the individual only dimension of social entrepreneurship: first, instead of the individualistic vision of the first entrepreneurship studies, it contains the messianic social purpose; second, social entrepreneurship may not be ideologically neutral but rather a version of neoliberalism (Nicholls & Teasdale, 2017); and third, it focuses on the purpose of the initiative and not on the entrepreneur's

characteristics. Instead of a utopian vision, we situate the social entrepreneur of systemic change within a context that passively awaits and allows him to make the change. This individualistic approach invites the inaction of the rest of the actors evoking the non-need for participation, activism, commitment, obligation, austerity, and work. Only managerial solutions of social entrepreneurs would make possible a better world (Dey & Steyaert, 2010).

In social entrepreneurship research, the collective entrepreneur has overtaken the heroic individual to define such a phenomenon (Montgomery et al., 2012). Although social entrepreneurship is already a mature field (Gupta et al., 2020), there is neither a universal definition nor a single narrative of social entrepreneurship (Mair & Martí, 2006). The collective approach to entrepreneurial activity is pursued by communities (Bauwens et al., 2020; Peredo & Chrisman, 2006), and disconnected conversations about entrepreneurship as collective action begins.

Relevant literature on social entrepreneurship enhances the diversity of perspectives about the collective dimension of social entrepreneurship in two fields: social movements and social networks (Edwards et al., 2009).

Social movements definition includes the concept of networks, informal interactions, and plurality, imbued with the idea of conflict on a shared identity (Diani, 1992). Framing theory is linked to social movement's dynamism to generate, disseminate, and countermove meanings (Benford & Snow, 2000). Collective action frames comprise interactive discursive processes to mobilise supporters and demobilize opponents. Studying the collective memory language in narratives is developed with the experience of the community (Czarniawska, 2004).Previous literature on social entrepreneurship approaches the framing dimension limitedly in social entrepreneurship (Hervieux & Voltan, 2018). This study highlights the challenges of incorporating all the actors in the politics of speech, focusing on including adversaries.

Moreover, collective action is crucial in socio-institutional dynamics, as illustrated by social movements' role in voicing expectations and creating visions (Martiskainen, 2017). protesting, demanding solutions, mobilising public opinion, and lobbying for stricter regulations (Campos & Marín-González, 2020). The collective action of social entrepreneurs is influenced by their capacity to identify potential (antagonists) allies and work for (de) mobilizing them. The agency of social entrepreneurs could be related to

building the vision of the problem and the change needed, drawing together actors to learn together, and making that vision reality (Vasquez-Delsolar & Merino, 2021). Wider dissemination needs a common goal and a shared vision among different actors to speak the same language and cultural lens (Butler & Sherriff, 2017).

Networking is a critical skill in the process of social entrepreneurship (Dufays & Huybrechts, 2012). The end of the section presents five concepts closely related to networks as the framework from which we will interpret the results: cohesion, legitimacy, trust, composition, and relationships.

First, from a structural standpoint, cohesion refers to the general level of connectedness, ties among actors, and the public's "inclusiveness" (Martí et al., 2017). In the emerging field of energy poverty, non-formalised networks constructed by adopters of hybrid organisational forms are blossoming (Huybrechts & Haugh, 2018).

Second, the type of legitimacy carried out by social entrepreneurs may shape the interaction patterns between actors in the energy poverty network (Vasquez-Delsolar & Merino, 2021). The legitimacy of social entrepreneurs and communities may be pragmatic, moral, and cognitive (Suddaby et al., 2017). Social entrepreneurs are perceived as morally self-legitimised and having other-regarding focus and values. Their perceived legitimacy and self-reflection may influence the dominant actors and topics, which is essential for the survival of social entrepreneurship (Nicholls, 2010). However, the change may be subtle (not evident) because the social entrepreneurs are niche (even marginal) actors (Vasquez-Delsolar & Merino, 2021).

Interactions between those affected by energy poverty and the other actors are mediated by the relational concept of trust (Grossmann et al., 2021). The networks are essential for entrepreneurship growth (Dodd & Anderson, 2007) and may consolidate legitimation in hybrid organisations as social enterprises towards plural audiences (Huybrechts & Haugh, 2018). Social entrepreneurs' mixed hybrid and collective abilities may help manage the multiple tensions and different level audiences in the energy poverty network (Nelson & Jenkins, 2006).

Littlewood and Khan (Littlewood & Khan, 2018) highlight the study of the composition of the networks and the focus on the position of a particular actor in the network. The embeddedness of the social entrepreneur, which is in turn affected by geographic factors, has implications for their selection of social entrepreneurial pursuits.

When social entrepreneurs are confronted with scaling, they are more likely to go deep than bottom-up (Smith & Stevens, 2010).

The relationship among network members is explained by the *arrows* that connect the different members and how the degree of interaction of two individuals interacts directly with the strength of their tie to one another. The strength of a tie is a combination of the amount of time, emotional intensity, intimacy, and reciprocal services of the tie. The frequency of contact measures the strength of the tie. About the role of weak social ties in diffusing ideas and information, Granovetter (1973) points out that such ties are assumed to be positive and symmetric. Still, a comprehensive theory might require discussion of negative and asymmetric ties. *Weak ties* are more likely to channel novel information and innovate than *strong ties*. Therefore, the strength of *weak ties* is not about the number of connections. Instead, it lies in *weak ties*' ability to reach a broader, and potentially more heterogeneous, set of information sources.

Bridging is considered a skill of social entrepreneurs by some scholars (Dufays & Huybrechts, 2012). Bridging agents in networks show sufficient evidence to confirm that determined actors play a crucial role in connecting the activities of other network members, primarily to support isolated and less powerful initiatives that could be of help if scaled (Giudici et al., 2018; Jarzabkowski et al., 2012).

3.4. Method

To examine the role of social entrepreneurship in the networked nature of energy poverty from actors' perspectives, the study was guided by a hermeneutical-phenomenological approach (Smith & Osborn, 2015) to inductively elicit and interpret the experiences, perceptions, and feelings lived by social entrepreneurs as agents participating in the network of energy poverty. As Van Manen (2017) points out, phenomenology does not address the meaning of the words of participants but the experience as they live it. Thus, rather than intending to describe the role of social entrepreneurs in the energy poverty network, we focus on interpreting their lived experiences to provide thick descriptions of the construction of meanings in the energy poverty network. The interpretative phenomenological analysis uses reports about informants' experiences to understand how people create meaning and experience their lives (Butler & Sherriff, 2017). Thus, this approach involves a two-stage interpretation process, a double hermeneutic (Smith &

Osborn, 2015), since the researchers are trying to make sense of participants' narratives, trying to make sense of their personal and social world. Interview-based approaches are used for data collection to access the narratives of social entrepreneurs on their lived experiences in the network of energy poverty. In narrative analysis, the text becomes free from agents and gets relevance beyond its immediate context; thus, narratives exhibit, elucidate, and reveal explanations of phenomena (Czarniawska, 2004).

We aimed to extract and interpret the subjective point of view of the informants to understand the phenomenon through their discourses from a hermeneutical-phenomenological approach (DiCicco-Bloom & Crabtree, 2006): a circular work of reading, re-reading, interpretation, and reinterpretation of the narratives of informants (Laverty, 2003) was carried out throughout the whole interviewing stage.

We used purposeful sampling to select informants. Participants were initially recruited from the list of entrepreneurs of the Ashoka and Schneider Electric program called "Social Innovation to tackle energy poverty in Europe[1]" because the contest brought together and gave visibility in Europe to the most innovative initiatives of social entrepreneurship in energy poverty. Then, we identified relevant actors for the research question through snowball sampling. This sampling approach to select a relatively homogenous population has been considered appropriate (Suri, 2011) to provide an in-depth understanding of a phenomenon. Two criteria guided the selection of organizations: 1) a mission related to tackling energy poverty is central, and 2) a European origin. All the interviewees held a position in the organization as founders and managers. Interviewees varied in age, sex, academic background, type of organisation, and position (see Table 3-1. Description of the Interviewees). The methodological analysis did not explore the potential link between the narratives and the organisation type that could be a future line of research.

Table 3-1 Description of the Interviewees

Number	Name of Interviewee	Studies	Sex	Position	Organisation Type	Country
1	Marcelo	University	M	Employee	Cooperative	Spain

[1] https://tackleenergypoverty.ashoka.org/en/social-innovation-tackle-energy-poverty

2	Celia	University	F	Head of departmen t	Foundation	Spain
3	Pepelu	University	M	employee	Association	Spain
4	Soledad	University	F	Director	Social Movement	Spain
5	Arancha	University	F	Cofounder	Association	Spain
6	Steve	University	M	Founder	Association	Belgium
7	David	University	M	Founder	Association	Cheque Republic
8	Toto	University	M	Founder	Cooperative	Italy
9	Coello	University	M	Founder	Social Company	Italy
10	Julee	University	F	Founder	Social Company	UK
11	Koki	University	M	Founder	Cooperative	France
12	Rocio	University	F	Founder	Consultancy Company	Spain
13	Paco	University	M	Founder	Association - NGO	France
14	Clara	University	F	Employee head dept.	NGO	Germany
15	Katherine	University	F	Employee – head of legal dept.	Consumer Association	Greece
16	Narbona	University	F	Employee	Cooperative	Spain

Elaborated by author

When inviting the participants, the research purpose was explained (Sovacool et al., 2018), and the informants signed an informed consent form that promised confidentiality and anonymity from the author. The interviews were performed flexibly and dynamically, following a conversational style with open questions focused on participants' experiences, as required by an inductive phenomenology approach (Laverty, 2003).

After the participants finished telling their background, the interviewees discussed all the topics included in the interview guide, namely their perceptions of energy poverty and social entrepreneurship, the business model of their organizations, and, above all, their views of the energy poverty network. As new themes emerged throughout the interviewing process, they were included in the following interviews. Interviews lasted between forty minutes and one hour; three were conducted face-to-face and the rest online (due to the COVID-19 confinements or to avoid geographical distance between the informant and the researcher). Online platforms were accepted and allowed a quieter environment from the entrepreneur's home, free from background noises and comfortable for participants. In this data-gathering process, relevant information linked to the different experiences of the informants emerged. This methodology reached saturation after 16 interviews. All interviews were recorded and transcribed.

The individual transcripts were read and re-read, compared, coded, categorised, engaged in detailed and repeated readings, and subsequently interpreted guided by thematic analysis of the texts through categorisation, abstraction, integration, and iteration exercises. (Lincoln and Guba, 1985, Riessman, 1993). The themes generated in the interpretation process were used to structure the results, integrate excerpts to capture the essence of the identified themes and increase validity and traceability (Smith and Heshusius, 1986). As an interpretative work, no attempt was made to provide a map of proposals from social entrepreneurs, to quantify which discourses were most prevalent among the participants, or to classify participants, but to offer thick descriptions of the variety of meanings, horizons, and perceptions of the phenomenon of social entrepreneurship in the energy poverty network.

3.5. Results

Three narratives emerge from the data on how social entrepreneurs experience the energy poverty network and their role in it. Two of them correspond to the emphasis placed on the commercial or the social dimension of the social enterprise. We label them respectively the *business manager* and the *social activist* narratives. In contrast, a third narrative, which we label the *bridge-builder,* reflects the experience of the collective and hybrid nature of the social enterprise through its role in making connections across the energy poverty network (see Table 3-2 for a summary of the results).

Table 3-2 The plurality of narratives in social entrepreneurs in energy poverty

Narratives	**Main elements**	**The dominant approach to the energy poverty network**
Business narrative	-Commercial and business perspectives in the centre -Individual and self-interest view -No reflexivity on the energy poverty problem -No awareness of the energy poverty network - Business discourse - No consideration of the needs of minorities affected by energy poverty	Lack of awareness of network – inexistence of the rest of the network
Social activist narrative	-Social perspective in the centre -Collective action -Conflict, attack, manifest opposition against the energy system in oligopoly	Implicit exclusion of some members of the network

	-Social movements discourse -Advocacy and lobby in the centre -Defence of the right to energy -Emphasis on framing social problems -Government and companies are seen as adversaries (culpability) -Denouncement of asymmetry of information	
Bridge builder narrative	-Social perspective in the centre -Reflexivity to make the solution happen – envisioning -Collaboration and intermediation -Trust -Mixed discourse: business, social transformation, and advocacy -Vulnerability in the centre - Coordination and dialogue	Collaboration and mediation to include all members of the network

Author elaboration. We offer the list in the spirit of enumerating the elements that may impact the social construction of the energy poverty network in the energy transition.

3.5.1. The business manager narrative in energy poverty

This narrative reveals a social entrepreneurship experience with a clear commercial priority, showing little reflection on the roots of the energy poverty problem and its collective and networked nature. Corporate vocabulary and financial benefit characterize this narrative used by only a few participants, while the reference to vulnerability is a secondary benefit.

Rocio exemplifies this role. When asked about her objectives, she says: "One of the things at the end of the day is having more and more clients and affiliates". Following this logic, clients are the ends, not the means, of the company's services. This is the narrative of self-identified social entrepreneurs who believe that energy poverty may be solved mainly by commercial ambitions. Rocio indicates: "In the end, you have to find a balance. (...) You can help a lot, but it also has to be a sustainable company; otherwise, we don't do anything". This narrative shows no explicit attempt to consider the perspective of minorities affected by energy poverty. Ethical values are not the priority motivation in this narrative that overlooks the diversity of actors forming the energy poverty network and their role in it.

David's initiative that participated in the Ashoka program shows an early stage of development. As an example of the secondary positioning of energy poverty in his vision, he argues: "*We are lobbying for energy efficiency, and energy poverty should be*

intertwined with energy efficiency". This narrative could be influenced by the young, unclear, and emerging status of the energy poverty legislation. This result connects with the call for reflexivity and legitimation when dealing with social problems through system transformation (Vasquez-Delsolar & Merino, 2021). The weight of the commercial priority reflects the paradoxical nature of social entrepreneurship in dealing with complex social problems (Mitzinneck & Besharov, 2019).

3.5.2. The social activist narrative in energy poverty

This narrative shows active participation in the network and primarily expresses the central idea of conflict and opposition, exhibiting elements of struggle and identification of adversaries. The *social activist* narrative does not involve a perception of entrepreneurship associated with the constellation of words usually related to the business arena, such as strategy, profit, providers, corporate purpose, business model, clients, or customers. This narrative predominantly shows opposition to the energy system and sees their work as an attack against two dominant actors in the system: corporations and governments. Following the idea of corporations as enemies to fight, this narrative even rejects the concept of social business. Informants who use this narrative do not see themselves engaged in any business activity. Koki rejects the idea of social entrepreneurship in his background:

"I feel that we shouldn't be talking about entrepreneurship tackling or taking care of social issues. … I´m afraid I have to disagree that businesses deal with social issues."

Emergent niche logics inevitably trigger social conflict, and complex problems carry opposition against incumbents (Rittel & Webber, 1973). This narrative aligns with the sense of moral outrage toward corporations and struggles against the system in social movements literature (Campos and Marín-González, 2020; Benford and Snow, 2000; Melucci, 1980).

Soledad reveals key social movement elements*:* "what we do is (I believe) that we press or pressure the administration to guarantee our rights". The government is considered to be the main guarantor of the rights of the energy vulnerable. Still, at the same time, this narrative justifies the exclusion of this actor from the energy poverty network: "it (the Administration) is not part of the fight against energy poverty. Our role, above all, is to point out when something is not working and make proposals and try to get the administration to implement it".

This narrative attributes corporations to the main cause of the problem associated with their position of power, which does not allow them to be part of the solution and the network. Arancha shows this *struggle* by emphasizing that "[t]he companies that generate fuel poverty cannot be the ones in charge of covering it up or disguising it with their corporate volunteering". Similarly, Soledad says: "we believe that they cannot solve this problem because for us they are the ones who are mainly responsible". Marcelo points out the corporations' power position, indicating that "since the retailers control 75-80% of the market, they are not interested in optimizing and reducing energy prices". Therefore, for social action-oriented approaches, energy poverty results from the current energy system model, and the terms "social" and "companies" do not match. Arancha wants an energy culture "that makes energy accessible to all people, that it is not a luxury good as it is now". The energy model demands a complete transformation of a status quo that favours specific interests.

This narrative focuses on framing social problems and the need for measurement and evaluation. Social innovation is perceived as very external to their life experience. As Soledad clarifies: "Social innovation sounds very corporate to me; we are more social activism". Elements of the new social movement theory (Melucci, 1980) emerge through the search for realigning existing power balance, cultural differences, uneven communication skills and information asymmetries (Hervieux & Voltan, 2018). NGOs, associations, or low-income communities may practice activities that might be described as an enterprise, but they will never describe them as companies (Bauwens et al., 2022).

In this more radically transformative narrative, information asymmetry between the consumers and the oligopoly dominating the energy system is something to fight against. Trying to understand bills from the perspective of a vulnerable family, Arancha criticises the fact that they are "a puzzle and a hieroglyphic that nobody understands…A bill is something that arrives at my house every month and I pay it and I don't question" Also, Marlene points out: *"It's also the different backgrounds that are important, I think, for this project"*. Earlier research argues how weak actors suffer from adverse selection and moral hazards (Joskow, 2007). Social activist narratives struggle against the problems of the current energy system: the regulatory obstacles, information scarcity and socio-cultural factors because those barriers often prevent socially excluded groups from accessing support (Bouzarovski & Petrova, 2015).

This narrative provides in-depth responses and illustrates advocacy and fighting for people suffering energy poverty. Katherine expresses the main concern: “we want to ensure that the consumer and the rights of consumers are in the first line in our government”, and by Soledad: “This change of model has to be respectful of human rights.” This narrative is characterised by low market impact levels and is strongly motivated by ethical values. This idea is again corroborated by the social movements’ literature focusing on the opposition to the capitalistic establishment and the focus on advocacy and policy-making insights (Hess, 2018). Advocacy and policymaking may involve multi-actor coalitions for decision-making. Also, the politicians who access these coalitions may have more significant social support and legitimation (Vasquez-Delsolar & Merino, 2021). However, the powerful position of energy companies may weaken the implementation of social energy policies and energy democracy.

3.5.3. The bridge-builder narrative in energy poverty

Alongside the two previous narratives that illustrate both ends of the commercial-advocacy continuum of social enterprises' role in the energy poverty network, the third type of narrative emerges from data representing a middle position: we label it the *bridge-builder narrative.* This narrative revolves around four key elements to develop cohesion from a network perspective: reflexivity, legitimacy and trust, and coordination.

First, the bridging narrative shows reflexivity to make solutions happen. The inclusion of all members in the network symbolises the identification of a clear objective and deep thoughts on the role in the system, besides the urgency to act. Steve “would call [him]self more a social innovator than a social entrepreneur. I must use the skills of an entrepreneur to find a solution or make the solution happen.” Against the opposition to certain members who emerged in the social activist narrative, the bridging narrative outlines the differences among actors as a challenge to join forces. The inclusivity among network members emerges from Coelho´s narrative: “one thing that I think is very important is trying to develop the possibility better to do networking between different kind of entities like companies with public administrations and so on. …. I think this could be the key to a better networking process.”

Second, legitimacy and trust are beyond the mere economic support to establish a relationship in home-related activities. After an extended experience in NGOs, Paco

mentions “the cost of establishing links with companies with whom we will create relationships of trust to reassure them”. Legitimacy is a recurrent theme in social entrepreneurship literature requiring actors to carry shifts in logic. A common goal may provide legitimacy to actors.

Also, trust is linked to legitimacy in this narrative. Paco´s initiative was created in the context of energy efficiency and housing. He emphasizes trust’s role in connecting different actors with the vulnerable: “*I [he] will create this relationship of trust between associations that identify the public money that exists and the companies that can deliver*”. Koki calls for a move beyond simplicity: “*I don´t want to be the bad guy; I just want to understand the complexities*”. Energy poverty puts people in a situation of vulnerability which relates to an essential aspect of their lives, requiring trust and interconnection for people’s social relations (Grossmann et al., 2021, Middlemiss et al., 2019).

Third, the narrative of Steve reveals the activation and coordination of the energy poverty network. His accent on dialogue and negotiation to improve relationships is revealed: “Yes, there are solutions. I think most of them have to be reached by negotiations. And having a long relationship with these other stakeholders so that they know exactly what you are standing for”. Steve describes his experience at the meetings to “discuss what's our vision, what we should ask of the government…We address, like existing solutions, how they can be made better.” The diversity of logic of social entrepreneurship enables actors to make sense of their ambiguous world (Dufays & Huybrechts, 2012). Their awareness of contradictions allows them to intervene in fundamental changes from a reflection on meanings and critical dynamics (Suddaby & Greenwood, 2005).

This bridge-builder narrative is critical against the system but with an inclusive perception of all actors. Toto, the founding member of an energy cooperative, insists on the need for transformation through solidarity and inclusivity: “We have to rethink the system, rethink it with these problems and find concrete solutions because the system must be inclusive.” In this line, Koki, also representative of a cooperative, confirms: “it is all about actors that are complementary to me” and “we don´t intend to replace what the State is supposed to be doing”.

Marcelo highlights the active communication and adequate coordination of frequent meetings for increasing the network connection: “It helped me to see the problem from a systemic point of view and, really, from the complexity it has… this is a global problem

that if we work on it locally, and in coordination with other sectors included within the chain we will be able to provide a solution." In other words, Steve insists on the benefits of a strong network: "We have a big network. We come together twice a year. To discuss our vision and what we should ask the government. Mostly the cabinet of the minister is also in this meeting. Our role is to be the spokespersons for people in poverty. Also (they) have a voice in this meeting. And we do prepare them for this meeting." He describes a 20-year practise of building a solid network that includes the voices of vulnerable communities and tackled the challenges of the consensus of actors with different backgrounds and levels of dynamic power situations.

In sum, the bridge-builder narrative focuses on the people affected rather than on the economic perspective of the organization, and on the capacity of social enterprises to direct situations of vulnerability to the appropriate channels for policymaking. While advocacy is not the main priority in this narrative, it is part of the concerns that inform it.

3.6. Discussion: a network thinking

Overall, our results reveal how the diversity of narratives of social entrepreneurs (Shaw & Carter, 2007) conforms to different connection approaches within the energy poverty network. Three main implications may be derived from interpreting narratives of social entrepreneurship in energy poverty from network lenses, as explained below. First, our results allowed us to identify both aligning or opposing positions regarding the composition of the members in the network, drawing from the literature on social movements and collective action. Second, the narratives of social entrepreneurs invite us to pay attention to *weak ties* as an instrument to reinforce the relationships in the fragmented energy poverty network. Finally, the experiences on the role of social entrepreneurship in the network dynamics of energy poverty have policy implications since they underpin the opportunity for the interaction of actors through mechanisms such as roundtables.

3.6.1. Ignoring the network, excluding some members, or aligning positions in the energy poverty network

The energy poverty network is formed by individuals, institutions, and other organised entities that interactively influence each other and are simultaneously shaped by the

complexities of the energy system. Overall, we argue that the recognition of diversity by the network members may make the social part appear in a collective phenomenon (Latour, 2011).

In the *business manager* narrative, the limited presence of values and required social skills to manage social needs reveal decisions that are blind to the network perspective due to the profit logic as dominant. The stress on customers rather than on vulnerable communities might even contribute to creating more vulnerability, despair, frustration, stigmatization, and inequality. In addition, the ignorance or indifference of the energy poverty network might provoke distrust from some actors with more social visions, thus hindering the development of ties between the network members.

On the other hand, the *social activist* narrative aims to galvanise support for political pressure (like a *networked* pressure group). This political consideration seeks to alter the underlying social order. For the social narrative, the liberalisation of the energy sector is one of the primary sources of the energy poverty problem, implying companies as adversaries and their exclusion from the energy poverty network. Therefore, network cohesion is a challenge. However, following the notion of amplification from social movement theory as "the idealisation, embellishment, clarification, or invigoration of existing values or beliefs" (Benford and Snow, 2000b: p.624), the framing of all actors' roles may evolve to amplify their participation in the energy poverty network to become a more cohesive and coordinated space (Giudici et al., 2018). Central to framing is the need for categorisation and belongingness to the same group through collective memory (Czarniawska, 2004). In this sense, the *social activist* narratives might contribute to shaping the network as that shared place to belong that is formed by all entities fighting against energy poverty and not only by intergroups. Social movements are paramount to advance the advocacy efforts in energy poverty and maintain tensions that require cooperation and critical approaches, thus benefitting from balancing both these different views of the responsibility of the actors in their practices. Social movements are paramount to advance the advocacy efforts in energy poverty and maintain tensions that require cooperation and critical approaches, thus benefitting from balancing both these different views of the responsibility of the actors in their practices.

Lastly, the *bridge-builder* narrative insinuates inclusiveness and translation among all empowered actors and, therefore, may play a facilitator role in the institutionalisation of

the energy poverty network by proposing alternatives employing their intermediation and hybrid resources to enable interactions (van der Waal et al., 2018). This intermediation would allow actors to connect and share, resources, good practices and information. It is less politically oriented than the *social activist* narrative, and it is rather inward-looking and concerned with building the sector (Saebi et al., 2019). The construction of a strong network of energy poverty requires actors who may (i) envision the desired change, mobilise others accordingly and learn collectively about those experiences (Vasquez-Delsolar and Merino, 2021), and (ii) deal with both commercial and social movements perspectives to access novel territories by investigating the tensions among the members. The language of the *bridge-builder* narrative contains plenty of references to both commercial and social concepts in contrast to the emphasis and the opposition to enterprise and market embedded respectively in the *social activist* and the *business manager* narratives. The role of rhetoric as strategic use of pervasive language is critical for shifts in underlying traditional logic and to initiate and drive change (Suddaby & Greenwood, 2005; Yanow, 2000).

As a translator and intermediator, the *bridge-builder* narrative reveals an inclusivity approach to the network. Seemingly, narratives recognising social issues reveal higher maturity levels and reinforce the meanings when stronger links are tied to socially deprived communities and place the social dimension first (Dawson & Daniel, 2010). In an era of unprecedented change where our human and technological systems have become increasingly interconnected and human vulnerabilities in energy are becoming more pronounced, it may be argued that the relationship of entrepreneurial initiatives within the energy poverty network may be inclusive (Waddock et al., 2015). The experience that emerges from bridging narratives provides evidence for this argument.

All narratives have a common mission to tackle energy poverty. However, framings differ on how to achieve strategic objectives, what images give to the public to mobilise adherents, and how to acquire the necessary resources to transform old beliefs of energy poverty. Therefore, the degree of inclusivity of the network members may change through the process of amplification in the network in the dynamic transition process to build on self-reflection and self-critique of the members and to identify aligning and denouncing narratives that may require intensive research over time (Huybrechts & Haugh, 2018).

3.6.2. Weak ties as bridges to coordinate a fragmented energy poverty network

The salience of the relationship of members in the network varies across narratives. Business and social activist narratives are less oriented toward the connection of the energy poverty network, while the bridge-builder narrative shows the primacy of collaboration and mediation to include all network members. Such differences have implications affecting the weak and *strong ties* of the members.

The structural embeddedness of the members of the network and the quality of social ties shape action by creating and accessing opportunities. In the social network theory, arm's length, or distanced ties (*weak ties*) and more embedded ties (stronger) are essential for reciprocal social obligations and require trust and group solidarity. Granovetter (1973) stated that "the strength of a tie is a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie" (Granovetter, 1973: 1361]. There are two factors – time and similarity – that favour the strength of the tie. More embeddedness equates to less individual freedom and outside connections (Dufays& Huybrechts, 2012; Smith & Stevens, 2010).

However, identifying the structure of *weak ties* of the network may help facilitate or block organization. The degree of two individual networks interacts directly with the strength of their tie to one another (Granovetter, 1973). For creating cohesion in networks, bridges are expected to assume an important role. *Strong ties* are not bridging because they are scaling only in-depth and not up; all bridges are *weak ties* (Granovetter, 1973).

Different ties have different implications in the network. *Weak ties* are helpful for coordination. The collective social entrepreneur may have a coordinating role in the fragmented energy poverty network. Trust, translation of the terminology and diversity among economic and other forms of value to capture actual content and substance are keys to applying the energy justice framework in regular interactions (van der Waal et al., 2018). The collective social entrepreneur may build on the composition and relationships of the energy poverty network (Montgomery et al., 2012). A connector or coordinator in the network could be relevant to interpreting the phenomenon's complexities beyond the collective social entrepreneur activity with a unique look at the entrepreneur's contextualisation and role. Therefore, the findings from bridging narratives may help extend the network literature in social entrepreneurship, broadening the vision of collective

social entrepreneurs as hybrid organisations with capabilities to formalise emerging networks (Huybrechts & Haugh, 2018) and coordinate multiple actors with different lenses depending on the corresponding narratives. Bridges may assume the intermediation of the fragmented energy poverty network.

Social activist and *bridge-builder* narratives may provide in-depth responses to social entrepreneurship, but *social activist* narratives are not defined by inclusion, however, they may help make connections in the network through the amplification of the framing. One example of *strong ties* in the network that may be illustrative is the social bricoleurs. Some small social enterprises perform only localised solutions below the radar screens of larger and less proximate parties. However, such social entrepreneurs are often more difficult for researchers to identify and analyse their roles because their actions are usually based on local knowledge. Consequently, they resist broad recognition or even comprehension by governments and the media. Further, given that those entrepreneurs are less concerned with general applications, organizations that support social entrepreneurs by emphasizing scalability may fail to appreciate their contributions (Pfotenhauer et al., 2022).

With the collective lens of network theory, hybridity is characterised by *weak ties*. We argue that bridging narratives of social entrepreneurs would be considered *weak ties* in the energy poverty network with a constructive approach to minimise energy poverty by adopting the role of connectors of social entrepreneurs. Currently, there is no clear bridging position in the energy poverty network, and actors are separately embedded in their own lens according to their context.

The formalisation of the energy poverty network is a dynamic process. Therefore, it is essential to carry out an effective accompaniment that seeks to attend to the conditions of the network participants and listen carefully, to be able to see where each one is. Granovetter (1973) also indicates that bridges are temporary and the attention to the process, not only the results. This temporality coincides with the temporal solutions of social entrepreneurship (Mitzinneck & Besharov, 2019). These results confirm that social entrepreneurs act as a catalyst for collaborative projects by enforcing ties in the social network and acquiring cohesion through the commitment to tackle energy poverty (Dufays & Huybrechts, 2012) and contribute empirically to emphasise the social entrepreneurs' role in bridging different logics within social networks.

3.6.3. Policy insights – practical implications

The overall results evidence the need for more interaction through frequent roundtables with all members of the energy poverty network with the coordination (temporarily) by social entrepreneurs. Those roundtables are not institutionalised yet in all European countries, where the networks are fragmented and non-structured (Bouzarovski, 2020).

For policymakers, the collective perspective is key to understanding and developing policies that are complex, contradictory, and emotionally charged. In interpretative techniques, the first step would be calling for a diverse public forum to capture diverse experiences, meanings, and conflicting interpretations in real-world and dynamic contexts to avoid the dangers of unidimensional and static approaches (Yanow, 2000). Policies should not be instruments of exclusion but to capture plural voices in a multi-actor process integrating multiple discourses into a collective voice to influence dominant (and non-dominant) actors and building receptivity to pluralism (Huybrechts and Haugh, 2018). Policy approaches should include specific protection for such interaction spaces until the networks are institutionalised (Hess, 2018) and consider the risks of solutionism and experimentalism with the vulnerability of scalability (Pfotenhauer et al., 2022).

The collective nature and the human-centred approach to energy poverty may provide policy insights to inclusively consider the different dynamic perspectives of the actors involved as humans with feelings (Grossmann et al., 2021). The context of a just energy transition requires the institutionalisation of inclusive and holistic practices. The consolidation of the emerging energy poverty network may legitimise the role of each member, foster each advocacy effort, and help the transformation of the social entrepreneurship niche to become a more influential hybrid entity within such network (Huybrechts and Haugh, 2018). Such interaction might help a person or group adopt specific ideas that are not initially their own so that the original ideas may change by this process, raising collective reflexivity and creating a climate of enforceable institutional trust among actors as mechanisms to align exchanges (Grossmann et al., 2021; Smith & Stevens, 2010).

The Government (or, temporarily, the "bridging" social entrepreneurs as *weak ties* drawing from the network theory) could create spaces to elevate voices for inclusivity. In this context, bridging narratives of social entrepreneurs may help understand the diversity of the members' narratives, connect the *weak ties*, facilitate possible exchanges, and

integrate the policies bottom up. Dynamic networks may propose spaces for thinking about different personal and collective concerns, always with a critical and, therefore, self-critical interest (Jenkins et al., 2020).

3.6.4. Futures lines of research

Any study has limitations, such as the different cultural contexts or the impossibility to generalise the findings as the framings may change over time and across settings. We can have only partial snapshots of the more comprehensive network. However, the contextualisation embedment may enrich the views of social entrepreneurship since meaning is embedded in local communities (Dufays & Huybrechts, 2012). Also, data must be interpreted cautiously because complex social problems are poorly formulated and boundary-spanning with numerous stakeholders who bring different perspectives to the definitions and potential resolution (Waddock et al., 2015). An implication emerges for future research to analyse both the composition and the relationship in emerging national energy poverty networks and the role of hybrid figures as social entrepreneurs in the evaluation of social support and the management of relationships with others to establish a sense of belonging and a holistic vision of social issues. More empirical work should be carried out on the influence of the different actors' narratives in the process of configuration of the energy poverty and on the process of establishment of such network, its affiliations, and its ties to build a sense of interactions (Edwards, 2014). The collective dimension and the advocacy functions of the social entrepreneurs enable them as intermediaries to lead the discourse of tackling energy poverty and join forces among all the actors. The self-criticism and reflexivity of social entrepreneurs could enable and simplify the interaction with the social parts. The different sides of social entrepreneurship may be revealed to enrich their role in reinforcing the energy poverty network. Energy is everyone 's business, and talk is cheap. Let 's all talk.

4. Results: Tackling energy poverty through social intrapreneurship in large-scale energy companies

4.1. Abstract

The purpose of this paper is to present advances towards a social intrapreneurship department within energy corporations. By drawing on the literature on social intrapreneurship and stakeholder theory, we provide a conceptual proposal for an organizational structure. We build on the notion of bridging and boundary organizations, to suggest an organizational innovative structure as a social intrapreneurship endeavour focusing on the increasing salience of weak stakeholders in energy corporations from energy justice approach.

The results are presented in a conceptual process model for the development of Social Energy Department units within large energy companies, illustrating their embeddedness in both societal and company-level processes to facilitate social intrapreneurship initiatives that would alleviate energy poverty in the just transition. The paper promises novel insights at the nexus of social enterprise and organizational change. The practical applicability is particularly promising since it focuses on integrating novel units in energy companies and stimulates further research on models of social intrapreneurship to tackle energy poverty. The paper offers both practical and theoretical contributions to the stakeholder theory field with insights from social intrapreneruship and organisational stakeholder theory in the context of a specific social problem – energy poverty, energy justice and the just energy transition.

4.2. Introduction

The pathways toward the low-carbon energy transition face the challenge of being inclusive toward energy-vulnerable households, which is an issue of growing interest, particularly in Europe (R.-Petrova. Hiteva, 2013). Energy poverty refers to the difficulty or inability of a household to maintain adequate temperature conditions, as well as other essential energy domestic services, at a reasonable price, and it is estimated to affect more than 37.4 million people in Europe (Bouzarovski et al., 2020). COVID-19 may have a strong influence on the expansion of energy poverty, and therefore, this number is likely to grow (Sumner et al., 2020). If not properly addressed through an attempted resolve coordinated by all actors,

the consequences of COVID-19 may affect a greater number of vulnerable people, thus increasing energy poverty. Although there is no universally accepted definition of energy poverty, it is widely recognised that energy services, such as heating, cooling, or refrigerating food, are necessary for people's health and to enable effective participation in society (Bouzarovski & Simcock, 2017; Day et al., 2016).

Energy poverty has been predominantly attributed to the triad of insufficient income, high energy prices, and energy inefficiency, but other approaches view this delimitation as incomplete because it does not take into account those causes of a more human-centred nature (Boni et al., 2016). Moreover, given its systemic, multidimensional, and frequently invisible nature, energy poverty can be characterised as a complex problem that requires the coordinated participation of multiple interrelated actors through complex interventions (van Tulder & Keen, 2018; van Zanten & van Tulder, 2018; Waddock et al., 2015). The current institutionalized designs in energy corporations deal peripherally with vulnerable energy customer communities but fail to tap into their high potential to alleviate energy poverty. Therefore, approaches that bridge disciplines and domains may be particularly appropriate to address energy poverty issues (Sovacool, 2014).

In this conceptual work, we examine the emerging relevance of social entrepreneurship issues within the field of energy social science to provide partial solutions to tackle energy poverty (Martiskainen et al., 2018; Sovacool, 2014). We argue that social enterprises are a productive space that may provide a proper logic to build broader and more effective responses to the problem of energy vulnerability.

Social entrepreneurship is an innovation space dominated by relatively few entities with a large capacity for leveraging resources within the network (Dacin et al., 2011). Due to their limited power and resources, few social entrepreneurs have become large enough to strongly influence government and policymakers (Montgomery et al., 2012). Their agency in the economic ecosystem in the context of just energy transitions requires some clarification (Mair & Martí, 2006). As this is an innovation niche, there is a risk that it may disappear, although it could survive if such a niche reaches the necessary degree of maturity.

A greater change is needed for the majority of the energy companies to move in the direction led by energy justice frameworks (Tulder, 2018; Waddock et al., 2015). Large companies are increasingly recognised as market/technology/value innovators, although

little research focuses on their high potential as social innovators (Barnett, 2019). Perceived as resistant to change, energy companies could become proactive agents in energy transition since their power is highly influential (Turnheim & Sovacool, 2020) and they are watched closely by society, mainly because power supply is an essential service (Pérez-Arriaga et al., 2017). The resources of large-scale companies could support experimentation with social intrapreneurship models despite the traditional position of these companies regarding radical changes, i.e., being against radical change (Jenkins, Stephens, et al., 2020; Wesseling et al., 2020). In transitions, it is acknowledged that disruptive change occurs as an outcome of the various multilevel relationships existing in a specific context, where conflict exists between the dominant entity (actors, structures, and practices) and the new emerging alternatives (Araújo, 2014; Geels, 2002; Geels & Schot, 2007). There has been very little research on these two levels of the agency of company actors in transitions (Hörisch, 2015), i.e., first, on the level of the emerging niche of social intrapreneurs as innovators in energy poverty (Hiteva & Sovacool, 2017) and second, on the level of the existing large-scale energy companies (energy companies). The unique position of these companies as influential actors could transform large energy companies to help alleviate poverty (Halme et al., 2012; Turnheim & Sovacool, 2020).

We intend to respond to this need by proposing a conceptual process model for structured organisational change to implement multiactor collaboration (van Zanten & van Tulder, 2018) through integrating social intrapreneurship departments (Nandan et al., 2015) within energy companies to minimise energy poverty. The current structures within corporations, such as corporate foundations or other non-single mission departments, have very limited effects on minimising energy poverty. To date, vulnerable energy consumers continue to be the weaker stakeholders of the corporation. Specifically, we illustrate the proposal with the introduction of a new department in the organisational structure of an energy company that would deal directly with vulnerable customers, the Social Energy Department (the SED). The specific details of the business model would be designed on a case-by-case basis and are not addressed in this paper. The introduction of a new logic does not mean substitution but rather involves interaction and adaptation between actors on a gradual path towards transformation (Schot & Geels, 2008).

In the context of the energy transition, minimising energy poverty constitutes a part of Sustainable Development Goals (SDGs) 1 and 7 and such a nonbinding legal framework

is adequate to tackle energy poverty (van Zanten & van Tulder, 2018). Global goals may advance with public and private efforts (Biermann et al., 2017) and companies may fill in the gaps that states are not filling by covering the so-called *institutional voids* (Mair & Martí, 2006; Tulder, 2018).

To this end, we seek to answer the following two research questions: How and why would the logic of social intrapreneurship within large-scale energy companies be an effective response to the challenges of energy poverty in the framework of a just energy transition?

To achieve this objective, within the energy poverty and transition context, this paper examines a related interdisciplinary background in social entrepreneurship and intrapreneurship, organisational change, and stakeholder theories. Therefore, our proposal illustrates a method that builds and includes a novel organisational unit through departments formed by social intrapreneurs in incumbent energy companies that are united to tackle energy poverty. Centred on this conceptual basis, the objective is the defence of a model for large-scale companies to adapt to just energy transitions with an organisational change led by a vision to impact the stakeholders'map and to protect the basic energy rights linked to the core of the business.

4.3. Background

Within the context of the energy poverty and transition literature, this conceptual paper builds on the literature relevant to the agency of social intrapreneurship with the underlying organisational question in relation to stakeholders.

The perspective of the participation of large firms in a just energy transition (Hockerts & Wüstenhagen, 2010) may grant social intrapreneurs a more prominent role that will enable them to survive and accelerate the just transition through the disciplinary lens of organisational change theory, particularly in terms of their organisation bridging and boundary spanning roles (Aldrich & Herker, 1977; Berkes, 2009). Relatively new logic could be integrated into old systems that need to be reinvented. It is not a contradiction to encourage the integration of two currently distant actors.

Energy poverty is the context of the study and the social problem to be addressed. Understanding the complexities of energy poverty as not only a dimension of poverty needs to be carefully treated so that a naturally distant actor, such as a large-scale energy

company, is willing to address it. Previous studies have looked at energy poverty with a partial focus (Boardman, 1991; Bouzarovski & Petrova, 2015). The existence of different perspectives addressing a complex problem demonstrates the need to adopt multilevel, multidimensional and multiactor approaches in the energy poverty field (Sovacool, 2014). The contributions of social entrepreneurship to fighting energy poverty are significantly increasing and demonstrate how social entrepreneurs act as bridge builders between vulnerable communities and the rest of the actors (Nelson & Jenkins, 2006). However, studies on social entrepreneurship for energy poverty and structured interventions are very rarely found in the literature (Bouzarovski & Petrova, 2015). More research on energy poverty via human-centred studies, energy justice, innovation, incentives, interventions, and policies has been suggested (Jenkins et al., 2018; Sovacool, 2014; Sovacool & Dworkin, 2015).

Given the different literature strands in the paper, Table 4-1 (Theoretical framework) lists the basic tenets of the literature.

Table 4-1 Theoretical framework.

<table>
<tr><td></td><td></td><td colspan="2">Existing multi-pronged theoretical framework</td></tr>
<tr><td></td><td></td><td colspan="2">Social intrapreneurship</td></tr>
<tr><td rowspan="7">Micro Level (why)</td><td rowspan="7">Attributes are adequate for stakeholder salience (Section 1 and 2 of the model)</td><td colspan="2">Social intrapreneurship attributes (Nandan et al., 2015; Halme et al., 2012)</td></tr>
<tr><td colspan="2">Mission (M. Dacin et al., 2011; Mair & Martí, 2006; Montgomery et al., 2012)</td></tr>
<tr><td colspan="2">Salience (Mitchell et al., 1997c)</td></tr>
<tr><td colspan="2">Power and empowerment of communities in transitions (Avelino & Rotmans, 2009; Pareja-Cano et al., 2020).</td></tr>
<tr><td colspan="2">Legitimacy (Dart, 2004; Nicholls, 2010; Suddaby, Bitektine and Haack (2017).</td></tr>
<tr><td colspan="2">Urgency</td></tr>
<tr><td colspan="2">Embeddedness (Kistruck & Beamish, 2010).</td></tr>
<tr><td rowspan="2">Me</td><td rowspan="2">The effective creation of a social intraprene</td><td colspan="2">Bridging and boundary departments</td></tr>
<tr><td>Organisational theory and search for continuous change (Weick & Quinn, 1999).</td><td>Stakeholders Theory (Barnett, 2019; Mitchell et al., 1997c; Parmar et al., 2010)</td></tr>
</table>

	urship departmen t and its impact on the stakeholde r's map (Section 4 of the model)	Social intrapreneurship agency (Halme et al., 2012; Nandan et al., 2015)	Social intrapreneurship departments: bridging and boundary departments to deal with weaker stakeholders and marginalised communities (Aldrich & Herker, 1977; Berkes, 2009; Leifer & Delbecq, 1978). Impact on the stakeholder's map bringing the weaker stakeholders closer to the core of the energy company in a slow and continuous transformation (Barnett, 2019; Parmar et al., 2010)
Context			
Macro (why)	Energy poverty and transitions literature is the Context - introducti on	Energy poverty	Just energy transition
		Energy Justice framework (Jenkins et al., 2018; Jenkins, Stephens, et al., 2020; Nelson & Jenkins, 2006) **(Section 3 of the model – why)**	Agency of incumbents – multi-actor approach (Avelino & Rotmans, 2009). Energy transitions may transform economies to reduce carbon emissions (Araújo, 2014)
		Energy poverty in Europe (Sovacool, 2014; Sovacool & Dworkin, 2015; Thomson & Bouzarovski, 2018; Waddock et al., 2015).	Transitions management (Loorbach & Wijsman, 2013; Schot & Geels, 2008)
			Multilevel theory - from innovation niche to regime (Geels, 2004)
			Transformational pathways (Geels & Schot, 2007).

Source: Elaborated by author

Social entrepreneurship as part of entrepreneurship theory is a consolidated field; however, its positioning as a relevant actor in sustainable development is not yet as well consolidated (Mair & Martí, 2006). There is no universally accepted definition for social entrepreneurship. However, its mission regarding disadvantaged groups and systematic transformations seems to be accepted (Okkonen & Lehtonen, 2016). Social entrepreneurs use networks to obtain resources and legitimacy differently than conventional commercial enterprises (Littlewood & Khan, 2018). These more effective social management strategies

applied to social intrapreneurship within corporations could catalyse socially innovative activities in energy poverty.

This paper also acknowledges the criticism of social entrepreneurship, one, as a vehicle for neoliberalism to cover the wounds created by capitalism, particularly when social entrepreneurs aim to provide public services corresponding to the State (Nicholls & Teasdale, 2017). It also recognises the scepticism regarding social enterprises' ability to serve the public good (Dey et al., 2016) in response to the need to balance market and social service logic. However, the growth of social entrepreneurship as a multilevel approach (Geels, 2002) may facilitate the expansion of social entrepreneurship ideas in all actors, guiding and enriching policy makers' views. Instead of the social entrepreneur being a substitute for the state in the provision of social services, close collaboration could be achieved with the integration of the new and old logics (Dey et al., 2016). From this perspective, social entrepreneurship could be in a good position to approach social problems (Dacin et al., 2011) if their logic is integrated within corporations. Niches (such as social intrapreneurship) that are more able to impact the dominant logics are the ones that are intermediately placed. They can bridge actors and are neither overly radical nor too akin to energy companies (Smith, 2007).

The literature on social entrepreneurship and social intrapreneurship is connected. Social intrapreneurship is social entrepreneurship that occurs within existing rather than start-up organisations (Halme et al., 2012). Social entrepreneurship is the establishment of initiatives to implement social innovations within organisations (Nandan et al., 2015; Summers & Dyck, 2011). Considering the synergies among these three concepts, we focus on the role of social intrapreneurship in tackling energy poverty within energy corporations. The social intrapreneurship literature emphasises goal alignment and embeddedness, which imply unique attributes for alleviating poverty, but it also considers how the organisational structure influences the effect of social intrapreneurship and how can be instrumental in organisational change (Kistruck & Beamish, 2010)

Organisational change theory includes strategies and techniques for planned changes to alter the behaviours of the members of an organisation. Organisational change researchers are concerned with how the exercise of agency of different actors influences the rhythm of change (Weick & Quinn, 1999). SED would be a planned episodic change to initially affect the scope of a department by approaching vulnerable consumers within

an adaptative organisation that would eventually develop into a continuous, long-term process of change to slowly spread the new logics.

The perception of the structure of internal divisions of social intrapreneurship has received little attention, although social intrapreneurs show unique benefits in the alleviation of poverty (Kistruck & Beamish, 2010). Separate departments may be appropriate to bring together different actors with boundary-spanning roles (Berkes, 2009; Leifer & Delbecq, 1978).

Stakeholder theory (Mitchell et al., 1997; Parmar et al., 2010) may be used to analyse the dynamic adaptation of large-scale companies in the context of energy poverty and just energy transitions. Managers prioritise stakeholders according to their power, legitimacy, and urgency (Agle et al., 1999). Drawing from Barnett (2019) firm´s actions to help society may be self-sacrifice, costly, proactive, sustained and not promoted. The management of secondary stakeholders may be reconciled with effects on primary stakeholders' relations. The consideration of vulnerable consumers as priority stakeholders would be an integral part of the stakeholder approach of this paper. An external stakeholder issue such as energy poverty may be internalized as a company-owned issue and even a strategic activity generating more commitment (Winn, 2001). Jenkins *et al.* (2020) point out that energy justice and reflexivity have a role in supporting legal restructuring and new financing models in utilities.

CSR scholars argue that CSR needs to be reshaped to work for society and not only for corporations (Margolis et al., 2007). Vulnerable customers may depend entirely on energy companies to obtain the energy services that would allow them to develop their primary capabilities (Day et al., 2016) but those are problems that lack the push of legitimate stakeholders (Barnett, 2019). In addition, CSR does not affect all levels and all stakeholders of the organisation in the case of large-scale companies (Frankental, 2001). Bringing social intrapreneurship into business-as-usual may contribute to enriching corporate practices towards vulnerable customers while simultaneously providing a more advanced stakeholder culture (Maon et al., 2010)

Organisational theory is concerned with the question of what managers pay attention to and what management's responsibility is towards an inclusive stakeholder orientation (Agle et al., 1999; Chandra, 2019; Parmar et al., 2010). Moreover, the obsession of Suddaby *et al.*, (2017) with enhancing the construct clarity sheds light on understanding

the legitimacy approach of this study. Legitimacy is a multilevel social process that fluctuates between the perceptions of the evaluators of their actions and the salience of social intrapreneurship to change the positions of vulnerable communities in the stakeholder's map (Halme et al., 2012). Further exploration using the stakeholder's lens may help to understand how to alter corporation practices towards forgotten stakeholders (Agle et al., 1999). Any organisational change within corporations involves the understanding of the dynamics of power and social intrapreneurship, which may increase salience through innovation and transformative acts (Avelino & Rotmans, 2009).

The transition context may foster the strategic creation of social intrapreneurship departments devoted to tackling the social problems of weaker stakeholders. The relative importance of the intermediary departments varies from context to context. Avelino and Rotmans (2009) have already considered combinations of organisational studies of nonlinear processes of structural change in societal systems.

Organisational change theory focuses on the interactions of structures, actors, and practices. To understand the role of social intrapreneurship within corporations, it is important to understand the interplay between social innovation spaces in energy companies (Hess, 2018). The length of time for this evolution may be substantial, perhaps as long as a decade. Transitions may serve to accelerate the tempo and rhythms of change (Weick & Quinn, 1999) and the need for a change in the logic of the company actors. Some researchers have explored the agency of social intrapreneurship in just energy transitions, although less attention has been paid to specific aspects in the context of the energy poverty problem (Nandan et al., 2015).

The innovation spaces of social intrapreneurship are disruptive protected areas where social innovators may begin the process of systemic change (Tulder, 2018). The discussion regarding the logic of small companies entering large companies and, thus, developing a proactive role in green entrepreneurship has already been addressed by Hockerts and Wüstenhagen (2010). This paper focused on defending social intrapreneurship as a means to tackle energy poverty in large-scale energy corporations. An apparently minor change in the organisational structure of a large-scale energy company may change its stakeholder map and allow the integration of a new external logic into the organisation. Such integration could facilitate the slow transformation from inside

corporations without radically changing their own business model and could also accelerate the adaptation of the incumbents to a just energy transition (Loorbach & Wijsman, 2013).

The context of just energy transitions will lay the foundation for the problem of energy poverty and the vulnerability of energy rights (Jenkins et al., 2018). Therefore, in the transition literature, conversations about the agency of niche actors as social intrapreneurs and their interaction within incumbent energy companies stand out. This study, however, prefers to consider transitions as a contextual framework to be investigated in the organisational model of SED rather than considering it the objective of this research.

The proposed conceptual model is organised as follows. The first part addresses the micro-level approach of the mission and the salience of stakeholders, change agents and evaluators (Sections 1 to 3). These three sections respond to the conceptual foundations of the proposed model to tackle energy poverty. Moreover, the meso-level approach of organisational changes affecting stakeholder theory may justify the creation of a bridging and boundary department of social intrapreneurs within the energy company (SED) (Section 4). The remainder of this article is organised as follows: in Section 4.1, we explore the impact of the integration of the social mission and the higher salience of social intrapreneurs on energy actors. Section 4.2 addresses the continuous balance between social and commercial resources. Section 4.3 addresses the energy justice principles to be implemented in the energy company. Section 4.4 introduces the formation of a department of social intrapreneurship geared towards energy poverty and the factors affecting the organisational change in the stakeholder map. In the Discussion section, we argue that this proposal may help in a just energy transition and mitigate energy poverty. We also identify some limitations, practical implications, and a research agenda and, finally, offer some conclusions.

4.4. From a niche of social intrapreneurship in energy poverty to the regime of energy companies

The Social Entrepreneurship Department (SED), which is formed by social intrapreneurs, may be designed to reduce the number of vulnerable consumers while acknowledging the complexities of energy poverty. Large-scale energy companies refer to commercialization companies, energy service suppliers, and energy companies' transmission and/or distribution companies in the electricity system. The department may be located close to

the CEO and leaders, separated from the rest of the corporate departments but integrated into all of them. Although this model could be applicable to sectors other than energy (such as water, real estate, food, and health), this proposal focuses on the energy sector.

4.4.1. The social mission and the unique attributes of social intrapreneurs to minimise energy poverty

First, the organisational change process should be guided by a clear social goal for the new department of social intrapreneurs to tackle energy poverty, which may be directly linked to the core business (M. Dacin et al., 2011). Energy companies have already supported external social entrepreneurs, but the majority of the energy corporations have not included the priority mission of reducing energy poverty into their organisational structure. Such a departmental mission may legitimize the use of corporate resources, thus taking a further step towards mitigating energy poverty through a proactive role (Turnheim & Sovacool, 2020). A joint vision of energy poverty may link actors with different objectives (Berkes, 2009).

Managerial perceptions of marginal stakeholders are frequently avoided at the core of energy corporations. SED may face resistance, inertia, and legitimacy threats from managers (Halme et al., 2012; Summers & Dyck, 2011). Therefore, respect and tolerance would be the first step towards continuous cultural change and value alignment (Kistruck & Beamish, 2010; Weick & Quinn, 1999). Social entrepreneurs may increase vulnerable communities' salience as perceived by managers due to the unique attributes of social entrepreneurs as agents of change (Agle et al., 1999). The level of salience may depend on managers' perceptions of the following three attributes of social intrapreneurs and communities:

Power would be required to mobilise resources for a mission whose logic is contradictory to the profit-dominant logic. Any organisational change within corporations involves the understanding of the dynamics of power (Avelino & Rotmans, 2009). Social intrapreneurs might not be powerful actors, but they may be actors who exercise a different type of power, such as innovative and transformative power. Additionally, the perceived "marginal" reciprocal power of social entrepreneurs may enable agency and empowerment of the communities. In a space of innovation and nonconformity such as SED, social

intrapreneurs might exercise socially innovative power, and in the interaction with managers, they might exercise transformative power (Avelino & Rotmans, 2009). Beyond that, social entrepreneurs may reciprocally empower vulnerable communities to ensure that such communities control and use those resources for their own benefit (Pareja-Cano et al., 2020).

The legitimacy of social intrapreneurs and communities may be pragmatic, moral, and cognitive. At this initial stage of organisational change, the process of acquiring moral legitimacy is viewed as a dynamic process of action that is supported by a sense of justice that upholds the moral rights of vulnerable customers who are considered increasingly essential to society (Suddaby et al., 2017). These weak stakeholders may eventually become direct clients. The increasing visibility of energy poverty may create grounds to build the moral legitimacy of the vulnerable customers and the social intrapreneurs whose activity is devoted to these groups. Social intrapreneurs are perceived as morally self-legitimised and having other-regarding focus and values. Their perceived legitimacy may influence the dominant actors and topics, which is important for the survival of social intrapreneurship (Nicholls, 2010). This perceived legitimacy will fluctuate over time, adapting to the perception of the energy poverty problem and to the valuation and assumption of co-responsibility by the leaders of the organisation. Social intrapreneurs in boundary roles may be responsible for changing the perceptions of managers (Leifer & Delbecq, 1978).

The cultural and network embeddedness of managers may encourage moral legitimacy in a separate department of social intrapreneurs (Dart, 2004; Kistruck & Beamish, 2010), whose agency within the SED may, in turn, increase such legitimacy (Weick & Quinn, 1999). The social intrapreneurs forming the SED may slowly transform the perceived legitimacy of vulnerable customers. They are more likely to be formalised when organisational decisionmakers explicitly recognise crucial problems, such as energy poverty (Aldrich & Herker, 1977).

Urgency is revealed through the emergency or structural situation of vulnerable customers who may need immediate action to be connected to the grid or to provide them with standard, minimum household conditions. The embeddedness and understanding of social problems by social intrapreneurs bring the company's attention to the typically unattended vulnerable customers (Agle et al., 1999). Local embeddedness is required to

leverage resources. Additionally, social enterprises are dynamic, empowering organisations that are contextually grounded in the concerns of the community (Dey & Steyaert, 2018).

Close to the CEO, social intrapreneurs who are in boundary roles may become more reliable vis-à-vis other units considering that their leaders decide who is inside and who is outside the boundary within the organisation. Decision makers may recognise the contingencies of the energy poverty problem, and the SED would serve as a buffer and intermediary group. The organisational change process will start with empowered leaders facilitating the change (Weick & Quinn, 1999). Leaders may provide organisational support, recognition, communication, and tolerance of the "extraordinary" agency of social intrapreneurs (Halme et al., 2012). Our model argues that the context of energy justice and a just energy transition may grant legitimacy to influence such perceptions.

The new logic may reorient the power relations among stakeholders towards the aspirational mission (Winn, 2001). Social intrapreneurs may try to disseminate their approach within the organisation to ensure that primary and secondary individuals have equal positions and recognise the mission of SED (Agle et al., 1999; Parmar et al., 2010). To understand the motivations behind building social engagement, it is useful to analyse the internal and external aspects of larger companies (Brown et al., 2010). The SDG framework could also provide advantages for corporations supporting a real inside-outside transformation in the mission of energy companies, considering the nonbinding nature of the SDG (Biermann et al., 2017).

4.4.2. The balance between the economic and social missions to achieve self-sustainability

In social entrepreneurship, profit is a means to an end rather than an end in itself (Mair & Martí, 2006). Social intrapreneurs within a corporation may suffer from tension when pursuing social and economic objectives. However, a bridging department may provide a way of managing this dual tension (Kistruck & Beamish, 2010). The SED may experience obstacles, such as claims of short-term profit loss, uncertainty, and lack of expertise, in dealing with social issues within the organisation. Tension due to pursuing social good through business means may emerge, and hybrid profiles may be required for such complex tasks (Halme et al., 2012). This proposal argues that the new logic would seek to generate

social impact as a priority; however, economic profit would also be a requirement to guarantee a self-sustainable model. The hybrid spectrum presented by Alter (2007) could help to move the social intrapreneurship logic to an energy corporation that currently operates under a for-profit model. Such organisational change may potentially affect the whole design of the company organisation in the long run, since changes may have relevant implications for the stakeholder map (Waddock et al., 2015; Winn, 2001). Thus, this model challenges a more comprehensive performance of financial and nonfinancial information in relation to energy vulnerability, where the conflict of less examined antagonistic logics is replaced by interaction. Additionally, organisations with social goals require strategic information from external stakeholders (Leifer & Delbecq, 1978).

First, the guarantee of income generation might allow SEDs to be self-sustaining over time(Alter, 2007) although their social mission would continue to be the priority. Sophisticated and thoughtful solutions would accompany a transformation pathway, and the resistance of social intrapreneurs to tensions in the social and economic arenas would prevail. The SED activities may be directed to community empowerment or energy efficiency in the field of housing but must always be in line with the mission of tackling energy poverty, which is fully related to the electricity supply business. Inclusivity would not be reduced to solely providing cheaper products or services to vulnerable customers but would also be extended to the whole energy system (Tulder, 2018).

Second, to illustrate our proposal, all consumers considered vulnerable would be easily identified by the energy company as consumers entitled to the electricity social tariff or a non-payment situation. The SED focus would be limited to the vulnerable customers of the company (not from other energy companies). Being arrears in utility bills would be only one of the indicators of energy poverty, which provides a partial approach to the problem in the initial phase of SED implementation. However, the difficulty inherent in identifying hidden energy poverty and the link between poverty and energy poverty may always be present in SEDs (Cools & Oosterlynck, 2015). These departments carefully review the situation of each vulnerable customer and the social costs to understand social value creation (Chandra, 2019). Social business experts could design interventions for these vulnerable customers on a case-by-case basis.

Companies and vulnerable consumers could benefit from these interventions, since if fewer consumers are vulnerable after SED intervention (i) the company would obtain a

financial (and nonfinancial) gain because more bills would be paid and (ii) the vulnerable consumers would become less poor and more reliable (Cools & Oosterlynck, 2015).

Third, a great deal of literature has been devoted to exploring the role of large companies in low-income markets and access to energy, but surprisingly little research has been devoted to corporations with customers facing energy poverty in developed countries (van Zanten & van Tulder, 2018). The reason for the lack of research on energy poverty in developed countries is not clear (Bouzarovski & Simcock, 2017). However, the reasons may be that the market of vulnerable people may not seem large enough to be perceived as having enough purchasing power or that the fear of stigmatization and social exclusion is higher in developed societies.

Corporate finance departments could operate in the impact finance markets of the new social activities and even on the access to impact investment, which may be regarded as a competitive advantage (Schoenmaker, 2017). Social intrapreneurship is based more on collaboration and interaction than on competition. However, if all companies follow the same social strategy, this could contribute to tackling energy poverty and could be a competitive advantage for the company that first implements it, which could become a *Pioneer Goliath* with a larger scope and a long-term orientation (Hockerts & Wüstenhagen, 2010). Large-scale change is perceived as counterintuitive within the company, so for prime movers, the size and participation of communities tend to be unrelated challenges to abandoning the assumption of tension between the opposing social and economic blocks, which would thereby facilitate the interaction of the logic of social intrapreneurs (Weick & Quinn, 1999).

4.4.3. Energy justice principles to legitimise organisational change

Energy justice is the application of the criteria of justice to energy policy, energy production systems, energy activism, energy security and climate change (Jenkins *et al.*, 2018). This section includes the theoretical framework that could foster the perception of moral legitimation of this change. The social context of energy justice in a corporation may be a factor that increases the salience of vulnerable communities. More agency against energy poverty may become socially demanded (Campos & Marín-González, 2020).

Energy justice may help to develop the framing of social intrapreneurship with a strong resonance on a wide variety of actors (Hervieux & Voltan, 2018). This article does

not intend to position energy poverty as a problem to be fully resolved by assuming a positivist discourse that understands social dysfunctions as inefficiencies solvable through good technical management. Energy poverty affects the people who suffer from it, and energy justice requires reflexivity to impact the work of energy companies (K. Jenkins et al., 2020). Therefore, this brings the debate to a less reductionist dimension.

The previous work has analysed organisational theories from the standpoint of equating the power of the different stakeholders (Burga & Rezania, 2016; Margolis et al., 2007). However, the current structures, such as CSR, are receiving criticism, and alternatives that increase the impact of corporations and their sustainability commitment are needed (Fineman, 1996; Frankental, 2001). This proposal argues that energy justice could inform decisions to realign values, balance power among stakeholders, and legitimize the most vulnerable people (Mitchell et al., 1997c)

Energy companies may interiorise the energy justice framework as a valid tool to guide decision-making through the energy system (Sovacool et al., 2017). This study follows the definition of energy poverty proposed by Day *et al.* (2016) because it is global and fits the energy justice principles.

SEDs may define vulnerable customers as all the consumers of the energy company that could be entitled to the social tariff ("vulnerable consumers"). In relation to the triple-bottom-line (economic, social, and environmental) approach, we found that the eco-vision seemed to be more accepted in practice (Fineman, 1996; Hockerts & Wüstenhagen, 2010) but that the inclusion of vulnerable groups in the company business was less explicit.

SED leaders may head the application of the energy justice principles framework by promoting availability, affordability, due process, good governance, sustainability, intergenerational equity, intragenerational equity, and responsibility (R. Hiteva & Sovacool, 2017; K. Jenkins et al., 2018; Sovacool & Dworkin, 2015).

Finally, this study argues that the implementation of energy justice may stimulate employee motivation and talent retention. Employees may participate in social intrapreneurship programmes to overcome the internal challenges faced by the SED in tackling energy poverty. In the same way that NGOs train their staff in financial management, SEDs would train their social intrapreneurs towards a more user-friendly or human-centred approach and dynamic cocreation business relationship (Prahalad &

Brugmann, 2007). An exchange of hybrid and complementary skills may be appreciated when dealing with vulnerable groups (Turnheim & Sovacool, 2020).

4.4.4. The impact of social intrapreneurship on the stakeholder map

This section focuses on how the formation of a bridging department of social intrapreneurs within an energy company illustrates a process model of an organisational experiment to deal directly with vulnerable customers. The Social Energy Department (or SED) would be an inclusive innovative approach in the energy company (Halme et al., 2012) implemented by the logic that social intrapreneurs may gradually transform energy organisations (Wesseling et al., 2020).

Energy companies cannot live in isolation, removed from energy poverty. An SED could be a direct link to vulnerable customers. Social intrapreneurs may act as change agents in their decentralised unit (Weick & Quinn, 1999). Isolating SED from existing CSR or sustainability departments may reinforce the attention and salience of vulnerable customers. CSR departments do not generally have a perceived single identifiable mission and are normally associated with unclear purposes. The CSR department may not be working to reduce energy poverty since it was not its original purpose. The same explanations may apply to environmental departments (Berkes, 2009). Classic bureaucratic mechanisms responding to rigid corporate reporting requirements frequently hinder the CSR department from fulfilling the company's responsibility towards weaker stakeholders. The typical problems of vulnerable customers, such as high prices or the impossibility of paying electricity debts, are not shown respect and are not duly addressed by corporations.

The clear mission of this specific project department would make it more agile, enabling it to motivate a team of social intrapreneurs who are well aware of the intricacies of the company to solve challenges. Formal inter-units of social intrapreneurs may provide protected nonbureaucratic mechanisms on the fringe of the organisation that may regulate the flow of information regarding vulnerable customer needs (Berkes, 2009; Kistruck & Beamish, 2010). This separation and focus may better overcome cultural constraints, network embeddedness (Berkes, 2009; Halme et al., 2012) and management deficiencies when dealing with weaker stakeholders in the dominant practice of stakeholder management. A confident, unidirectional network based on mutual trust may focus its attention on a singular objective, i.e., energy poverty, thereby conveying a credible message

and avoiding confusion among profit and non-profit logic. Separation may also build on the shift in the mindset of leaders (Kistruck & Beamish, 2010).

Second, SEDs may adopt social business models, such as the low-income customer model, with vulnerable consumers as their target customers and may potentially revise the electricity tariff and other services especially designed for them. Vulnerable customers should be treated as special, priority customers who may be supervised by social workers (Cools & Oosterlynck, 2015). Income generation in SEDs would not originate in vulnerable customers alone (Cools & Oosterlynck, 2015). Areas and activities that may be relevant to this department could be the following: the implementation of appropriate metrics for measurement and identification of vulnerable homes (Boerenfijn et al., 2018; Dineen et al., 2015), energy scans, consumption behaviour or empowering processes, energy efficiency in houses and appliances and house retrofitting, pre-financing models for energy appliances (Cools & Oosterlynck, 2015; Santamouris, 2016) and supplier credits for energy efficiency (Santamouris, 2016) or affordability of energy prices (Jenkins et al., 2018).

Third, stakeholder theory also focuses on the management of the relationships among them. Such relationships may be modified to reinforce the salience of weaker stakeholders (Agle et al., 1999; Kistruck & Beamish, 2010). Therefore, the following boundary conditions to be pursued in the relationship among stakeholders may explain the potential institutionalization of SED initiatives.

First, SEDs may directly foster reciprocal empowerment to vulnerable consumers by considering them “special clients”, thereby achieving legitimation and attention from social intrapreneurs and leaders and a new status of primary stakeholder to transact with the company (Barnett, 2019). The empowerment of marginalised communities may become problematic, and cooperative building tactics, such as physical presence and regular contacts, may be appropriate. The equation regarding the power of vulnerable consumers to other customers may affect the energy company’s behaviour (Mitchell et al., 1997).

Second, NGOs and social entrepreneurs may become strategic providers of the department thanks to their unique capabilities to deal with vulnerable communities. Instead of providing services only to a few households they could support the relationship with all the vulnerable consumers of the company. Immediate responses are possible because of the proximity and social expertise of intrapreneurs (Aldrich & Herker, 1977; Berkes, 2009).

Third, asymmetry of information is one of the major limitations in energy poverty in a complex energy system that requires greater knowledge from all actors (Broberg & Kazukauskas, 2015; Sovacool, 2014). The information from weaker stakeholders would naturally be perceived as non-interesting by the company. The use of liaison roles to adequately transmit and filter reciprocal information in an understandable language and to represent the company may preserve balance and increase salience (Keszey, 2018).

Fourth, the routinization of the activity is a great challenge. Social intrapreneurs may bring special clients into the organisation. By identifying a household in energy poverty, the SED would provide the company with a situation to address. Once the activities and how to deal with them are clear, the tasks could be routinised, and the difficult work at hand organised on a case-by-case basis.

Co-management of social intrapreneurs with vulnerable communities may contribute knowledge and capabilities that are acquired at different levels. Robust bridges need to be built for the success of this organisational experiment (Berkes, 2009). Another factor would be to increase the use of networks rather than the traditional use of individual members of the organisation (Halme et al., 2012). In relation to the development of stakeholder theory, the proposal would involve some relevant transformations through the stakeholder map by way of organisational change, including a social intrapreneurship department geared towards energy poverty (Fineman, 1996). According to Winn (2001, p. 160), “stakeholder theory may shed light on what circumstances change such powers”.

To illustrate the impact of our model on the stakeholder map, Figure 1 displays how less powerful stakeholders (NGOs, vulnerable customers) may equate to and become powerful stakeholders (nonvulnerable customers, creditors, and employees) after the entry of a bridging department, such as an SED, into the organisation. This change may affect the relationships among all stakeholders and gradually transform the perspectives of traditional departments. This different perspective may create uncertainty until the SED is consolidated while coevolving with the rest of the players until the design of the new organisational structure is positively adopted (Geels & Schot, 2007; van Tulder & Keen, 2018).

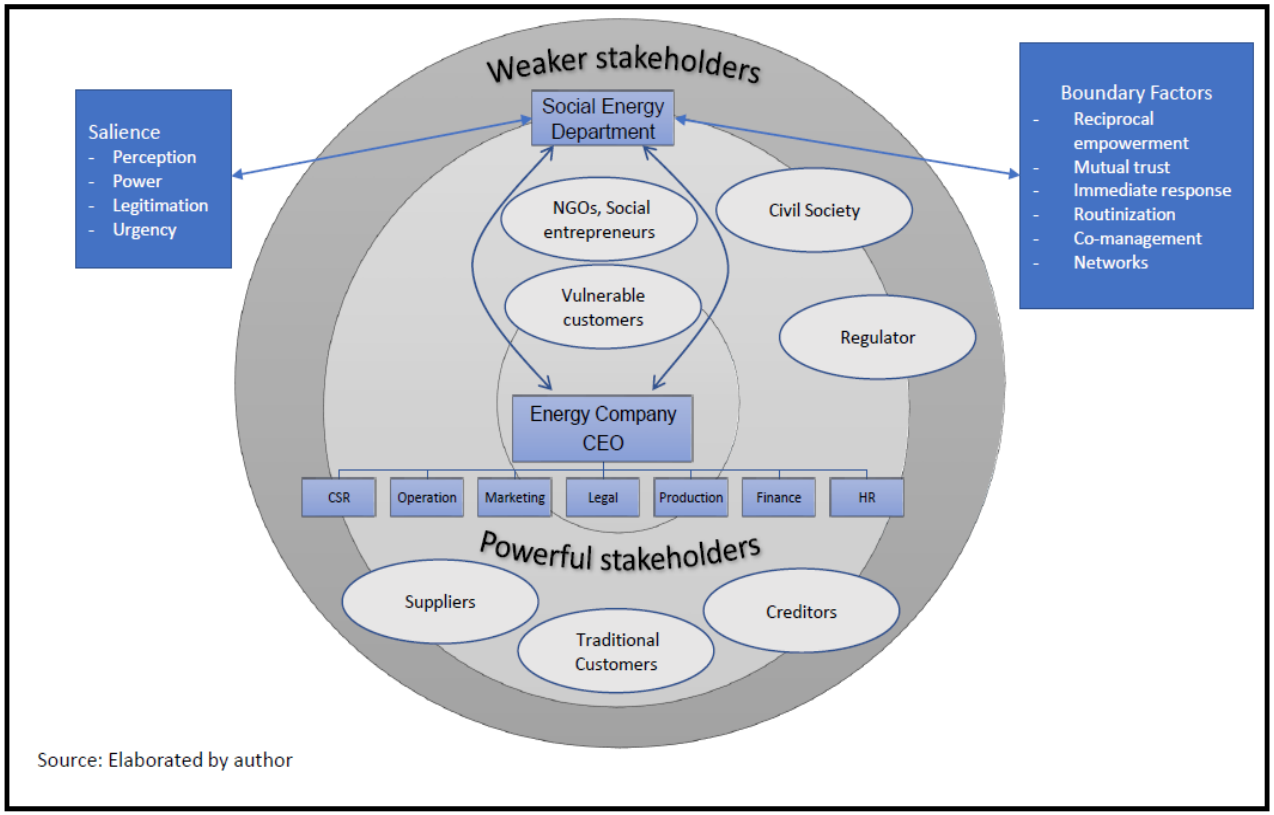

Figure 4-1 Map of stakeholders in energy company with new Social Energy Department. Elaborated by authors. The stakeholders map depicted in Figure 1 is dynamic. As a social intrapreneurship department builds power, legitimacy, and urgency, it changes the relative salience of weak stakeholders. The squares are stakeholders, and the circles are departments of the energy company.

NGOs and social entrepreneurs move from being external stakeholders to becoming direct suppliers of capabilities-centred services aimed at providing better services to vulnerable customers. It would be more than a bilateral NGO-firm partnership (van Zanten & van Tulder, 2018). Social agents might become bridges to the human-centred approach that is missing in energy companies. Vulnerable customers may want to continue seeking mediation from social groups, such as NGOs, social entrepreneurs, and social workers (Aldrich & Herker, 1977).

In relation to energy regulators, SEDs may provide more informed policy insights into energy poverty (Geels, 2004) because energy poverty may become a real issue for more actors. Gradually, there may be an increase in binding regulation in the field of energy poverty (van Zanten & van Tulder, 2018)

Traditional consumers might be more aware of the situation of their vulnerable counterparts thanks to the targeted communication of SEDs and vulnerable consumers, who were previously considered 'guilty' of non-payment, would become salient customers. Constant customer feedback would be required to be aligned with a participative approach (van Zanten & van Tulder, 2018).

New financial entities may be interested in this model. Impact investors and venture philanthropy organisations may finance this new social intrapreneurship activity (Frankental, 2001). Sustainability finance is a growing sector that may be keen to work with corporations in the implementation of its instruments (Schoenmaker, 2017)

This managerial challenge may require senior leadership with social and business skills (Prahalad & Brugmann, 2007), and profiles from NGOs could provide SEDs with human-centred skills. Moreover, social engagement, social intrapreneurship and open social innovation could be launched by SEDs to attract internal and external projects for vulnerable consumers (Chesbrough & di Minin, 2014).

Finally, the organisational culture of the energy company may be transformed (Maon et al., 2010; Waddock et al., 2015). SED managers may take responsibility and undertake and disseminate the social mission in their daily activities. They would become the contact people for vulnerable stakeholders. Over the past few decades, managers have encouraged environmentally friendly practices in business (Fineman, 1996). Therefore, they should also encourage social practices aimed at tackling energy poverty. SEDs could

encourage the social awareness of vulnerable customers through a stronger social intrapreneurship presence in the company (Nelson & Jenkins, 2006).

4.5. Discussion and future research

Current corporate structures in energy companies do not contribute to minimising energy poverty and are sometimes even accused of perpetuating it (Campos & Marín-González, 2020). This may be mainly due to the limitations of conventional CSR approaches to focus on social problems and, in particular, vulnerable stakeholders. Social intrapreneurship may lead to a step forward in stakeholder management of vulnerable customers of energy companies in inclusive transitions. Slow transformation pathways would allow the basic elements of the energy companies to remain untouched, which may be more realistic (Geels & Schot, 2007).

Our research addresses energy poverty from the lens of social intrapreneurship to contribute to an organisational problem (specifically in the field of management of vulnerable stakeholders) in the context of energy poverty. This four-component process model (social intrapreneurship, social priority, legitimation through energy justice and the bridging structure) may be a topic of great theoretical and practical interest. The main contribution of this paper is provided at the nexus of organisational change, social intrapreneurship and just energy transitions. The integration of the logic of social entrepreneurship from the perspective of a bridging department may foster the salience of social intrapreneurship and purpose driven logic in the energy sector.

First, this model focuses on the micro-level evolution of the salience of vulnerable customers and social intrapreneurs as change actors, as perceived and evaluated by the leaders of energy corporations. Social intrapreneurs are more suitable for dealing with vulnerable customers that are naturally peripherical to the company, but they both need legitimation. Energy justice could be a crucial factor in enhancing the perception of moral legitimation of vulnerable communities and SED departments in the context of a just transition (Suddaby et al., 2017). The role of the agency of company actors in energy poverty is fostered by proactive and social intrapreneurs that may create spaces for developing the social focus to expand the logics that are naturally opposed by the company.

Second, stakeholder theory can be contributed to on the meso-level, including the formation of bridge and boundary departments established to deal with marginal

communities and to increase the salience of weaker stakeholders. The forming of bridging departments in corporations to address secondary stakeholders' main problems could be further explored in the context of just transitions.

This organisational movement may enable multiple changes on different levels over time. Practitioners may apply complex thinking during the organisational change process, not only in the early phases but also throughout this process since the points of view of the different stakeholders may change constantly (Mitchell et al., 1997).

Regarding the temporality of just energy transitions, the organisational change process could be accelerated considering the crucial role of energy companies as influential actors (Loorbach & Wijsman, 2013), but the expansion of social intrapreneurship into the dominant system may also encourage its transformation (Wesseling et al., 2020). As Waddock *et al.* (2015) indicated, social intrapreneurs may become *attractors* that transform energy companies to further contribute to sustainable development. SEDs could act as a bridge between the organisational inertia of energy companies and the vulnerable customers of these companies. Another main objective of this proposal is to avoid the risk of social intrapreneurship remaining a marginal movement in the organisation that is guided by other logics or interests that do not include vulnerable stakeholders as a central part of its business model (Tulder, 2018).

Our research has several limitations, such as remaining contextualised. However, contextualisation is assumed to be essential to social construction (Winn, 2001). The model focuses on the perceptions of subjective leaders whose perceptions might be distorted. The insights of this theoretical study could be richer if more empirical tests are performed in the context of energy poverty, which could be applied conceptually to corporations in other sectors in relation to SDG activities and subject to the corresponding critical assessments (van Zanten & van Tulder, 2018)

This proposal could therefore be tested to create knowledge through case studies with specific initiatives that have been put into practice through similar formats (even if it is within CSR departments) or for other vulnerability problems. We explicitly reflect on the cautiousness of our statements since they deal with vulnerable groups and the difficulty of managing the different interests at stake.

As summary, our study suggests several theoretical and practical contributions and implications for scholars, intrapreneurs and leaders, which are reflected in Table 4-2 (Theoretical and practical contributions) below.

Table 4-2 Theoretical contributions of Chapter 4.

Theoretical Contributions	Implications for territories
to social intrapreneurship	Social intrapreneurship to tackle energy poverty in energy corporations.
to energy poverty	Energy justice to provide legitimation to vulnerable communities
to organisational theory	The role of agency of company actors in energy poverty
to stakeholder theory	Bridging and boundary departments of social intrapreneurs to increase the salience of weaker stakeholders.
to transition management	The transition experiment involves a process model for bridging departments within energy companies to tackle energy poverty.

Source: Elaborated by author

This conceptual paper has some practical implications. A new social strategy is suggested for developing interorganisational social business relationships in just energy transitions. This proposal could be implemented as an organisational process experiment with transforming potential (Loorbach & Rotmans, 2010; Summers & Dyck, 2011) and would require high levels of responsibility and respect toward social needs for it to be correctly implemented in both theory and practice (Ghoshal, 2005). Social entrepreneurship has proximity to energy poverty that may not be so easily transferable to larger structures, such as corporations. What appears to be a small organisational change could have a major impact on the electricity system (Waddock et al., 2015).

This study suggests several lines of research. First, more research on strategic niche management, multi-stakeholder partnerships and transformative innovations in the energy system involving co-management or multi-actor partnerships is needed. Attention may be

paid to internal processes within business actors (such as reciprocal social learning, iterative feedback, networking, or visioning). Second, further investigation into social intrapreneurship development within corporations aimed toward sustainability and empirical evidence to prove solidity, sustainability, and resilience to the proposed model are needed.

Furthermore, research into sustainable finance may provide alternatives to the apparent lack of availability of massive private funds to mitigate energy poverty (Martiskainen et al., 2018). Finally, future research could examine the adaptation of bridging departments to diverse political, social, or economic contexts, which will make the department's priorities vary depending on the types of vulnerability. As an example, bridging departments in developing countries subject to the corresponding adaptation could provide energy access in remote areas without access to an electricity grid (the *Last Mile Department).*

4.6. Conclusions

Corporate proposals to solve energy poverty are limited, although the relevance of this social problem is increasing in political agendas. Vulnerable energy customers remain at the periphery of the stakeholder map of energy companies. Energy poverty mitigation requires the coordinated participation of multiple interrelated actors, and in particular, energy businesses seem to have an opportunity to rethink their approaches and contribute to the eradication of energy poverty in the transition to just energy.

This process model proposal intends to fully integrate the logic of social intrapreneurship in bridging departments that may increase the salience of vulnerable customers to large-scale energy companies. Social intrapreneurship in energy poverty could proactively achieve a higher position within energy companies (Geels, 2002).

Energy companies could take advantage of the social intrapreneurship model to focus on what should matter in the just energy transition, including all actors, while simultaneously upholding both economic profit and the social mission. Thus, energy companies could lead the demand for social inclusivity in the electricity sector and coparticipate in the change towards sustainable development by steering all actors, including regulators and investors, towards social business practices. The inclusion of

bridging departments of social intrapreneurs within energy companies could be implemented in other sectors and might help corporations approach the SDGs.

A true willingness to change is required for the private sector to respond differently to the social demands of the transition to just energy.

5. Discussion: Main contributions, opportunities for future research, implications for practice and limitations

"We have to avoid the assumption
that capitalism has an "is" and
take more seriously the variations"
(Gibson-Graham, 2008)

This chapter summarises the theoretical discussion on the research contributions. We emphasise what is new about our research and how it might be enhanced by future academic work concerning social entrepreneurship's collective and hybrid nature and its connector role in the energy poverty network and energy corporations. The last few decades have seen a huge growth of energy literature around the relevance of considering energy capabilities and social relations theories (Middlemiss et al., 2019) in a technology-oriented energy system (Frigo, 2017). We investigated an understudied actor that can play a relevant role in energy poverty: the social entrepreneur. The complex nature of energy poverty invites us to focus on the integrative literature review on the collective, hybrid and coordination dimensions of social entrepreneurship (Montgomery et al., 2012) through the network of actors (Dacin et al., 2011; Jarzabkowski et al., 2012), as stated in the review of Chapter 2.

We endeavoured to respond to this research need by studying social enterprise as a connector within the network of energy poverty actors. Our limited understanding of the energy poverty network led us to explore the mechanisms that explain social enterprise within the network, as outlined in Chapter 3. We analysed social entrepreneurship as an experience of innovation and social transformation from a holistic and comprehensive multi-lens view of the network, overcoming eminently technical and economic approaches to energy poverty. Then, we found that the narrative of social entrepreneurship differs depending on the priority given to the social aspects with implications for the approach toward the network. Our findings contribute to extend the knowledge on the composition and relationships in the energy poverty network, an approach scarcely addressed in the energy poverty literature. We contribute to the literature of social entrepreneurship in

combination with energy social science by providing new insights against energy poverty (Martiskainen et al., 2018; Sovacool, 2014).

The second focus was the interaction of the social enterprise with a dominant actor in the network, such as the energy corporation (as discussed in Chapter 4). Chapter 4 provided a theoretical contribution through the intermediary position of the social intrapreneur in the energy poverty network, with a role to bring vulnerable stakeholders to the centre of the corporate mission. Insights from stakeholder theory and social intrapreneurship for corporate organizational change may be relevant to energy poverty, to perform an energy justice framework in practice and implement the just energy transition. Based on this, we propose introducing a new department in the organisational structure of an energy company that would deal directly with vulnerable customers, the Social Energy Department. The practical implications of social movements perspectives are particularly promising since they focus on integrating novel units in energy companies and the social services from the administration and may stimulate further research on models of social intrapreneurship to tackle energy poverty.

The remainder will include theoretical contributions describing how theoretical and practical implications extend, change, or alter current theoretical and sensible views in different fields and the results of the thesis as a whole. This is the most substantive portion of the discussion, capturing the most compelling ideas of this research. Furthermore, research opportunities open up for scholars a roadmap of potential studies or areas of inquiry in social entrepreneurship and energy poverty. The network perspective is relevant because multi-actor approaches are required in energy poverty. Further studies might explore social enterprises as a productive arena to provide a logic that helps to build broader and more effective responses to the energy vulnerability problem in the network and the energy corporations' stakeholder's map.

5.1. Theoretical contributions

This work outlines theoretical insights into the role of entrepreneurship and social innovation in the energy poverty network in the European context. We distinguish between two main insights: First, contributions to the intersection of the field of social entrepreneurship and energy poverty phenomenon through exploring the hybridity of social entrepreneurs in the energy poverty network and unveiling new approaches to the

coordination role of actors in energy poverty. And second, a contribution to providing a non-traditional organisational process model for developing Social Energy Department units within large energy companies. A practical implication is the dissemination of social proposals in energy poverty that stimulate other actors (e.g. policymakers, social entrepreneurs, NGOs working in energy poverty, and energy corporations) to benefit innovation niches or large-scale spaces where energy poverty can be alleviated.

5.1.1. Theoretical contribution of bridging narratives of social entrepreneurship with the lens of network theory

This thesis has a common thread which is the envisioning of the hybrid and collective nature of social entrepreneurship (Bauwens et al., 2020; Gupta et al., 2020; Huybrechts & Haugh, 2018; Mato-Santiso & Rey-García, 2019; Montgomery et al., 2012; Nordstrom & Jennings, 2015) that enable an intermediation role through an alternative form of business (Araújo, 2014; Loorbach & Wijsman, 2013) in the energy poverty network.

Two interlinked areas of contribution emerge from our findings underpinned by this common thread related to the composition of the energy poverty network and the relationships between its members. Our work unveils the potential role of the social entrepreneur in both producing narratives that connect the diversity of members of the network and enabling the cohesion of the highly fragmented energy poverty network.

5.1.1.1. The diversity in the composition of the members of the network

From the theoretical lens of network, we look first into the composition of the members of the energy poverty network. The perspective of hybridity and collectiveness is a relevant attribute to enhance network cohesion (Martí et al., 2017), facilitate the understanding, communication, and coordination among the members of the energy poverty network, and integrate energy justice (McCauley & Heffron, 2018). It is important to remark that the energy poverty network is formed by actors with distinct perspectives on the energy poverty problem.

Our results show a continuum in the diversity of experiences that arise from the hybrid nature of social entrepreneurs from an emerging network perspective (Dufays & Huybrechts, 2012). Social entrepreneurs aspire to systemic changes in the energy system (Hess, 2018). Still, they are also aware of the influence of the system's power relations, complexity, and failures (Dey & Steyaert, 2010; Elia & Margherita, 2018). Despite the

existing cohabiting tensions in the market versus the social side of the solutions (Mitzinneck & Besharov, 2019), the hybrid skills could favour a coordinator role in energy poverty and facilitate the relationship between traditionally opposed and diverse actors. Far from duality emphasis, narratives from social entrepreneurs that we called "bridging" stand out insofar as they emphasise the connection, displaying a diversity of forms that social enterprises can take, with relevant implications for enabling a synergistic activity of all actors in the network that contributes to accelerating the just energy transition (Bauwens et al., 2020; Dufays & Huybrechts, 2012). We claim that network viewpoints connecting disciplines and domains may be particularly appropriate to address energy poverty issues (Sovacool, 2014). Envisioning new coordinating perspectives on the role of social entrepreneurship can be scholarly relevant because of his agency in the network and adaptability to deal with different actors. Furthermore, comparative, and analytical thinking is required to differentiate between the types of narratives cohabiting the phenomenon of social entrepreneurship. Rather than focusing on people under energy vulnerability, we focus on less studied actors working in energy poverty that can be seen as a decisive step to enhance the multi-actor and multilevel energy transition towards renewables.

Hence, this contribution enriches the knowledge of the hybrid diversity of narratives of social entrepreneurship (Shaw & Carter, 2007), which conforms to different connection approaches within the network. This theoretical contribution reviews the rich experience of the hybrid composition of some network members to face the multi-actor approach to energy poverty (Grossmann et al., 2021; Littlewood & Khan, 2018; Walker & Devine-Wright, 2008). A contribution to the literature on poverty that extends knowledge about the nature of the poverty network through the narratives about the role of an actor, improving the understanding of the network.

The narratives derived from the hybridity of social entrepreneurs show a diversity of perspectives that affect network cohesion. While, the business narrative is not conscious of the problem or the rest of the network, the social activist narrative significantly impulse the advocacy action needed to advance against energy poverty. A third narrative, which we name “bridging narrative”, helps building connections in the energy poverty network because it includes and connects all actors due to its hybrid and collective nature. In other words, we argue that recognising the diversity of narratives presents social aspects in the

collective phenomenon of social entrepreneurship, providing different approaches to their experience of the network.

We found how distinctive elements characterise each narrative and position it towards the energy poverty network. We also identified opposing perspectives in narratives drawing from the literature on social movements and collective action. We argue that also some actors ignore the network, some exclude other members, and some have more aligned positions in the energy poverty network. This insight may help foreseeing the network actors' reactions and experiences.

Beyond the opposing view, we complement this argument indicating that social movements' lens may underscore the relevance of advocacy in the energy transition. The struggle of social movements is paramount to advancing advocacy efforts in energy poverty (Campos & Marín-González, 2020; Melucci, 1980) and maintaining tensions that require cooperation and critical approaches (Mitzinneck & Besharov, 2019). The empirical contribution integrates previous knowledge of networks and social movements to integrate novel insights into the domain of social entrepreneurship in energy poverty. Thus, it is beneficial to balance these different views of the responsibility of the actors in their practices. The challenges and barriers experienced by social movements in the energy system may be overcome by the potentially less adverse bridging inclusive narratives of social entrepreneurs. An inclusive dimension emanates from the bridging narrative of social entrepreneurs that is capable of performing translation among all empowered actors by proposing alternatives employing their hybrid resources and enabling interactions (Van der Waal et al., 2018). The intermediation of the bridging narrative may allow the connection of all actors and promote good practices and information sharing around energy vulnerability. It is less political, inward-looking, and concerned with building the sector (Saebi et al., 2019). These two social and bridging narrative notions enrich current theorising on energy poverty, specifically by deepening and enriching current knowledge about the poverty network, which is limited and, above all, does not look at understanding the role of some understudied actors in the network.

The construction of a strong energy poverty network is a dynamic process that requires actors who may (i) envision the desired change, mobilise others accordingly and learn collectively about those experiences (Vasquez-Delsolar & Merino, 2021); and (ii) deal with both business and social activist perspectives and trade-offs to access novel

territories by managing the tensions among the members during such process. As a translator and intermediator, the bridging narrative reveals an inclusivity approach to the network.

All narratives have the shared mission to tackle energy poverty. Still, with the lens of social movements, we outline that each actor's framing differs on how to achieve strategic objectives, what images be given to the public to mobilise adherents, and how to acquire the necessary resources to transform old beliefs about energy poverty (Benford & Snow, 2000; Levin et al., 1998; Snow, 2004). Therefore, the degree of inclusivity of the network members may change through the process of amplification of the network in the dynamic transition process to build on self-reflection and self-critique of the members and to identify aligning and denouncing narratives that may require intensive research over time (Huybrechts & Haugh, 2018).

5.1.1.2.The relationship between the actors: the relevance of weak ties in the network

We observe the relationship between the members of the energy poverty network. The different narratives of social entrepreneurs invite us to pay attention to relations within the network through the nodes and out of this context emerges the figure of the *weak ties* (Granovetter, 1973) as an instrument to reinforce such relationships in the fragmented energy poverty network. We claim that *weak ties* act as bridges to coordinate a fragmented energy poverty network (Granovetter, 1973; Krippner et al., 2004). The salience of the relationship of members in the network varies across narratives. The narratives reveal that business and social activist narratives are less oriented toward the connection of the energy poverty network. In contrast, the bridging narrative shows the importance of collaboration and mediation to include all network members. Such differences have implications affecting the *weak* and *strong ties* between the members. The bridging narratives help extend the network literature in social entrepreneurship, broadening the vision of collective social entrepreneurs as hybrid organisations with capabilities to formalise emerging networks (Huybrechts & Haugh, 2018) and coordinate multiple actors with different lenses depending on the corresponding narratives (Giudici et al., 2018). Identifying the structure of *weak ties* may help facilitate or block organisations from constructing cohesion in networks. S*trong ties* are not connectors because they are scaling only in-depth and have

no capabilities to scaling up. *Weak ties* are bridges and consequently can coordinate networks within the networks (Granovetter, 1973).

The quality of the relationship is determined by the implementation of the energy justice framework through the network. Trust, terminology, adaptation to context, translation of different languages, proximity, and recognition of diversity among economic and other forms of value to capture actual content and substance are crucial to performing the energy justice framework (Grossmann et al., 2021). We propose using intermediation figures through regular interactions of the emerging network. If there is an assumption that different ties have different implications in the network, *weak ties* are helpful for coordination. The bridging narrative of the collective social entrepreneur may help them to (temporarily) play this coordinating role in the fragmented energy poverty network (van der Waal et al., 2018). This new perspective to the connecting role of collective social entrepreneurship builds on the composition of some members of the energy poverty network (Montgomery et al., 2012). Social entrepreneurs could be relevant to interpreting the phenomenon's complexities beyond the collective social entrepreneur's activity and may assume the (temporary) intermediation role of the fragmented energy poverty network.

Efforts to study the relationship between the network members will provide insights to social movements in social entrepreneurship research (Campos & Marín-González, 2020; Edwards, 2014; Hess, 2018; Mair & Martí, 2006). Social activist and bridging narratives may clarify with in-depth responses the position of social entrepreneurship in the network, finding that social activist narratives reveal the natural existence of an adversary embodied in the mainstream actors (such as companies). Therefore, the contribution integrates social activism dimension to enrich the understanding of social entrepreneurship and how such perspective may affect the inclusion of all actors in the network. An activist narrative may not support the increasing of connections in the network.

To sum up, our results on bridging narratives should be seen in a positive light to envision a richer understanding of the potential of social entrepreneurship to enhance cohesion in the energy poverty network (Bale et al., 2013; Dufays & Huybrechts, 2012; Huybrechts & Haugh, 2018; Martí et al., 2017). Approaches to social entrepreneurship and social innovation are gaining prominence in the just transition. With the collective lens of social entrepreneurship theory, our finding revealed that hybridity characterises *weak ties*. By combining disciplines, we argue that bridging narratives of social entrepreneurs would

be considered *weak ties* in the network with a constructive approach to minimise energy poverty by adopting the role of connectors of social entrepreneurs. Currently, there is no identified bridging position in the energy poverty network, and actors are separately embedded in their context without even recognising such network. This research advocates that a clear bridging position may be formed and institutionalised temporarily through the social enterprise (avoiding the risk of accumulating intermediaries which complicate or generate a burden in the field).

5.1.2. Theoretical contribution of boundary social intrapreneurship department toward weak stakeholders

The idea of 'bridge building' challenges the CSR literature when social intrapreneurship intermediates between corporations and vulnerable energy communities. There is a double benefit related to energy poverty with our proposal to corporations. First, vulnerable stakeholders may acquire greater visibility and gain priority in corporations. Second, social intrapreneurship would be the profile needed in the organisational change toward the prioritisation process. The agency and legitimacy of social intrapreneurship may be extended thanks to its adaptative capabilities inside the energy corporations to change logic with legitimation, salience, and urgency (Dart, 2004; Mitchell et al., 1997). The hybrid nature of social entrepreneurship acquires research focus again to connect narratives in energy corporations to develop the social logic with organisational functions within the stakeholder perspective of CSR. Chapter 4 comprises conceptualisations without data (see MacInnis 2004; Yadav 2010).

With this critical advocacy contribution, we identify and understand the conditions needed for social intrapreneurship to enter the corporation logic (i.e., salience, legitimacy, urgency, etc.) and rebut, challenge, and question the failures, bureaucracy and traditional approach of the CSR. This novel proposal challenge energy corporations through new social innovation practices. This model promotes the appropriateness of micro attributes such as legitimacy, urgency, and salience and macro framework such as energy justice to approach vulnerable communities to the corporations' core through organisation-specific departments that may change the weak to powerful stakeholders in the stakeholder's map.

We also develop how the organisational proposal presented in Chapter 4 helps challenge the risk of social washing advocating a new organisational structure: a social

intrapreneurship department in energy companies designed exclusively to mitigate energy poverty, the “Social Energy Department” (SED). SED's functions could be associated with the different causes of energy poverty. Coming back to the definition of energy poverty as the inability of a household to maintain adequate temperature conditions and other energy services at a reasonable price, we claim that social innovation can provide alternative and multidisciplinary solutions through proximity. Based on this we propose a boundary and spanning (Aldrich & Herker, 1977; Leifer & Delbecq, 1978) department that would incorporate the logic of social entrepreneurship and innovation with hybrid skills profiles (both social and technical), acquiring the required legitimacy (Dart, 2004; Nicholls, 2010; Suddaby et al., 2017; Suddaby & Greenwood, 2005). A department close to the reality of the experience of the vulnerability may facilitate the developing of interventions and activities to tackle the diverse causes of energy poverty. The environmental aspects (or the *eco-vision*) are more accepted in practice than the inclusion of vulnerable groups as a priority for energy companies (Fineman, 1996). However, relevant social practices will increasingly be demanded from corporations (Bryson, 2004).

We describe the conceptual process model starting with the type of profiles required. Only social intrapreneurs with bridging vision may have the necessary capabilities for this position. The extremes of purely business or social activist narratives are inappropriate for the network. Business narratives may not have developed sufficient social capabilities to deal with vulnerability. The social activist narrative may not yet be ready to work with the corporation, one of their principal adversaries. Legitimation through the energy justice framework would enhance the internal support to SED and the dissemination of the social intrapreneurship logic for the re-orientation of the incumbents in the transition (Geels, 2021).

Chapter 4 presents an advance to the CSR literature and to the energy poverty literature through the study of collaborative interaction of less explored actors of the energy poverty network and corporations. The model aims to bring the vulnerable stakeholder to the centre of the stakeholders mal by the intermediation of social intrapreneurship. Developing social innovation initiatives concerning vulnerable communities may provide lines of action to convert weak stakeholders into substantial stakeholders of corporations. The social intrapreneurs may play a role in transforming the corporations' logic. A first exploration of social entrepreneurship within this powerful and influential actor in the

network finds the inability of a large organisation to act with and for marginalised stakeholders, as are the vulnerable communities suffering from energy poverty. The SED´s objective would deal directly with the weakest actors in the stakeholder map of the corporation. Vulnerable consumers would adopt a priority position in energy corporations, which is not obvious. A new logic does not mean substitution but interaction and adaptation between actors for a gradual transformation of the company (Avelino et al., 2017; Hockerts & Wüstenhagen, 2010; Sovacool, Turnheim, et al., 2020; Turnheim & Sovacool, 2020; van der Schoor et al., 2016). This proposal could become a deep organizational and cultural shift by adapting traditional companies under the umbrella of the energy justice framework (Bartiaux et al., 2018; Hiteva & Sovacool, 2017; McCauley & Heffron, 2018; Sovacool & Dworkin, 2015).

We argue that the design of the new department may reduce the number of vulnerable consumers (Aldrich & Herker, 1977), providing richer content to the "S" in the environmental, social and governance criteria of the non-financial information currently required in the financial statements. Although the purely economic and social logic may seem contradictory (Mitzinneck & Besharov, 2019b), the hybrid spirit of SED (Kistruck & Beamish, 2010; Nandan et al., 2015; Summers & Dyck, 2011) may be a pioneering and visionary model for co-responsible action in the just energy transition. This formula, an alternative not exclusive to the CSR department, might allow for long-term strategic positioning with a high potential to influence other actors such as competitors, regulators, and policymakers.

Government should provide resources to tackle energy poverty as the main guarantor of rights, but it is not a task for a single actor alone. Other powerful actors, such as energy corporations, may be increasingly committed to the problem. SED could affect the organisational and strategic design and have relevant implications on the stakeholder map. All vulnerable consumers would be easily identifiable by the company due to the proximity of the intermediation. Interventions would be carefully designed to empower vulnerable people and improve the energy efficiency of their homes (Butler & Sherriff, 2017; Creutzfeldt, 2021; Gouveia et al., 2019; Hanke & Lowitzsch, 2020; Martín-Consuegra, 2013). There may even be avenues for energy companies to explore the potential of impact investment as a financing alternative. It is emphasised that this approach

needs to be persistent and should not be abandoned if there is a lack of visible impact in the medium and long term.

Another element of the proposed organisational model proposed by the SED is the involvement of the energy justice framework, which would make it possible to introduce and develop the logic of social intrapreneurship acting as an agent of change (Hockerts & Wüstenhagen, 2010) leading to greater resonance and repercussion in other actors inside and outside the company. Not forgetting that energy poverty is about the people who suffer from it. The energy justice framework (Bouzarovski & Simcock, 2017; Hiteva & Sovacool, 2017; Jenkins et al., 2020; Sovacool & Dworkin, 2015) needs much reflection and special care to realign values and balance power differentials between strong and weak stakeholders.

We build on the notion of boundary organisations (Aldrich & Herker, 1977; Berkes, 2009; Leifer & Delbecq, 1978) to suggest an innovative organisational structure that focuses on the increasing salience of weak stakeholders in energy and corporations from the energy justice approach. It is important to remark this gradual transformation approach versus the revolutionary replacement of the energy system. (Geels & Schot, 2007; Köhler et al., 2019; Schot & Geels, 2008; Sovacool, 2016). Boundary departments close to the B-Suite are required to reorganise the stakeholders' map. The introduction of this bridging department in energy companies could be seen as a transformative experiment to accelerate the fair part of the energy transition. Social intrapreneurs with "frontier" (technical and social) capabilities to deal with actors outside the company would be placed on the same level as the other departments. These transformative actors could adopt social business models targeting vulnerable consumers as special and priority customers. We also recommend that any activity dealing with vulnerable communities is always under the supervision of a team of social workers (Nandan et al., 2015). We seek to establish this process model in the energy poverty or transition literature and invite others to utilise it, adapt it and critique it.

5.2. Practical implications

This section reflects the main implications of the thesis's findings on policymakers and other actors within the energy poverty network.

5.2.1. Policy insights

Across the existing evidence of policy publications, the experiences of different actors continue to remain largely disconnected. However, the experience of energy poverty is not isolated to one demographic group. The efforts of the energy poverty network should ensure that the voices of all those who are 'vulnerable' or 'at risk of vulnerability' are heard, including the perspective of the actors working on energy poverty (Bouzarovski et al., 2020; Guyet, et al., 2018). Tackling the problem requires complex interventions in different policy areas (not limited to energy, social, taxes, and housing) (Cadaval et al., 2022). However, relatively few policies underscore the potential of the supporting role of intermediates with hybrid capabilities in the energy poverty network.

Further research on private (or public-private) interventions in energy poverty should help design better-informed public policies (Middlemiss & Gillard, 2015). Policymakers are called to interact in positive ways with all these initiatives. Proximity and an understanding of the context by social entrepreneurs are a source of social innovation that can provide new lenses and valuable ideas for policymakers to develop energy poverty strategies. The bridging role of social entrepreneurs between vulnerable groups and politicians could offer new avenues for research in energy poverty that enable human-centred aspects are reflected in regulations and legislation in energy.

Energy poverty policymaking occurs at different levels (European, national, regional or local). European countries work at different speeds in terms of progress towards official strategies to minimise energy poverty. This research has a European focus, but due to the proximity to the Spanish context, the policy insights attempt to cover the Spanish national level, with an emphasis on the implementation of the last sections of the published National Strategy against Energy Poverty 2019-2024 in Spain (the Spanish EP Strategy) that are still underdeveloped and of the practical implications of this research may enhance confidence and provide knowledge on the capabilities required in energy poverty.

Policymakers should set clear rules but also implement them. To illustrate, we refer to axe IV of the Spanish EP Strategy issued in 2019.The full strategy must be implemented before the execution period for such legislative development ends. We want to call the attention to the Spanish Ministry for the Ecological Transition and the Demographic Challenge ("Ministry of Energy") to continue working on implementing the Spanish EP

Strategy, and even more so, given the geopolitical situation of Russia-Ukraine and its energy consequences. Notably, our policy insights may provide clarity to implement the following political lines of the Spanish EP Strategy (Foronda et al., 2021).

> *Line 7 - Action by professionals in the fight against energy poverty*
> *Line 8 - Improving information and training of consumers*
> *Action 14 - Establishment of mechanisms to raise awareness and generate collective awareness of the problem of energy poverty in Spain.*
> *Action 15 – The website is a general access point for information on energy poverty.*
> *Action 16 - Carry out communication actions on the use of smart meters.*
> *Action 17 - Information on consumption habits, improvement of energy saving, and efficiency*

The focus on energy poverty matters. The findings suggest the recommendation to train and professionalise the energy poverty ecosystem to be close to the context from each actor's perspective. It is important to note that households affected by energy poverty cannot exit situations of energy poverty in isolation (Bouzarovski & Petrova, 2015) but only as a result of interactions with other stakeholders involved in providing or facilitating the household's access to energy services. Thus, energy poverty depends on relations among various stakeholders (Middlemiss et al., 2019). This consideration should be heard by the corresponding policies, and based on this, we make the policy insights.

In the policy recommendations section, we disclose the need to construct a supportive energy poverty policy environment to visualise the network and enhance the capabilities of some actors that are currently not recognised. However, given the diversity of actors referred to in the energy poverty literature (Grossmann et al., 2021), we provide policy insights addressing the general network and in particular the social workers and the social innovators in energy poverty. We intend to shed light on unexplored areas of business and organisational challenges introducing social innovation in the policy related actors through the opening policy lines in energy poverty with the following three policy instruments:

(i) the creation and allocation of resources to the Energy Social Worker

(ii) The implementation of regular meetings of the Energy Poverty Roundtable mediated (temporarily) by social entrepreneurs

(iii) the recognition of the importance of energy social innovation through financial and other forms of support.

5.2.1.1. The creation and allocation of resources to the Energy Social Worker

Policymakers should not only ensure that the basic needs of vulnerable households are satisfied by the social services but also explore other policies domains not considering energy poverty as a purely social issue (Bouzarovski & Petrova, 2015). Public authorities should cooperate in the achievement of SDGs and the introduction of impact investment. However, there is currently a problem of (i) saturation of the social services to manage the social bonus or to carry out specific activities against energy poverty; and (ii) lack of technical knowledge about the main causes affecting the problem. Energy poverty policies should not be subject to changes in political parties (Power, 2018). Integrating hybrid figures with technical and social skills in energy poverty also requires top-down public support. Social entrepreneurship may be the network coordinator temporarily until the public administration assumes the driving force role in the network. New social energy innovation policies could contribute to new initiatives of collective social entrepreneurship (Martiskainen et al., 2018).

The state is the guarantor of rights and shall also provide the required training to social workers enhancing with social innovation (Nandan et al., 2015). There is evidence of this problem in the energy poverty literature, and we highlight the crucial role of municipalities in alleviating energy poverty. A great example is the pioneer reference of the community energy initiatives to alleviate fuel poverty of Energy Cafés in the Uk (Martiskainen et al., 2018). Another example is described by Okonnen and Lehtonen (2016) through a case study of wind projects in the north of Scotland that highlight the problem of the competencies of the administration on issues related to energy poverty and energy system issues in general. They provide evidence of the local government lack of technical capacity to deal with complex problems that mix sustainability and energy poverty. We remark how it a success factor if the leaders of energy projects in local councils are fully trained in all technical and social skills. Patkos et al. (2019) studied Hungarian local municipalities councils and point out their relevant role vis-à-vis central government

in shaping adequate responses to energy efficiency and renewable energy sources due to proximity. Moreover, we utilise the examples of the home energy advisors or the green doctors to illustrate the specialisation in minimum energy technical knowledge and competences that are needed (Sdei et al., 2015).

Economic incentives, such a as the social bonus, cannot be the only policy solution to energy poverty (Cadaval et al., 2022). In processes of accompaniment and energy advice, cases have been reached in which up to 72% of the households attended to did not have the social bonus despite being eligible for it. In the multi-actor approach required to reduce social problems, univocal perspectives should be avoided. European and national strategies for tackling energy poverty still need to recognise this. All actors must acknowledge the unaddressed complete picture of a (formally or informally) coordinated network. Grossman et al. (2021) also mention how private networks can be supportive. The critical conclusion of Grossmann's (2021) indicate how *the experiences of energy poverty and contact with institutions, as well as the dimensions of trust, can increase or decrease peoples' capacity to cope with energy poverty and get the help they need*. The social workers in energy poverty fold energy poverty into their existing remits and maintain their previous tasks. They should receive specific training in energy issues and be aware of good practices of energy poverty activities such as, in a non-exhaustive list, replacement to more energy-efficient equipment and appliances, retrofitting grants for vulnerable families and tenants, subsidies for energy supply costs, housing rehabilitation with passive and active measures, identification of signs of energy poverty, information and energy empowerment seminars. Those aids are not implemented, so there is still some to do.

Social assistance programs and interventions designed specifically for energy poverty still need to be implemented. The development of energy policies applies to the proper target. The most efficient way to protect energy customers is to channel the aid through existing energy assistance programmes that rely on clear targeting strategies. This approach requires a more significant administrative effort to guarantee a better exploitation of the available resources (Batlle et al., 2020). These programs may support the reduction of energy use (Broberg & Kazukauskas, 2015).

Based on this, we want to propose an innovative figure: the Energy Social Worker. The work of social workers is limited to their task, without the possibility of dealing with all the associated problems. Only some social workers can deal with energy poverty

because specific technical knowledge is required. Social innovation may enter into the public sector. The public sector needs to develop and foster internal hybrid and coordination capabilities like social entrepreneurs (Franz et al., 2012; Nandan et al., 2015) and aligned to social innovation. In other words, social workers should have specific training in energy poverty to develop their tasks properly. Such training is currently a low priority. The new figure of the Energy Social Worker would have as a priority the development of all the functions related to energy poverty. This figure should possess the required skills or receive sufficient and quality training to develop all the activities required in the Spanish EP Strategy without the social services also having to choose between helping those who cannot eat and helping those who are cold (Bartiaux et al., 2018). It would also be the responsibility of the Energy Social Worker to develop relations or coordinate with entities external to the public sector (such as NGOs, consumer associations, corporations or social enterprises) for all activities related to raising awareness of the problem, identification of vulnerable families, and training in energy issues such as billing and consumption reduction, consumption habits that allow savings, low-cost improvements, etc. As this is a new activity, it needs special recognition to be institutionalised in the energy system as a public open social innovation system.

Another policy recommendation is to recognise social enterprises and NGOs' to support the Social Energy Workers in energy poverty activities and to fulfil the objectives of the Spanish EP Strategy. The national public administration should facilitate collaboration between social services and NGOs or social enterprises that act with alternative social innovation mechanisms and serve as intermediations and bridges between vulnerable consumers, energy corporations and administration.

The impulse of the collaboration between private companies with the third sector and the administration to tackle energy poverty may generate more cohesion in the network and develop innovative joint solutions. An example to illustrate this collaboration are studied in the Living Labs in Cahors (Claude et al., 2017). We also compare this proposal with the case of Home Energy Services in Scotland to show an advanced local international public sector practice. A description of Home Energy Scotland is included in turn.

Home Energy Scotland (HES) is a network of local advice centres covering Scotland. Their expert advisors offer free, impartial advice on energy saving, keeping warm at home, renewable energy, greener travel, cutting water waste and more. HES is funded by the Scottish Government and managed by Energy Saving Trust, and HES's mission is to help people in Scotland create warmer homes, reduce their bills and help tackle climate change. *https://www.homeenergyscotland.org/*

5.2.1.2. Energy Poverty Round Table

Regular meetings in the network could be an instrument to implement the objectives of knowledge dissemination and reduction of information asymmetry (Joskow, 2007) from the Spanish EP strategies that require further implementation. More visibility and equal participation of all actors is an area to follow with public action. Coordination of the network is key to avoiding harmful outcomes in policy implementation. Enabling hybrid capabilities required to address energy poverty needs to be better understood. At the same time, there needs to be more clarity, guidance and support regarding the network and the role of actors in European. Due to our proximity to Spanish legislation, we are going to provide policy insights in relation to Spanish policies. The overall results of this research evidence the need for more interaction through frequent roundtables between all members of the energy poverty network and the social entrepreneurs' coordination (temporarily). We point out the temporality because the coordination position may be institutionalised under the responsibility of the Government through the Ministry of Energy if we follow the logic of the Spanish EP Strategy. Those roundtables still need to be institutionalised in European countries, where the networks are fragmented and non-structured (Bouzarovski et al., 2020; Guyet et al., 2018).

The collective perspective may enrich policymakers' views and is key to understand and develop complex, contradictory, and emotionally charged policies. In interpretative

techniques, the first step would be calling for a diverse public forum to capture diverse experiences, meanings, and conflicting interpretations in real-world and dynamic contexts to avoid the dangers of unidimensional and static approaches (Yanow, 2000). Policies should not be instruments of exclusion but capture plural voices in a multi-actor process integrating multiple discourses into a collective voice to influence dominant (and non-dominant) actors and building receptivity to pluralism (Huybrechts & Haugh, 2018). Policy approaches should include specific protection for such interaction spaces until cohesive networks are fully institutionalised (Hess, 2018). Special care should consider the balance between the risks of solutionism and experimentalism with the risk of scalability in vulnerability (Pfotenhauer et al., 2022).

The collective nature of social entrepreneurship and the human-centred approach to energy poverty may provide policy insights to inclusively consider the different dynamic perspectives of the actors involved as humans with feelings (Grossmann et al., 2021). The just energy transition context requires the institutionalisation of inclusive and holistic practices. The consolidation of the emerging energy poverty network may legitimise the role of each member, foster each advocacy effort, and help the transformation of the social entrepreneurship niche to become a more influential hybrid entity within such a network (Huybrechts & Haugh, 2018). Such interaction might help actors adopt specific ideas that are not initially their own so that the original ideas may change by this process, raising collective reflexivity and constructing an environment that contains institutional trust to align exchanges between actors (Grossmann et al., 2021; Smith & Stevens, 2010).

The Government (or, temporarily, the "bridging" social entrepreneurs as *weak ties* drawing from the network theory) could facilitate spaces to elevate voices and inclusivity. In this context, bridging narratives of social entrepreneurs may help understand the diversity of the members' narratives, connect the *weak ties*, facilitate possible exchanges, and integrate the policies bottom up. Dynamic networks may propose territories for thoughts about different personal and collective concerns, always with critical and self-critical interest (Jenkins et al., 2020). The Social Table ("*la Mesa Social"*) noted in the Spanish EP Strategy has not been regularly implemented with a formal invitation to all actors. Regular coordinated meetings foster productive interaction (Muhonen et al., 2020; Spaapen & van Drooge, 2011).

Despite the risk of short-term counterproductive outcome, we argue that developing network dialogue is positive and relevant to alleviate energy poverty. The cohesion of the network cannot be embraced superficially since it may lead to further mistrust. The relationship in the network shall be assumed more deeply, with a critical lens to recognise different interests and powers and to concern narratives and positions (Delina & Sovacool, 2018) to lead to some desirable outcomes for all, assuming inevitable trade-offs. Greater attention to network cohesion, compromise and multiactor communication in all its forms is vital (Crane & Livesey, 2017).

We want to underscore the relevance of the participation of all stakeholders in the energy poverty network and the focus on a collaborative community at the centre of designing appropriate public policies in energy poverty. This thesis builds on the connections between the members of the network and their composition towards such network. Therefore, the potential relationship between social entrepreneurs and the different actors through a scheme of a collaborative energy community network is depicted in Figure 5.1. below. This vision may be a departure point of a challenging approach to analysing the diversity of energy initiatives and their positioning within the network (Power, 2018).

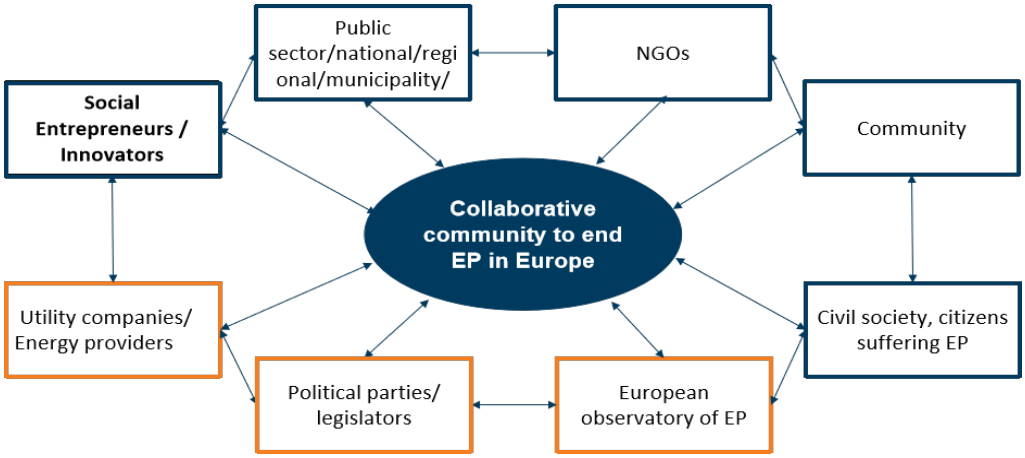

Figure 5-1 Energy poverty collaborative community network

Since vulnerable families tend to be primarily seen as passive subjects in communicating their situations to enrich energy public policy, future policy should target them directly and increase the trust (Grossmann et al., 2021). Active citizens may be involved in policy generation related to issues affecting them. However, citizens do not easily engage the same way as other more influential actors. Therefore, innovative

approaches to engagement, such as the Energy Poverty Round Table proposed in this section would need to be carefully considered and implemented.

5.2.1.3. Recognition of the importance of energy social innovation through financial and other forms of support.

The State is responsible for ensuring the granting of full energy rights to all society. Also, governments are critical in implementing and coordinating policy actions, aligning all stakeholders and setting out ambitions for the future to realise the policy targets. Moreover, the government can promote the minimisation of energy poverty by fostering other actors' initiatives. One proposal recognises the introduction of SEDs formed by social intrapreneurship in corporations to address energy poverty (as elaborated in Chapter 4).

We recommend the policymakers to promote top-down social innovation. The level of recognition could be in the range of mentioning social innovation in energy poverty in the legislation as good practice for corporations to obtain extra punctuation in energy auctions, tender processes, financial aids, or tax incentives. The encouragement and financial support to social innovations programmes for good practices at the national level will potentially accelerate the bottom-up replication devoting a smaller percentage of the Ministry of Energy budget. Through this recognition, innovative niche initiatives may scale up and be extended to other locations currently less exposed to social innovation.

Line 8 of the Spanish EP Strategy deals with improving the information and training of energy consumers. Still, there needed to be publicity and awareness-raising campaigns, or training sessions led by the government and clear leadership from the government in organising seminars with all actors. The sense of belonging could increase through a social innovation platform that could gather information from all relevant (or not so relevant) private and public initiatives to be developed. This is specifically addressed in measure 15 of Line 8. Communication actions on the use of smart meters (measure 16), initiatives to impulse the change in consumption habits, and improve energy savings and efficiency (measure 17) could be led by social entrepreneurship until the government assume this leadership (Foronda et al., 2021). A permanent updated channel of communication on energy poverty with insights into all actor's perspectives is still the execution of measure 18 of the Spanish EP Strategy. But this action needs economic incentives or at least different forms of recognition. Energy demand needs to decrease to achieve the

decarbonisation objectives, but no action was undertaken in the energy poverty domain. In relation to section 5.2.1.1. above, the Energy Social Worker will also be exposed and connected to this platform as a single point to introduce and share good practices.

To illustrate, the government could recognise social innovation in corporations and their impact in the reduction of energy poverty in their endeavours towards vulnerable communities. Chapter 4 proposal to include social intrapreneurship in energy corporations may have a relevant impact because it would introduce social activities within a company business, which traditionally has a market logic. Energy policies could incentivise such SED departments with monetary or non-monetary recognition to support the transformation from a business perspective. The introduction of this type of departments in the legislation suggested (or obliged) by implementing the Spanish EP Strategy will be a major step forward.

Hence, social innovation and social services have the potential to impact energy poverty (Antepara Lopez de Maturana, 2020). For promoting social innovation, we stressed the need of consistent financing for social innovators through the development of social innovation platforms to provide visibility and channel rewards and specific funding. However, today the financing approach of coordination activities and platforms providing visibility to alternative voices is absent, even if those measures are expressly included in the objectives of the energy poverty strategy.

5.2.2. Other implications for diverse network actors

In addition to the policy recommendations implications derived from our findings, other insights are provided to other actors in the network. The activation of multi-action is required to overcome the challenges across all groups acting in energy poverty. There is not a unified recipe for all actors. Instead of focusing on technology solutions for energy poverty, our results focus on the human-centred approach and in energy justice principles, the cohesion of the network and the role of the collective social entrepreneurs as coordinators of the connections in energy communities.

Jenkins *et al.* (2018) called for more research on non-traditional actors in the framework of energy justice dynamics, multilevel approaches, and other transition theories. Looking at the energy poverty network, we revisit the dynamics of operation, interactions, limitations, and processes of value creation of collective social entrepreneurship

(Martiskainen et al., 2018) to examine the roles and capacity building of community organisation (Okkonen & Lehtonen, 2016). Social entrepreneurships incorporate a triple-bottom-line approach (economic, social, and environmental) and consider the wide range of interests among the spectrum of stakeholders. Awareness of energy poverty as a global challenge and its scientific approach is a need (Bouzarovski & Petrova, 2015; Imaz & Sheinbaum, 2017). The identification and understanding of the stakeholders' position, power and interest in the ecosystem and its relationship are essential for its coordination to provide an alternative (no single) solution with the problem (Mitchell et al., 1997). A holistic and critical vision that considers the context is required (Picciotti, 2017; Sahakian & Dobigny, 2019).

Therefore, this research would have implications for the following members forming the energy poverty network:

- People in situations of energy vulnerability and energy poverty, in isolation or belonging to communities or consumer associations, should be heard on a case-by-case basis. This study enriches indirectly the understating of their needs, their fear of stigmatisation through social entrepreneurship which action makes sense for and with people under energy vulnerability. Increasing awareness of the problem with a human-centred approach with the involvement of the people suffering from the situation may give them a voice (Bouzarovski & Petrova, 2015). Any human-centred intervention shall avoid commercialisation approaches in poverty (O'Brien & Hope, 2010). Bottom-up social innovation could be the breeding ground for future policies (Okkonen & Lehtonen, 2016). The green transition should be just and inclusive. Contributions attempt to guide other scholars but also advance in consolidating relatively new disciplines that transversally affect the lives of marginalised groups.

- Organisations in the private sector, including but not limited to, social entrepreneurs, small companies, third sector like NGOs or foundations, or other legal entities that may contribute a grain of sand to the solution of energy poverty with social innovation activities or through the coordination of the networks. They may put energy justice principles into practice to solve energy poverty. This research may be helpful to improve their visibility, training, activities, scaling views, management, processes, financing models, social perceptions, routines, and culture. This study may support the role and flexible development of the *alternative economic spaces* as defined by Gibson-Graham

(2008). Collective social entrepreneurs and other members of the network, such as volunteers, social and other related public administration workers, members of the communities, consumer associations, etc., will have guidance in different areas to implement and develop their ideas and have easier access to financing (Campos & Marín-González, 2020; Caramizaru & Uihlein, 2020; Hanke & Lowitzsch, 2020; Reis et al., 2022; Roberts, 2020; van der Schoor et al., 2016; Walker et al., 2010).

- Corporations, utilities, large and medium energy companies, and other corporate actors involved in any value chain may be affected by the social entrepreneurship. This work may help understand the interests of each stakeholder and the accountability of energy poverty in their financial (and non-financial) statements. Those actors should consider this research for social innovation corporate venturing into energy poverty and orient their investments from pure profit to social impact. Companies must collaborate with the actors with whom they share the ecosystem to develop innovative solutions to ensure their future competitiveness jointly. The social aspects of energy are critical to the sustainability strategy of energy companies and can be acquired through collaborative programs of open social innovation. Collaboration among NGOs and social entrepreneurs with multinationals has thrived in the last decade (Nelson & Jenkins, 2006). However, the incorporation of the niche of social entrepreneurship (Dacin et al., 2011) within the organisation of the energy regime (particularly in utilities) could be further developed, and this work could follow this line of research to extend the social entrepreneurship theory. The role of the utilities through social corporate venturing and open innovation programs in energy poverty to absorb disruptive changes could be developed (Lu et al., 2019). Incorporating disruptive social innovation can completely transform the business of energy corporations. Social entrepreneurship could pass from niche to regime and help the incumbent utilities adapt to the just energy transition (Turnheim & Sovacool, 2020).

- Financial entities or other resource providers (including and not limited to traditional and impact investment) are interested in global problems such as energy poverty (Oberoi et al., 2021; Schoenmaker, 2017). Governments need to recognise that investment in social innovation may lead long term minimisation of energy poverty. Other actors, such as impact investors, corporate venturing, green finance, and green and social bonds issuers, are critical in interacting with the energy poverty network. We argue that private financing should support the long-term sustainability of social entrepreneurs.

- Academics. The role of universities in *responsible research* may include research on business models that integrate the best practices to reduce energy poverty to disseminate to society. Research on social innovation in energy poverty may need a more realistic approach that allows the scholar community to be connected to provide partial solutions to energy poverty (Imaz & Sheinbaum, 2017; Jenkins et al., 2020). Reducing the gap between academic research and business practice in social sciences could improve the disseminations of social innovation and the spread of other successful ideas in other contexts. Management education could include social entrepreneurship studies at all levels to contribute tackling global problems of the new world also from a management perspective (Oberoi et al., 2021).

5.3. Opportunities for future research

This section provides a roadmap of potential future studies or areas of inquiry at different levels to be developed in the energy transition. With such a limited body of existing research focused on the nature and experiences of social entrepreneurship in energy poverty, it was expected that several avenues for further research would be identified. Indeed, from academia, the lines of research can advance knowledge in the just energy transition (Feola, 2020).

A reflection on which type of collaboration through alternative businesses and the reason for the need for partnership to join forces are questions that scholars may pose. The collective dimension of social entrepreneurship and the community approach to energy poverty (and to the energy system) is central to the avenues for research stated by this thesis. The collective dimension is critical in social entrepreneurs and other actors exercising agency in energy poverty interventions. More research on the collective attributes of social entrepreneurs as coordinators and intermediaries could become a mature field as an alternative space (Gibson-Graham, 2008). The individual is superseded by the collective approach (Burress & Cook, 2010; Mato-Santiso & Rey-García, 2019). This collective figure entails tensions that may be understood in the complexity of the context (Mitzinneck & Besharov, 2019, 2019). The transfer of capabilities and partnership generation between private and public actors may facilitate the achievement of broader impact and a single objective shared by the whole network to eradicate the problem of energy poverty (Martiskainen et al., 2018).

The energy poverty network is informally formed by different types of members acting in isolation. In this network, there is a need for intermediation and improvement of the members' relations (Hockerts & Wüstenhagen, 2010; Sovacool et al., 2020) Energy poverty needs to be at the centre and analysed in-depth through communication, active listening, information asymmetry, and awareness of social changes. The social energy side that blossoms sporadically in growing research and policies shows a higher interest in a new perspective on energy businesses as usual.

Section 5.3. underlines how our investigation might enhance future scholarly work. This work aspires to contribute to the conversation on social entrepreneurship and energy poverty through several lines of future research.

5.3.1. Hybrid capabilities of social entrepreneurship

Energy poverty is not only one dimension of poverty, although there is a consistent association between energy poverty and affordability (Ayllon & Jenkins, 2023). Specific knowledge, technical experience, and social skills are demanded to deal with the complexity of energy poverty, given its difference from other aspects of poverty. Social entrepreneurs in energy poverty present hybrid technical and social capabilities, enabling constant learning, developing trust, and building coordination through their day-to-day practice (Mair & Martí, 2006; Walker et al., 2010). Our findings call for more consideration of the adequacy of the hybrid nature of social entrepreneurs to tackle energy poverty (Grossmann et al., 2021; Walker et al., 2010; Żywiołek et al., 2022) Social entrepreneurs may have or may acquire such technical knowledge to understand and explain the complexities and asymmetry of information in the energy system (Joskow, 2007). They have social skills due to their proximity to people suffering from energy poverty (Gupta et al., 2020).

Furthermore, as energy poverty is marked by collective and network dimensions (Day et al., 2016; Middlemiss et al., 2019), the research emphasises how the hybridity nature of social entrepreneurs working in energy poverty builds on trust, communication and other coordination skills directed towards the activation and understanding the experiences of and among all players (Montgomery et al., 2012; Jenkins et al., 2018; Piccioti, 2017; Okkonen, and Lehtonen, 2016; Sahakian and Dobigny, 2019). Therefore, social entrepreneurs might play a productive function in training different skills in all

players involved in the problem of energy poverty from a co-creative path (Prahalad & Brugmann, 2007), paying particular consideration to the role of governance (Bruneel, et al., 2016) and especially to the active involvement of voice and effective participation of the underrepresented people suffering from energy vulnerability in the energy system (Campos & Marín-González, 2020; Hess, 2018).

5.3.2. Network challenges to tackle energy poverty

Energy democratisation is raising academic interest, including the influence of social innovation (Campos & Marín-González, 2020; Roberts, 2020). We are drawing from the picture of a fragmented network. We propose more research on the unclear identification and attributes of the different members of this network (Guyet et al., 2018; Kalt et al., 2019; Nandan et al., 2015), explicitly pointing out the position of the social entrepreneur to insinuate future lines of research on coordination and intermediary capabilities (Gupta et al., 2020). We acknowledge that the robustness and strength of ties in the network are critical to alleviating energy poverty. Nevertheless, there are numerous challenges to academic studies to minimise the lack of connections in the network that are notably relevant to the energy system, such as the asymmetry of information, unawareness and ignorance of the network, and the inexistence of technical or social training and significantly accentuated in the public administration (Bale et al., 2013; Claude et al., 2017; Elia & Margherita, 2018; Knuth, 2019; Martiskainen et al., 2018; Rittel & Webber, 1973; Webb, 2015).

The network challenges are also approached by transition literature (Hockerts & Wüstenhagen, 2010; Sovacool, Turnheim, et al., 2020). The analyses of the hybrid character of social entrepreneurs may help intervene in such a fragmented network. At the same time, future transition literature studies might focus on actors' agency, strategic niche management, transition management, and multi-stakeholder partnerships theories (Geels, 2014, 2019; Geels & Schot, 2007; Hockerts & Wüstenhagen, 2010; Schot & Geels, 2008; Smith, 2007; Smith & Raven, 2012; Sovacool, Turnheim, et al., 2020; Turnheim & Sovacool, 2020).

We suggest more research on how each actor becomes conscious of his role in the network and its relationship with the members (Bale et al., 2013; Littlewood & Khan, 2018). This focus may be helpful to other energy research fields to nourish content to the

social aspects of the transition. To illustrate, The “S” of the "ESG” criteria is also acquiring relevance since their non-consideration puts the expansion and implementation of renewable energy projects at risk. Social innovation in energy poverty can be institutionalised through good practices in energy poverty through sustainability plans of renewable energy projects. Such plans promoted by the just energy transition will receive greater attention in the growing number of renewable energy projects or decarbonisation projects and maybe one potential vehicle to incentivise rural community development and profit distribution to the project territory. Energy poverty should form part of such a vision (Sovacool, 2014).

5.3.3. Studies of person-centred intervention in energy poverty.

There is undoubtedly a broad scope to expand upon what is already known concerning person-centred interventions in energy poverty, t. There are different activities and domains where social entrepreneurs and social innovation could act in the field of energy poverty, addressing each of the causes of the problem. A scholarly study of the interventions unveils an opportunity to further examine the domains of energy efficiency, social housing, and green retrofitting as practical solutions to tackle energy poverty that different actors may develop in the energy poverty network (Bale et al., 2013; Dineen et al., 2015; Knuth, 2019; Osunmuyiwa & Ahlborg, 2019; Santamouris, 2016; Sdei et al., 2015; Streimikiene & Balezentis, 2019; Webb, 2015). Outside dominant approaches focused on income-based solutions, more user-centred processes, humanising development, and co-innovation with vulnerable consumers are more aligned with the complexity of the problem (Boni et al., 2016; Claude et al., 2017; O’Brien & Hope, 2010). More research on energy-empowering activities may extend the boundaries of the traditional approaches to energy poverty studies and impact long-term plans to alleviate the problem (Datta & Gailey, 2012; Hanke & Lowitzsch, 2020; Pareja-Cano et al., 2020).

5.3.4. Energy justice framework to legitimise social innovation and social entrepreneurship in energy poverty

This thesis underscores the notion of energy justice (Jenkins et al., 2018) as an overarching framework for underpinning bottom-up local social innovation initiatives and top-down public policies from a holistic view. A systematic application of energy justice principles

in energy poverty initiatives may encourage inclusivity in the energy transition context (McCauley et al., 2019; Sovacool & Mukherjee, 2011). Thus, more theoretical research is necessary to study social entrepreneurship and social innovation from justice lenses as an integrative and comprehensive framework to adopt a common aim across the energy poverty network (Jenkins, Spruit, et al., 2020; Silvestre & Ţîrcă, 2019; Sovacool et al., 2019).

We claim that more research on a conceptual framework to legitimise action in energy poverty is required. Two main framework approaches stand out from this thesis as avenues of research in the energy poverty field: the capabilities approach and the energy justice theoretical perspective (Elia & Margherita, 2018; Kalt et al., 2019; McCauley et al., 2019; Sovacool et al., 2019). Hence, while, as remarked above, the extant literature on energy poverty eschews a human-centred approach, the findings on the intersection between energy poverty and social enterprise demonstrate holistic, people-centred approaches rather than a limited focus on the technological perspective of the problem.

Moreover, the nascent literature on ethics in social entrepreneurship opens up opportunities for examining the ethical challenges of the energy transition by increasing the visibility of social innovation in energy poverty (Sengupta & Lehtimäki, 2022). Future research on the ethical aspects of the interactions between social entrepreneurs and other actors would call more attention from academics to *responsible research* (Jenkins et al., 2020). Scholars' research could be oriented to make visible the processes that accompany, care for and humanise energy poverty interventions.

5.3.5. Social movements and collective action in the energy poverty network

Similarly, in the body of energy poverty research, the practices and processes involved in forming or providing cohesion to the network need to be addressed more. Potential research on the reinforcement of the energy poverty network, unlocking its doors to all social actors, including vulnerable energy communities, will mature as a shared space in which heterogeneity coexists. The reflection of the social construction and institutionalisation of the network may serve to better understand areas inhabited by all in which minorities participate in building a new collective narrative (Czarniawska, 2004; Kerr et al., 2018; Murray & Ozanne, 1991; Nordstrom & Jennings, 2015; Yanow, 2000).

Social network calls for future research to analyse composition and relationship in emerging networks (Latour, 2011; Littlewood & Khan, 2018; Martí et al., 2017). The function of hybrid actors in activating social relations with others may establish a sense of belonging and commitment toward a holistic vision of social issues (Bauwens et al., 2020; Huybrechts & Haugh, 2018; Middlemiss et al., 2019).

More empirical work on the influence of collective action in the configuration and establishment of the energy poverty network, its affiliations, and its ties is recommended to build a sense of interaction. The discovery of other capabilities of social entrepreneurship may enrich their role in reinforcing the energy poverty network. Using rhetoric in engaging with other actors may be another line of inquiry in social entrepreneurship in energy poverty (Chandra, 2019). The social entrepreneurs' collective dimension and advocacy and social movement related functions enable them to lead the discourse of reducing energy poverty (Martí et al., 2017).

Additionally, the advocacy from social entrepreneurs in line with social movements can be an exciting avenue for research (Campos & Marín-González, 2020; Montgomery et al., 2012; Nordstrom & Jennings, 2015; Roberts, 2020). Understanding the self-criticism and reflexivity of social entrepreneurs could boost the interaction and minimise the potential barriers between the activist and business members of the network.

5.3.6. CSR stakeholder management perspective to approach weak communities to corporations

The last part of the thesis introduces the phenomenon of social intrapreneurship in corporations. Current corporate structures in large-scale energy companies contribute minimally to minimising energy poverty and are sometimes even accused of perpetuating it (Campos and Marín-González, 2020). More studies on how such corporations could significantly influence the integration of vulnerable communities could be of interest.

A critical avenue for extending CSR theories is needed. CSR has known limitations in dealing with social problems through the stakeholder management approach (Bryson, 2004; Gallo & Christensen, 2011). This may be mainly due to the limitations of conventional CSR approaches to care for social problems and, specifically, interacting with vulnerable stakeholders. The study of social intrapreneurship in CSR may lead to a step forward in stakeholder management of vulnerable customers of energy companies in

inclusive transitions. Slow transformation pathways would allow the essential elements of the energy companies to remain untouched, which may be more realistic (Geels and Schot, 2007).

Further investigation into the micro attributes of social intrapreneurship within corporations is another interesting line of research (Nandan et al., 2015). Theoretical approaches to the evolution of the salience of vulnerable customers and social intrapreneurs as change actors and how they are perceived and evaluated by the leaders of energy corporations may require further examination and follow-up. Social intrapreneurs are more suitable for dealing with vulnerable customers naturally peripherical to the company, but they both need legitimation. Legitimising new organisation models is crucial to produce experiments in the just transition (Turnheim et al., 2018). Therefore, more research on legitimation and how the energy justice framework enhances the perception of moral legitimation of vulnerable communities could be of high value. (Suddaby et al., 2017).

Moreover, this research also may connect with strategic entrepreneurship research, which integrates knowledge from *entrepreneurship and strategic management* (Hitt et al., 2001). Some strategic entrepreneurship researchers underscore the complexity of science as an alternative theoretical lens for addressing entrepreneurial thematic such as exploration (Geels, 2021), exploitation, opportunity, new micro-macro interaction, and dynamics, and enhancing the potential of social entrepreneurship in a world characterised by *fluctuation, irreversibility, nonlinearity, and instabilities* (Schindehutte & Morris, 2009). Future research may examine new social strategies to strengthen inter-organisational social business and corporate relationships in just energy transitions. Strategic organisational process experiments with transformation potential (Loorbach & Rotmans, 2010; Summers & Dyck, 2011). The proximity of social entrepreneurship to energy poverty may not be easily transferable to larger organisational structures, such as corporations. What appears to be a small organisational change could significantly impact the electricity system (Waddock et al., 2015). As Geels (2021) indicates, business *reorientation* appears more premeditated and strategic than consumer transformation because business actors may have formalised and standardised strategies, but consumers do not.

5.3.7. Organisational models to enable the transformation towards the just energy transition

Organisational studies may contribute to energy system transformation and how energy organisations look at the system meso-level. Our analysis follows the line of research of bridge and boundary departments (Aldrich & Herker, 1977; Leifer & Delbecq, 1978) established to deal with marginal communities and to increase the salience of weaker stakeholders. The formation of corporate bridging departments to address secondary stakeholders' main problems could be further explored. This organisational movement may enable multiple changes on different levels over time. Practitioners may apply complex thinking during the corporate change process, not only in the early phases but also throughout this process, since the points of view of the different stakeholders may constantly change (Mitchell *et al.*, 1997).

Future research could examine the adaptation of bridging departments to diverse political, social, or economic contexts, making the department's priorities vary depending on the vulnerability types. Conducting comparative studies would provide more empirical support for introducing corporate social innovation in energy companies and sectors. To illustrate this, this research in non-developing countries could promote corporate activity on providing energy access in remote areas without access to an electricity grid (the *Last Mile Department)*. Another example could be implementing SED in renewable energy companies. Considering the significant increase in renewable energy generation to achieve the net-zero objectives, the social aspects should be prioritised by positioning the person in the centre. The sustainability plans of the growing number of renewable energy projects or decarbonisation projects promoted by the just energy transition are turning towards community development. Energy poverty should be part of those visions (Sovacool, 2014).

Organisational studies go beyond linear and dual approaches to build around flows, forms and functions towards fluid linkages, flexible rules and processes to shape change (Latour, 2007). A broader understanding of the connection between organisations and entrepreneurship is recognised in the literature but may need more exploration (Nandan et al., 2015). And again, organisational approaches address more and more the idea of networking to encapsulate dynamic and complex organisations' better transformational processes (Chia, 1999).

5.3.8. Transitions theories: more research on niche management for bottom-up social entrepreneurship and innovation and in just transition pathways to accelerate the transition

Social entrepreneurship in energy poverty deserves further scholarly attention in transition literature (Sovacool, 2014). Insights from transition domains should be confirmed in the context of this study. Transitions require fluid, coordinated, multisectoral action (and experiments) to reform the energy domains under current transformation and to harmonise them in a systemic strategy that involves societal actors (Jenkins et al., 2018). The role of social entrepreneurs as social innovators is to collaborate with large-scale companies that are by nature resistant to change in the status quo. Large-scale companies are not well-positioned to deal with vulnerable communities as NGOs, or social companies may be. The social start-ups can interact with the incumbents to foster open social innovation (Sovacool et al., 2020; Turnheim & Sovacool, 2020). The organisational change process could be accelerated considering the crucial role of energy companies as influential actors (Loorbach, 2010). Still, expanding social intrapreneurship into the dominant system may also encourage its transformation (Wesseling et al., 2020).

Future work should focus on the processes by which social intrapreneurs may become *attractors* that transform energy companies towards sustainable development (Waddock et al., 2015) and, in intermediation, bridging the organisational inertia of energy companies with their vulnerable customers. The transition may position social intrapreneurship not to remain a marginal and frontier line movement in the organisations if conducted by other logic or interests that includes vulnerable stakeholders as a central part of its business model (van Zanten & van Tulder, 2018).

The study of the niche and transformation of incumbents from transition research may become relevant in the context of energy poverty (Hillman et al., 2018; Markard et al., 2012; Smith, 2007). Despite this importance, theorising about niches and niche protection is still at an early stage of development. Specifically, one of the open, less studied issues concerns niche up-scaling and niche innovation growing beyond the initially protected space and challenging the existing regime (Loorbach, 2010; Loorbach et al., 2010; Schot & Geels, 2008). It could be an interesting arena to develop further research.

Even though it is crucial for sustainability transitions, empowerment could receive more attention in niche management (Smith & Raven, 2012). However, it is critical for transformational system changes, and social entrepreneurs may play a role in empowering people (Pareja-Cano et al., 2020). Through processes of *stretch-and-transform*, niche actors actively reconfigure the existing selection environment at the regime level (Geels, 2021), and the role of agency and conflicting interests becomes most pronounced. Understanding these struggles may be done through in-depth studying the different narratives advocated by niche and incumbent players. This work could also connect with network theory perspectives in social entrepreneurship (Dufays & Huybrechts, 2012; Littlewood & Khan, 2018; Martí et al., 2017).

We propose more research into sustainable finance to provide alternatives to the apparent lack of availability of massive private funds to mitigate energy poverty (Martiskainen et al., 2018) or to support the nourishing of new business models toward the achievement of energy democratisation (Braunholtz-Speight et al., 2020; Hiteva & Sovacool, 2017; Reis et al., 2021; Smith & Raven, 2012; Vasquez-Delsolar & Merino, 2021; Wesseling et al., 2020).

5.3.9. Energy communities as an active actor in energy poverty: solidarity, social relations, and empowerment

Energy communities are the centre of many discussions (in academia and practice), and multiple challenges are analysed while the figure takes shape in several jurisdictions following the regulatory development (Hess, 2018; Roberts, 2020). Despite the immense potential of energy communities in the energy transition, little interest is undertaken in their role in energy poverty (van der Horst, 2008). Only some energy collectives are concerned about the lack of accessibility and affordability of energy for citizens and households due to high energy prices, low household incomes, energy inefficiency and the particular energy needs of neighbouring families. To some extent, all energy initiatives support the need for energy prices to be affordable, being the economical savings a clear objective. There is still needs of more literature on the impact of the prosumers on eliminating energy poverty. Reducing socio-economic energy access could be explored as a potential goal of the energy communities' movement. Some geographical researchers consider social enterprises and

energy communities as alternative economic spaces from an alterity lens (Gibson-Graham, 2008).

A new line of research would be utilising the energy poverty lens to look at the energy communities' phenomenon (Campos & Marín-González, 2020; Caramizaru & Uihlein, 2020; Hanke et al., 2021; Hanke & Lowitzsch, 2020). Energy communities are considered new types of non-commercial entities whose main objective is to provide social benefits to the community rather than prioritising profit-making. Thus, the spread of energy communities may help implement local sustainability projects that help to achieve energy independence, reduce carbon emissions, and alleviate energy poverty (Peredo & Chrisman, 2006; Picciotti, 2017). Energy communities follow similar principles to social entrepreneurship and are defined as *alternative economic spaces* (Gritzas & Kavoulakos, 2016).

Future research lines are proposed concerning energy communities and energy poverty. First, the co-participation and relationship between several actors within the decentralised business models (Hess, 2018) would enable progress in strengthening the settlement of energy communities and empowering them through prosumerism (Hanke & Lowitzsch, 2020; Roberts, 2020). The collective participation of prosumers in energy projects with social, economic and environmental benefits for society fosters the transformation of the energy system (Roberts, 2020; van der Schoor et al., 2016). Collectives rely on the ability of people to work together, becoming part of the solution to a problem. Under the umbrella of alternative spaces, cooperatives, energy communities, private non-profit organisations, and social enterprises support economic development in a socially inclusive manner. We regard such network though a framework of solidarity and ethical economics, following Gibson-Graham (2008), identifying a new avenue for research.

Second, the examination of how these initiatives strive to provide social and economic benefits to local communities, such as reducing energy bills and generating new green jobs, including 'jobs for people with energy cost sharing', but also explore the position and influence of the process to form energy communities in the most vulnerable neighbourhoods or rural areas, including those living in refugee settlements under extreme energy poverty. Scholars could examine the obstacles that energy communities face in the direction of having the goal to reduce energy poverty and the limits of their actions in this

respect (Hanke et al., 2021). This approach would need more research and does not count with high interest among the scholars.

Third, more research on the social relations around the energy community living through collaboration, participation, solidarity, governance, or social cohesion. The idea of collective action "to join forces to promote change" is mentioned by most of the initiatives. Collective action is also related to a novel way of understanding investments (Morandeira-Arca et al., 2021). Energy collectives indirectly minimise energy poverty by attacking the causes (Hanke & Lowitzsch, 2020). Collective action is an expression of the sense of solidarity between initiatives and members of the initiatives. The different interpretive frameworks of social movements, such as energy democracy and energy justice, give grounds to the collective action of these initiatives (Campos and Marin, 2020).

The open and flexible viewpoint of the social entrepreneur may help understand the origination, supervision, and maintenance of such communities. Furthermore, the ownership of renewable energy assets is another ground to examine the role of energy communities. Energy collectives are concerned about the lack of accessibility and affordability of energy for citizens and households. The extent to which movements for grassroots innovation processes exist, how they operate and the implications of social innovation in the transformation process of the community may be new themes to study (Smith & Seyfang, 2013). Thus, in connection with the network, more research would enable us to clarify whether and how energy communities interact with the energy network.

5.3.10. More empirical work to test the implementation of social intrapreneurship in energy corporations to tackle energy poverty

More empirical work (qualitative and quantitative) could be developed to test corporate social intrapreneurship departments to give robustness to the sustainability and resilience of the model presented in Chapter 4. Testing the proposal could construct further knowledge through focus groups and case studies of specific initiatives and put into practice in similar formats (aligned or not with CSR departments). In this new line of research, we explicitly recommend caution in interpreting our statements since these methodologies would deal with vulnerable groups and different interests at stake. One possibility for future studies would be through innovative methods such as empowerment evaluation (Fetterman, 2019).

5.3.11. More utilisation of innovative interpretive methodologies in energy poverty

Energy poverty needs to consider increasing studies with methodological diversity and rigor to advance research and practice and develop a deeper understanding of under-appreciated aspects of the problem. In the interpretive method, there is no separation between subject and object, there is more than one reading of reality, questions are not formulated in terms of the cause-effect context of truth situated from a lens, and no imposed theoretical framework applies to participants. This thesis proposes exploring new methodologies, such as empowerment evaluation and participatory action research. Also, alternative ways to study social science offering nonlinear network approaches to identify energy as *actants* through the Actor-Network Theory (Latour, 2011) could generate scholarly attention. The research on innovative empirical methodologies in energy poverty (Boni et al., 2016) may facilitate alternative spaces of innovation to be more credible, allow the recognition of new actors and challenge the re-orientation of mainstream business (Geels, 2021; Gibson-Graham, 2008).

In the following subsections, we outline new avenues for research to overcome this epistemic unbalance in the energy field (Frigo, 2017): Empowerment Evaluation and Participatory Action Research (PAR). We also point out alternative ways to study social science offering nonlinear network approaches to identify energy as *actants* through the Actor-Network Theory (Latour, 2011) could generate scholarly attention.

5.3.11.1. Empowerment Evaluation in social intrapreneurship or social entrepreneurship in energy poverty

Empowerment evaluation ("EE") offers a methodological approach limitedly utilised by scholars to voice vulnerable energy situations or bring their identified concerns to policymakers. EE is a "stakeholder involvement approach designed to provide groups with the tools and knowledge to monitor and evaluate their performance and accomplish their goals" (Fetterman, 2019). EE started in project management to help groups accomplish their goals and require qualitative and quantitative methodologies that can be applied in business areas and be a tool for advocacy (Fetterman, 1994). This methodology, applied in social entrepreneurship research in energy poverty, could help translate beliefs

and meanings to the different members of the energy poverty network. Members of informant groups may self-evaluate themselves in dynamic community sessions by emancipating from their traditional roles.

The main reasons to use this methodology in energy poverty are the following. First, the researcher is the *coach or critical friend* that facilitates, translates and adopts different terms for the same concepts by finding useful metaphors for communication. A *coach* can help build attractive social units, such may be the narratives of social movements in vulnerable communities' environments (Fetterman, 2009; Fetterman & Wandersman, 2007; Wandersman et al., 2005). Second, EE can also be an enlightening and eye-opening adventure to build an engaged community of learners that emancipates the participants from traditional expectations, functions and logic through a "democratic" process, which is fair and appropriate for current governance insights in the energy sector (Hess, 2018).

Third, this methodology could be *to practice what they preach* (Jenkins et al., 2020). EE could enhance the impact of energy justice by linking energy justice decisions to the individual responsibility of informants (e.g., self-conviction to purchasing sustainable products, adopting beliefs on changes in their consumption behaviour, investing in energy efficiency, self-consumption or participating in energy communities). Also, it can be a tool to engage energy justice issues in organisations and political spheres (Huybrechts & Haugh, 2018). Academics can reimagine the research with social impact and direct engagement. This aspect goes beyond operationalising or communicating energy justice outcomes towards an ambitious trend in a fundamentally different approach to *responsible research* (Jenkins et al., 2020). Societal engagement in the research process may take several forms, with more stakeholders participating in research development and broader dissemination (Rodríguez-Campos, 2012).

Thus, such a call for future EE research necessitates a degree of conventions encapsulated in the journey towards interdisciplinary, multi-method, comparative, and contextually sensitive research that seeks to understand energy justice manifestations in-depth context of energy poverty. Most fundamentally, it would be part of the inspiration to stimulate scholars to engage and commit more directly to a greater spectrum of stakeholders of the energy sector network —including the impulse to the visibility of social entrepreneurs (Mahzouni, 2019; van der Schoor et al., 2016); and the interlinks with social activists and energy communities (Hanke & Lowitzsch, 2020; Mahzouni, 2019)— to

enable this co-production of knowledge and impact. This may result in collaboratively scenarios for future action or decision support tools that lead to practical action rather than just journal publications, experts' reports, or outdated web pages.

Research can participate in what is happening on the ground from academic perspectives (Gibson-Graham, 2008). This can be the case when scholars are "extracting" data and knowledge from communities and activists without collaborating with them, which is a common critique of energy justice academic work (Jenkins et al., 2020). In this instance, we should develop critical evaluation methods that see energy justice research as a long-term process rather than an object of study defined by 1, 3 or 5-year funding periods. Attempting to practice what we are researching, we can move towards proactive instead of passive change, materialising energy justice at the forefront as the framework in energy transitions and carrying energy justice to a wider-scale public consideration.

Improving conceptual and methodological approaches is a critical issue on the research transition agenda (Markard et al., 2012). Based on this need, EE could be applied to study the empowerment function in the niche processes in the transition literature. Empowerment is on the energy poverty agenda when everything is being rethought and re-evaluated (Fetterman, 1994; Fetterman et al., 2014; Wandersman et al., 2005). Empowerment is under-researched in social entrepreneurship (Pareja-Cano et al., 2020). Still, with EE seminars, more people will engage in conducting their evaluations, and more dissemination of results and information on energy poverty will be transferred to the network.

5.3.11.2. Participatory Action Research and action research methodologies

We propose Participatory Action Research (PAR) because it has recently been promoted as a set of methods to better understand sustainability issues (Ballard & Belsky, 2010). PAR 'act in intelligent and informed ways in a socially constructed world' (Bradbury & Reason, 2003).

PAR aligns with alternative transformational and performative epistemologies instead of an 'empirical positivist' view of investigation that demands an objective hypotheses/testing model. PAR points to more engagement and reflexive inquiry in the research areas (Gibson-Graham, 2008; Jenkins, Spruit, et al., 2020). The main objectives of PAR are to generate practical knowledge that contribute to communities' well-being,

benefits individuals in their everyday living, and empower the blossoming of communities of dignified and healthy social relationships. These objectives are adequate to energy poverty studies.

Engaging in PAR facilitates remapping the network to initiate meaningful discussions with all actors, including academics, companies, policymakers, and civil society (Gibson-Graham, 2008). This methodology supports examining the dynamics of relationships and how they operate to help well-being and transformation. The connection to action research of different forms of knowledge show symbolism, relationship, and reflection. PAR stimulates building on each identified knowledge type (Bradbury & Reason, 2003).

This thesis's coherence with social construction theory opens the door to connecting with PAR. The epistemological coherence suggests utilising different methodologies in the future in energy poverty and, above all, going deeper into action research through PAR. This research method also fully connects with the professional experience and search for an approach to practice. PAR is not a theory but a strategy toward practice that uses any tools that co-researchers find helpful. PAR also establishes the connection of the three points of the triangle of research, participation, and action, enabling energy social science to reflect on real-life profoundly and analyse the realities of social entrepreneurs and stakeholders of energy companies with whom the social impact and transformation and reorientation can be achieved (Geels, 2021). We also consider an interesting line of research related to PAR to connect with Latour´s controversies about the social world and the limitations of the linearity of the conventional goal of social sciences to understand, describe, and explain (Czarniawska, 2006). The approach to non-traditional means, like PAR in the energy field, could bridge the network through processes of change, generation of new knowledge, empowerment, and participation (Fetterman, 2019).

The utilisation of PAR to liberate corporate employees to implement new human centre logic is a niche to be explored in corporations. The employees of corporations could have the chance to reflect and decide about plans for change towards sustainability and the energy transition. PAR could facilitate the emancipation-liberation from the dominant business as usual in a positivistic energy system logic (where the company is identified as pure search for economic profit) to be able to choose freely about the new proposals (where

the company recreate roles as relevant actor in social action). PAR could be a tool to connect practice and research through *alternative economic spaces* (Gibson-Graham, 2008)

Based on the findings of this thesis, social entrepreneurship's collective and hybrid capabilities in the network of actors in energy poverty may be needed to develop such research on the relationships within the network and the community and collective perspective through social innovation. Social research could be co-developed by a team incorporating researchers and practitioners' members of an organisation, community or network (stakeholders) who seek to enhance the situation of the participants. The social purpose of decreasing energy poverty will always be the common thread while using the PAR methodology.

The dynamic character of the network under formation (Latour, 2007) and the search for bridges in the emotional relationships of the actors of the energy poverty network could be an excellent place to generate spaces for dialogue through PAR (Crane & Livesey, 2017). This dynamism leads to a continuous critical learning process that constructs knowledge understood as part of one's existence and interpretation under the hermeneutic truth (Laverty, 2003).

Hence, as future lines of research, we suggest developing PAR methodology using the EE (Fetterman, 2019; Fetterman & Wandersman, 2007; Huang, 2010). Growing conditions for collaboration and partnership, one of the main elements of PAR, generate a sense of connection that better ensures the benefit of the collective good. The critical theory concerned with empowerment and transformation may also be explored in future research while experiencing the interplay of study and practice within the energy poverty network. This methodology allows moving the *coach* (learning facilitator) and group members (learning participants) toward the emancipatory approach of sustainability, which seems appropriate in the just energy transition. By realising PAR in a world in a just transition, social scientists can be put to work in supporting that change. The academy could be critical and have a high potential to convene distinct stakeholders to change in manners that overcome network fragmentation. Moreover, the benefit for all engaged in scholarly work is that a more profound concentration on practice will revitalise social science and raise its pertinence to the issues that most deserve our attention.

5.4. Limitations

This thesis presents some limitations that should be noted, a few of which have been previously discussed. First, in Chapter 2, the selection of the keywords might have left out initiatives that may also respond to the same concept but that need to be noticed in this research and might have been overlooked; also, excluding articles from non-impact journals, conference proceedings, or languages other than English limits the inclusion of all relevant articles to ensure quality (Okoli, 2015). Moreover, we point out that hidden local social innovation or entrepreneurship realities are currently happening and emerging in social innovation niches in practice. The number of studies selected may have limited the scope of the systematic review, given that relevant and innovative initiatives (Ashoka and Schneider Electric Foundation, 2019) still need to be research-driven and subject to the study of energy poverty or social innovation/entrepreneurship scholars.

In Chapter 3, the different cultural contexts in the sample and the fact that the framings may change over time and across settings make it difficult to generalise the findings. We only provide partial snapshots of the more comprehensive network. However, the contextualisation embedment may enrich the views of social entrepreneurship since meaning is embedded in local communities (Dufays & Huybrechts, 2012). Also, data must be interpreted cautiously because complex social problems are poorly formulated with unclear boundaries. Numerous stakeholders bring different perspectives to the definitions and potential resolution (Waddock et al., 2015). Generalisation is limited.

Finally, the conceptual work in Chapter 4 also has some practical implications since it proposes a new social strategy for bridging inter-organisational relationships through an organisational process experiment with transforming potential (Loorbach & Rotmans, 2010; Summers & Dyck, 2011). Such organisational change would require high levels of responsibility and respect towards social needs to be correctly implemented in practice (Ghoshal, 2005; Waddock et al., 2015). This approach could also apply to other sectors with SDGs activities. However, caution and care must be explicitly maintained as corporations do not have the experience, track record or trust required to work directly with vulnerable groups. Collaboration in the development of this activity with social entrepreneurs, non-profit organisations, and social workers to develop this activity would add value to this Social Energy Department. The close relationship between social

entrepreneurship and energy poverty may not be easily transferable to larger structures, such as corporations (Waddock et al., 2015).

6. Final remark

Tomás Saraceno, Venice Art Biennale, 2009

6.1. Two overlapping networks: the social energy poverty network and the technical electricity grid

This research is enunciated around the role of social entrepreneurship, using the network perspectives within the energy poverty network and exploring the role of social entrepreneurship as a potentially relevant actor in a more social reorientation of the energy transition. Applying the network perspective could open the energy poverty discipline to novel actors. In the just energy transition, private actors would play a decisive role by participating in coordinated, joint actions within the network. Consequently, any progress in this field would positively affect society. This thesis also proposes new research, uncovering many implicit or unaddressed issues in several fields to tackle energy poverty.

This thesis looks at the network contemplating two efforts at primary data collection and analysis: first, the micro level of the narrative of social entrepreneurs because the narrative is full of sociological knowledge that permits an understanding of how the informants describe their experience in the energy poverty network (Franzosi, 1998) and second, the integration of social entrepreneurship in energy corporations through social intrapreneurship and organisational change considering the corporations as key actors under transformation driven by social entrepreneurship logic.

Collective social entrepreneurship elicits innovative responses to the reality of the grand challenge of energy poverty. Collaborative social entrepreneurship and innovation may be partial, non-exclusive solutions to reduce energy vulnerability. Although corporations are viewed as part of the problem, and despite the lack of corporate solutions, the relevance of energy poverty as a social problem is increasing in political agendas at all

levels. In the meantime, vulnerable energy customers remain at the periphery of the stakeholder map of energy companies. Energy poverty mitigation requires the coordinated participation of interrelated and multiple actors. Energy businesses have an opportunity to rethink their approaches and contribute to eradicating energy poverty in the just energy transition. Incorporating the process model of a Social Energy Department, as proposed in this thesis, would fully integrate the logic of transformation of social intrapreneurship in corporations' boundary departments. This integration may increase the salience of vulnerable customers for large-scale energy companies. Social intrapreneurship in energy poverty could proactively achieve a higher position within energy companies (Smith & Raven, 2012).

Energy companies could take advantage of the social intrapreneurship model to concentrate on what should matter in the just energy transition, including all actors, while simultaneously upholding economic profit and the social mission. Thus, energy companies could lead the demand for social inclusivity in the electricity sector and participate in the change towards sustainable development by steering all actors, including regulators and investors, towards more social business patterns. Bridging departments of social intrapreneurs within energy companies could be implemented in other sectors and might help corporations approach the SDGs.

Energy transition heralds changes towards a future that may leave some traditional models behind. In this context, utilities could promote social inclusion in the energy sector. They could proactively co-participate in the shift towards sustainable development by coordinating actors such as regulators, legislators, and investors through sustainable business practices with new social logic. A genuine willingness from society to change the system is required for the private sector to respond differently to the social demands of the transition to just energy. A socially driven department would encourage critical reflection in business and improve the vulnerability conditions by prioritising the treatment and experience of vulnerable customers. It would also entail an organisational change that could accelerate the just energy transition within the transition to sustainability. Further steps require utilities to create social enterprises rather than just introducing isolated social intrapreneurship departments.

The electricity grid is considered the core of the energy system. We argue that the system's centre is the human network around the energy services. The electricity grid

redistributes the electricity generated through transmission and distribution lines until it reaches the final customers, the consumers in their homes, workplaces, or places of leisure. However, this thesis considers not only the technological network but rather the social network of individuals and collective organisations (companies, communities, social movements, associations, cooperatives, communities, and citizenship) that use the energy. It particularly underscores the network focusing on the vulnerable who suffer from energy poverty.

The expansion of the technological electricity grid has an increased number of nodes and lines with broader connectivity fostered by the digitalisation trend. To decarbonise the grid, the aim is to reduce energy demand. This same objective is upheld by an increased network of better-informed social actors, who, together with more collectives, are empowered in the management and production of energy. The energy social network is working towards a more inclusive energy system to reduce information asymmetry. In other words, for the electricity grid to carry less, the social network must carry more. The following Figures 6-1 to 6-3 below show maps of the expansion and growth of the electricity grid from 2005 from 2018, and the expected image of the electricity grid nodes in 2030.Long-term grid expansion planning transformation of the power system by 2050 needs substantial technological but also parallel improvements in the connections and expansion within the energy poverty network which democratizsation is still in an early development stage.

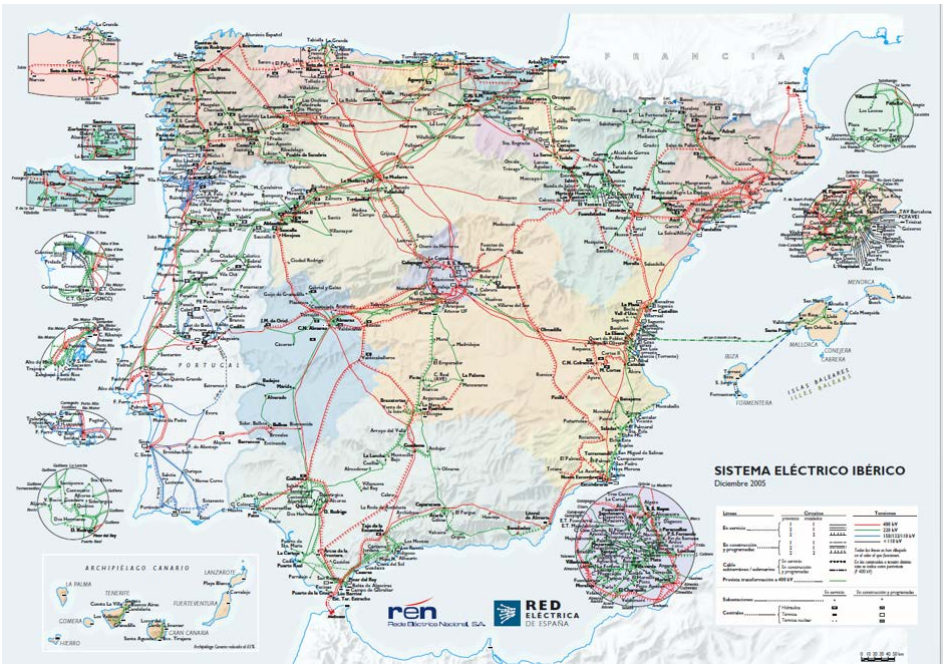

Figure 6-1 The electricity grid in 2005. Iberian electricity system. December 2005 (Red Electrica España, 2005)

Figure 6-2. The electricity grid in 2018. Source Iberian electricity system. December 2018. (Red Electrica España, 2018)

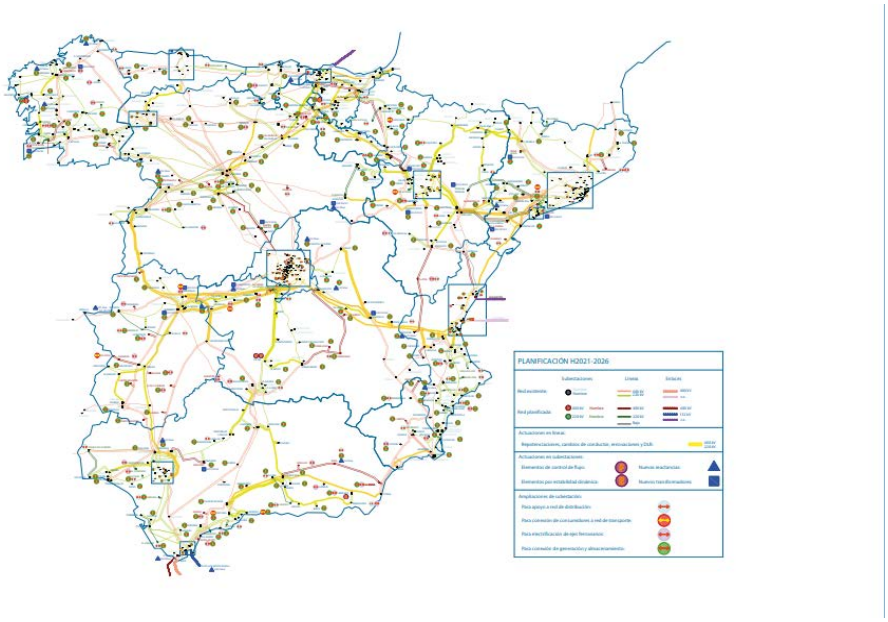

Figure 6-3. The electricity grid plan 2022-2026 (Red Electrica de España, 2021).

Below some questions for future social energy network thinking:

What if the energy system opened its doors to the community as a shared space where different forms of heterogeneity coexist?

What if the person-centred energy system becomes a common space inhabited by all and in which minorities participate in constructing a new collective narrative?

What if we dreamt that one day, we could all have a place in energy institutions, conquering dehumanised spaces such as energy to transform them into humanised common areas, transitioning from places of reference to places of belonging?

What if, for a moment, we dared to believe that our actions could re-orient the processes of accompanying, caring for and humanising the energy system?

We are proposing alternative steps, supported by energy corporations, towards empowering vulnerable communities to participate in an experimental programme of training activities around energy and interventions to reduce energy poverty that create stable, long-lasting community relationships with vulnerable families and transform the energy system into a place of belonging for all.

The responsible teams for these changes may be social entrepreneurs whose social work in households tries to humanise processes and transform energy into shared spaces where we can meet, talk, and care for ourselves while enjoying the energy capabilities afforded by relating to each other in energy communities. These ideas arise in the just energy transition in the context of system change. After years of practice, the aim is to expand the energy-conscious community and to incorporate the doubts, successes, failures, and lessons learned from the social relations and caring experience. To avoid a dystopia where a perfect society is maintained through corporate or other totalitarian controls, we do not have a choice but to create these diverse emancipatory spaces. Much remains to be done towards achieving this dream of utopia, but no one can stop us from imagining alternative, hybrid, common spaces and working towards them.

6.2. Reflection

This mid-career research thesis on which I have been working since 2019 through the Cetis PhD programme at Comillas, is a personal pause to systematise and reflect on the work being done in social entrepreneurship and energy. This circular experience has allowed me to participate in the dynamic development of an interdisciplinary, stable academic community around the academic study of both disciplines and to set new goals in the design of policy and management practice with new social logic.

It is a critical time for those working on energy poverty, transitions, decarbonisation, and the climate crisis. Higher energy prices and supply bottlenecks are causing a reduction in wages and household consumption. Never have the research community, industry, governments, policy actors, and other critical stakeholders been required to collaborate on such pathways or at so many levels to address the overlapping crises of Covid-19, spiralling living and energy costs due to the Ukrainian war and the intensifying climate change (Sherriff et al., 2022).

Significant changes to the energy system, every day more of a necessity, are being accompanied by social approaches (Miller et al., 2015). This ability to change course and this process represent an opportunity for self-awareness and an enormous intellectual challenge of understanding diversity. The knowledge I have acquired from my work in the field over the past years has made me conclude that this is just the beginning. Writing this thesis has given me the privilege of practising energy social science research, for which I am very grateful.

It is also a time for academic conversation and to thank all the contributors who have been involved in this work for years. The research is intended to activate an understudied theoretical foundation for developing networks of actors in energy poverty and networks of entrepreneurship and social innovation that can be applied to other disciplines and institutions. These agents represent a collective voice whose experiences enable them to share their concerns and desires and who contribute their points of view on the need to incorporate more radical transformative views in the energy system. This transformation aims to air the social problem in a common arena where there is space for all. Building bridging between actors in the energy poverty sphere to transform the institutionalised energy system is the gist of the thesis.

7. References

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