New Clean Energy Communities in a Changing European Energy System (NEWCOMERS)

Deliverable 6.2

Potential of energy communities to increase energy literacy, attitudes, perceptions and support for the energy transition among members and the general public

Version: 3.0

WP6: Current and potential benefits for energy community members and society

Author(s): Primož Medved, Tina Kogovšek, Nejc Berzelak, Urša Golob, Tanja Kamin

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Document information

Delivery Type	Report
Deliverable Number	D6.2
Deliverable Title	Potential of energy communities to increase energy literacy, attitudes, perceptions and support for the energy transition among members and the general public
Due Date	
Submission Date	
Work Package/Task related	WP6 / Task 6.1/6.2
Work Package leader	Tanja Kamin (UL)
Author(s)	Primož Medved, Tina Kogovšek, Nejc Berzelak, Urša Golob, Tanja Kamin
Name (Partner organisation)	University of Ljubljana
Reviewer(s)	Agatino Nicita Matjaž Uršič
Keywords	clean energy, energy communities, social practice, consumer value, sustainability
Dissemination level	Public
Project coordinator	Julia Blasch (VUA)
Project manager	Ruud van Ooijen (VUA)
Contact details	Ruud van Ooijen r.van.ooijen@vu.nl
Cite as	Medved, P., Kogovšek, T., Berzelak, N., Golob, U., & Kamin, T. (2021) Potential of energy communities to increase energy literacy, attitudes, perceptions and support for the energy transition among members and the general public. Deliverable developed as part of the NEWCOMERS project under grant agreement 837752.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Revisions

Version	Date	Author	Status
1.0	10. 5. 2021	Primož Medved, Tina Kogovšek, Nejc Berzelak, Urša Golob, Tanja Kamin	Initial draft (theoretical framework and methodology)
2.0	5. 7. 2021	Primož Medved, Tina Kogovšek, Nejc Berzelak, Urša Golob, Tanja Kamin	Final draft (inclusion of results) for review
3.0	19.7.2021	Primož Medved, Tina Kogovšek, Nejc Berzelak, Urša Golob, Tanja Kamin	Revised, final report

Reviews

Version	Date	Reviewer	Review Title
2.0	9.7.2021	Matjaž Uršič	Review 1
2.0	12.7.2021	Agatino Nicita	Review 2

Statement of originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation, or both.

Disclaimer

This deliverable reflects only the authors' views, and the European Union is not responsible or liable for any use that might be made of information contained therein.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Summary of NEWCOMERS

In its most recent Energy Union package, the European Union (EU) puts citizens at the core of clean energy transitions. Beyond policy, disruptive innovations in energy sectors are challenging the traditional business model of large energy utilities. One such disruptive social innovation is the emergence of new clean energy communities ('newcomers'). The possible benefits of these 'newcomers' for their members and for society at large are still emerging, and their potential to support the goals of the Energy Union is unclear. Using a highly innovative holistic approach, drawing on cutting-edge theories and methods from a broad range of social sciences coupled with strong technical knowledge and industry insight, the NEWCOMERS consortium will analyse European energy communities from various angles. By taking an interdisciplinary approach and employing co-creation strategies in which research participants are actively involved in the design and implementation of the research, the NEWCOMERS project will deliver practical recommendations about how the European Union, as well as national and local governments, can support new clean energy communities to help them flourish and unfold their potential benefits for citizens and the Energy Union.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Summary of NEWCOMERS's Objectives

As subsidiary objectives, the NEWCOMERS project aims to:

- Provide **a novel theoretical framework based on polycentric governance theory**, combined with elements from social practice theory, innovation theory, and value theory. The emergence and diffusion of new clean energy communities can be analysed, and opportunities for learning in different national and local polycentric settings can be explored.

- Develop a **typology of new clean energy community business models** that allows assessment of the different types of value creation of NEWCOMERS, as well as their economic viability and potential to be scaled up under various conditions.

- Identify the **types of clean energy communities that perform best along a variety of dimensions,** such as citizen engagement, value creation, and learning, and their potential to address energy poverty while being based on sustainable business models.

- Investigate the **regulatory, institutional, and social conditions** at the national and local levels that are favourable for the emergence, operation, and further diffusion of new clean energy communities, and enable them to unfold their benefits in the best possible way.

- Explore **how new clean energy communities are co-designed with their members' needs**, in particular whether these communities have the potential to improve the affordability of energy, and their members' energy literacy and efficiency in energy use, as well as their members' and society's participation in clean energy transition in Europe.

- Deliver **practical recommendations informed by stakeholder dialogue on** how the EU, as well as national and local governments, can support new clean energy communities to assist them to flourish and unfold their benefits in the best possible way.

- Offer citizens and members of new clean energy communities a **new online platform, 'Our-energy.eu'**, on which new clean energy communities can connect and share best practices, and interested citizens can learn about the concept of energy communities and find opportunities to join one in their area.

Find out more about NEWCOMERS at: https://www.newcomersh2020.eu/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

NEWCOMERS Consortium Partners

Logo	Organisation	Type	Country
	Institute for Environmental Studies (IVM), Vrije Universiteit Amsterdam (VUA)	University	The Netherlands
	International Institute for Industrial Environmental Economics (IIIEE) at Lund University (LU)	University	DS-SE
	Environmental Change Institute (ECI), University of Oxford (UOXF)	University	United Kingdom
	Institute of Social Sciences, University of Ljubljana (UL)	University	Slovenia
	Institute for Advanced Energy Technologies "Nicola Giordano" (ITAE), National Research Council (CNR)	Research organisation	Italy
	Leibniz Institute for Economic Research (RWI)	Research organisation	Germany
	Consensus Communications (CONS)	Private for Profit (SME)	Slovenia
	GEN-I	Private for Profit (Large company)	Slovenia

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

TABLE OF CONTENTS

1 **EXECUTIVE SUMMARY** 8
2 **INTRODUCTION** 10
2.1 Background 10
2.2 Role of this deliverable in the project 10
2.3 Structure of the document 11
3 **THEORETICAL FRAMEWORK** 12
4 **METHODOLOGY** 16
4.1 Constructing the survey 16
4.2 Survey for CEC members (collection of empirical data) 18
4.2.1 Description of the sample 19
4.3 Quantitative analysis of the collected data 23
4.4 Survey synergy and synthesis: Integrating qualitative and quantitative data 24
5 **RESULTS – QUANTITATIVE ANALYSIS OF THE SURVEY** 25
5.1 Typology of clean energy technology usage in NEWCOMERS clean energy communities 25
5.2 Participation in the clean energy community 26
5.2.1 Active community involvement 26
5.2.2 Willingness for active community involvement 28
5.3 Social role, community trust and perceived value 29
5.3.1 Identification with the clean energy community 29
5.3.2 Trust 30
5.3.2.1 Trust within the clean energy community 30
5.3.2.2 Trust in people in general 32
5.3.3 Empowerment 33
5.3.4 Perceived Value 35
5.4 Social norms 37
5.5 Motivation to be part of a clean energy community 38
5.5.1 Motives 38
5.5.2 Incentives 40
5.6 Challenges and concerns 41
5.6.1 Challenges 41

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

5.6.2 Concerns 43
5.7 Attitudes towards clean energy 44
5.8 Energy literacy – knowledge and learning processes 47
6 **DISCUSSION – INTEGRATION OF FINDINGS FROM QUALITATIVE AND QUANTITATIVE ANALYSES** 51
7 **CONCLUSION** 55
8 **REFERENCES** 56
9 **APPENDICES** 60

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

1 EXECUTIVE SUMMARY

Part of the central mission of the NEWCOMERS project is to encourage empowerment processes for EU citizens to participate in and contribute to clean energy transitions by initiating or joining clean energy communities (CECs). In this deliverable, D6.2, our focus is on identifying CEC members' attitudes and perceptions, trust, perceived value and energy literacy as well as their support for the energy transition.

The main aim of D6.2 is to *explore the potential of energy communities to increase energy literacy and shape attitudes and perceptions in support of the energy transition among CEC members*. This is an important first step towards understanding what kinds of incentives are needed for upscaling projects, such as CECs, across the EU. To achieve our aim, we have combined the findings of two studies carried out among members of CECs, which were selected to be our case studies in the NEWCOMERS project.

The conceptual foundation of our enquiry is based on the **socio-psychological approach** focused on the **level of individuals**. This is important owing to the **considerable emphasis placed on individuals in the EU's vision of the Energy Union**. Moreover, to understand individuals' inclinations to be part of collective actions, such as CECs, it is important to gain insight into the socio-psychological foundations and rationales that drive their behaviours. The main part of D6.2 consists of the findings obtained from a quantitative survey among members of the studied CECs. These findings are complemented by findings obtained from a qualitative study based on semi-structured interviews across the same CECs, comprehensively presented in D6.1.

Overall, our **results** indicate that the potential of CECs could best be realised by acknowledging the differences among CECs across the various individual-level socio-psychological foundations explored in our study. The results reveal that **motivations for taking part in CECs** play a quintessential role in considering ways to support and spread CECs. We found that there is **not a single but multitude of motives for joining CECs**. In some CECs, environmental considerations for joining were predominantly exposed, yet our qualitative data suggest that these are always in close connection with one or more other motives that together influence people to get involved in CECs. In close relation to motives, individuals perceived **different types of value** that could be derived from taking part in CECs that go beyond economic value, such as decreasing energy costs.

Interestingly, people that are considered **frontrunners** (**forerunners) in CECs** and often assume the role of (un)official **community leaders** are perceived as **crucial to upholding a CEC's functioning**; they tend to enjoy high trust from community members and are entrusted with all important tasks for the CEC's strategic and daily management. Moreover, our results show that **community-based trust can be seen as a unifying factor within CECs** and is maintained by transparency of actions and information sharing among members.

Members consider **participating in CECs** as **a way of showing their contribution towards a clean energy transition** in society. They also perceive involvement in CECs as **empowering** both in terms of transforming passive individuals into active agents and in **heightening the collective empowerment to shape a 'better' future**. Interestingly, members also expressed that being part of a CEC had **increased their general level of environmental consciousness**.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Quantitative data further reveal that CEC members think **public institutions**, such as national and local government, city, communal and regional authorities, **play an important role in a country's energy efficiency** and energy conservation policies. While individual engagement is important, public institutions and governments need to be enablers in switching to clean energy sources. **Much stronger political support for CECs is expected** and better **collaboration among all important actors** is needed to achieve a faster clean energy transition.

Finally, our results indicate that surveyed **CEC members** feel they **are crucial for sharing energy- and CEC-related knowledge** within as well as outside their community. They see themselves as important promoters of the CEC's benefits to the interested public. They expressed pride in being members of CECs and showed a tendency to identify with their respective CECs.

Our study showcases that **people's engagement in CECs** – which represent various co-ownership schemes and business models that clearly differ across our case studies and national settings – **is playing an increasingly important role by fostering individuals' participation in clean energy transitions** and increasing the acceptance of renewable energy. By studying the individual-level factors, **the study also lays the foundation for acknowledging the importance of a plurality of individual actors (citizens-consumers)** and their needs in developing appropriate policies and incentives that would achieve the ultimate goal of realising decentralised and democratised energy transitions towards a decarbonised future.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

2 INTRODUCTION

2.1 Background

The NEWCOMERS research project has been undertaken in six EU Member States (NL, SE, UK, DE, IT, SI). The project is providing insights into how new clean energy communities (CECs) meet their members' (i.e. citizens' and consumers') needs better than more traditional business models and whether they have the potential to increase the affordability of energy, their members' energy literacy and efficient use of energy while enabling participation in clean energy transitions in Europe. The central mission of the NEWCOMERS project is to empower EU citizens to participate in and contribute to clean energy transitions. NEWCOMERS aims to achieve this by studying the emergence, structure and potential impact of emerging business models in energy communities and disseminating the findings to policymakers and all interested stakeholders, actual or potential. The project will assess these regulatory, institutional and social conditions, which support the emergence and operation of new CECs as well as their potential for diffusion.

2.2 Role of this deliverable in the project

This deliverable, D6.2, is mainly based on an online survey among members of the NEWCOMERS CECs with the aim to identify barriers and inhibiting factors for the dissemination of new forms of community energy from members' perspectives. It aims to provide insights about ('internal') members' visions, attitudes and perceived value relating to CECs. More precisely, the deliverable offers a better understanding of the CEC members' particular perceptions of different dimensions that characterise their energy communities, such as participation, identification, social role, community trust, empowerment, perceived value, motivation, challenges, concerns, attitudes towards energy and energy literacy. It offers relevant insights into community members' feelings, viewpoints and preferences regarding energy communities in general and their business models in particular.

D6.2 highlights the potential of energy communities to increase energy literacy, attitudes, perceptions and support for the energy transition among members and the general public. To this end, the report summarises the combined results/findings of a qualitative study (from the in-depth interviews) and a quantitative analysis (online survey) involving CEC members and identifies key success factors for new forms of energy communities.

Specifically, D6.2 focuses on the following NEWCOMERS research propositions developed in the D2.1 theoretical framework:

- the importance of trust,
- social acceptance of renewable energy,
- potential for upscaling/Transfer of knowledge, skills and practices,
- multi-level learning,
- value creation and distribution.

D6.2 is a follow-up to D6.1 (see Figure 1). As the latter was focused on a comprehensive qualitative analysis (based on in-depth interviews) of members' perceived benefits of their CECs, the former continues this approach by adding insights gained from a quantitative study focusing on members of

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

the NEWCOMERS CECs. D6.1 and D6.2 together offer a comprehensive understanding of 'internal' CEC members' opinions, perceptions, perceived value and attitudes associated with energy communities. The findings will serve as input for the forthcoming deliverables, D7.1 – Comparative analysis of case study results and identification of best practices and D7.3 – Policy recommendations based on co-creation process.

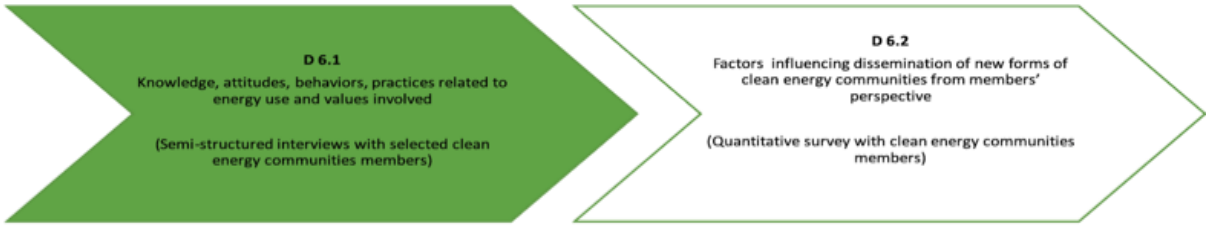

Figure 1: The sequence of qualitative and quantitative investigations of new clean energy communities from their members' perspectives

2.3 Structure of the document

This deliverable, D6.2, is structured in four sections. First, we present the theoretical framework and the main concepts on which the questions in the CEC members' survey were based. This is followed by the methodological section and the results of the quantitative study. The latter is the main section of the report describing the comparative analysis of five different CECs from five different countries. The document concludes with a discussion featuring a synthesis with the main findings of our qualitative study presented in D6.1.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

3 THEORETICAL FRAMEWORK

CECs are not a new phenomenon. Since the first Danish wind farm cooperative was established in the 1970s, EU citizens have organised different types of CEC initiatives that put a special emphasis on co-ownership of renewable energy production. Local energy initiatives in Europe, such as energy communities, have become a societal movement which supports the societal demand for sustainable and 'self-owned' energy sources (Koirala et al., 2018). In the medium to long term, this phenomenon could have a substantial impact on the global energy system. With the rise of decentralised clean energy systems and various forms of co-ownership in renewables, in the future, CECs could become more common and account for a major share of renewable energy generation (Lowitzsch et al., 2020).

The concept of energy communities can be understood broadly, ranging from 'communities of place' that are organised around a limited specific local area (e.g. villages or urban neighbourhoods) to 'virtual networks' – that is, 'communities of interest' that spread beyond the local area (Bauwens and Devine-Wright, 2018). In the NEWCOMERS project, we focus on new forms of CECs or so-called newcomers as compared with conventional CECs (see also D2.1 'Theoretical framework focusing on learning in polycentric settings'). The NEWCOMERS project description suggests that so-called newcomers are energy initiatives that combine the characteristics of community energy initiatives and new business models and could be characterised by a greater diversity of participating actors, leading to different types of partnerships and coalitions between citizens, industry and municipalities. Furthermore, they often involve the use of innovative and smart technologies and aim to create new value for their members and society that goes beyond the joint production of renewable energy (see D2.1, van der Grijp et al., 2019).

A CEC encompasses different activities, including investment and collective switching to renewables production and owning distribution networks, or can be an energy supply or services company (Roberts, 2020). CECs can also be seen as social innovations which encompass new solutions (products, services, models, markets, processes, etc.) that cope with a social need and simultaneously lead to new or improved capabilities (Gui and MacGill, 2018). Moreover, their presence may lead to radical societal changes (van der Schoor and Scholtens, 2019) and influence social sustainability aspects within communities. Namely, community energy projects help to develop social capital, allow experimental learning processes and may enforce local community empowerment. Smith et al. (2016) argue that social cohesion, behaviour change and energy equity could be initiated, fostered or/and promoted through community energy projects. In addition, CECs may increase the engagement level of members participating in the communities. The social capital cultivated within such forms of cooperation can build trust among community members (Gui and MacGill, 2018).

Several EU Member States are recognising the benefits of such community energy projects and have created policies to support their diffusion. Governments often offer economic incentives, such as support schemes (e.g. fixed feed-in tariffs or FiTs), tax incentives and grant-to-loan programmes, and other capacity-building policies, such as information and advice platforms. Some local and national governments have taken a more long-term strategic approach, integrating community energy into energy planning (Roberts, 2020).

Although CECs are increasingly recognised as important actors that contribute to sustainable energy transitions, their practical implementation is marked by diverse geographic, technological, demographic and cultural factors, and this leads to complexities that prevent finding a single solution that would fit

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

all (Lowitzsch et al., 2020). Moreover, CECs are institutional forms that (in most cases) are created by citizens-consumers. Importantly, in this respect, the EU's Clean Energy Package acknowledges consumers as 'fully active actors' of energy transitions, participating in and co-owning energy markets and services through CECs (Soeiro and Dias, 2020a, p. 134). While the functioning of CECs has been studied from various angles (Soeiro and Dias, 2020b), the 'consumer' or 'member' perspective remains under-researched. This is despite the fact that citizens are playing a 'central' role in energy transitions but also because the lives of individuals are affected by their membership in CECs. They are the ones who live in and contribute through/to the CECs every day. Thus, CECs depend on members' participation and involvement. Yet little is known about their members' views on clean energy and CECs, their motivation, trust, knowledge and other factors influencing their involvement in CECs. In particular, there is an apparent lack of quantitative studies examining these perspectives (Soeiro and Dias, 2020b). These perspectives also seem crucial to assure the long-term functioning and sustainability of CECs as well as their members' well-being.

To structure our analysis of community members, we focused on several research dimensions defined and briefly explained below.

· *PARTICIPATION*. CEC projects are dependent on their members' involvement and participation, for example, as volunteers and investors. Citizen participation has been defined as a process in which individuals take part in decision-making in the institutions, programmes and environments that affect them (Heller et al., 1984). The willingness of local citizens to participate in CECs is driven by several factors: economic, technological, environmental, social factors, etc. It was identified that environmental concern, renewables acceptance, energy independence, community trust and community resistance are essential aspects in defining the willingness to participate in CECs (Koirala et al., 2018). If participation in community energy systems is conditioned by something more than the conception of a 'citizen as economic actor', a reasonable and realistic notion of engagement must be secured (Hoffman and High-Pippert, 2010). Participation in CEC initiatives may be influenced by the (local) community identity at the local neighbourhood or village level and can facilitate a sense of community, which may, in turn, reinforce participation. Furthermore, a high level of trust between the members could support and promote participation in community energy projects (Kalkbrenner and Roosen, 2016). Community energy projects might contradict the recurrent argument that we are living in an era of declining civic engagement (Hoffman and High-Pippert, 2010).

· *EMPOWERMENT.* General indicators for evaluating and monitoring empowerment within clean energy communities are level of education/energy literacy, perceived access to information, ownership level, access to training sources, experience of different forms of personal enrichment, capacity to envisage change, perceived role within the community, experience of processes of consultation, direct democracy, etc. (Albuquerque et al., 2017). Empowerment usually implies that CEC members are meaningfully involved in and take ownership of the design and development of clean energy programmes. If stakeholders are merely consulted in a perfunctory manner, they will probably be uninterested in the programme, or be unenthusiastic participants, or perhaps even be opponents of the programme (Berry, 2020). The EU legislator acknowledges the potential of CECs to enable the empowerment of vulnerable members and requires the EU Member States to ensure that CECs are accessible to all citizens, including those in low-income or vulnerable households, and to assess the possibility of enabling participation among members that might otherwise not be able to participate in renewable energy transitions (Hanke and Lowitzsch, 2020).

· *TRUST.* Walker et al. (2007) find that trust represents an essential dimension for the development of energy communities, and claim that trust is both a necessary characteristic and a potential outcome of

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

cooperative behaviour within an energy community. If the building of trust is not supported by an appropriate planning and governance structure of the community energy project, the entire endeavour might be challenged. Trust could be furthermore constructed, evolved, reinforced, by working with and through organizations that have credibility in specific local areas or communities. Apart from the 'community trust', another trust dimension is relevant for the functioning of energy communities, namely the 'competence-based trust' – indicating whether community leaders, members, and other partners involved in an energy program have the capability and experiences to follow through on commitments and provide reliable information (Berry, 2020).

· *VALUE TYPES.* Value can be interpreted as a multidimensional construct (Chang and Dibb, 2012) and, at the same time, may encompass affective attributes (emotional, social) or utilitarian attributes (functional, rational, conditional) (Loane and Webster, 2014). Value is a subjective idea, most often analysed from the individual perspective, encompassing how individuals perceive and use objects or engage in practices (Türe, 2014) and how they perceive their utility, worth and benefits (Chang and Dibb, 2012). Gordon et al. (2018) distinguish different kinds of values, which are relevant for community energy efficiency: functional value, economic value, emotional value, social value and ecological value. Funk (1998) already found that a 'societal interest value orientation' especially is significantly related to a greater prospect of working on common community problems. As Funk (1998) points out, what drives participation is neither pure altruism nor self-interest but a mix of desires to benefit the self and others.

· *ATTITUDES.* Attitudes, norms and beliefs can either accelerate or obstruct the acceptance, implementation or dissemination of energy practices and behaviours (Piscicelli et al., 2016). Attitudes regarding the role of CECs in addressing environmental issues may facilitate the understanding of individual and community uses of energy-related practices. Citizens' willingness to contribute to their community depends on their social connections to the community or a specific institution (Vugt and Cremer, 1999). Having a strong identification and connection strengthens community collaboration. Community identity can affect collective action and shift individuals' self-interests towards more collective community goals. Apart from the social aspects, the decision-making process within CECs is guided by environmental attitudes. It has been identified that high environmental concern has a positive influence on pro-environmental behaviour (Kilbourne and Pickett, 2008). Preferences for environmental issues serve as cognitive criteria for judging the suitability of a certain behaviour (Kotchen and Reiling, 2000). Furthermore, concerns about energy security play an important role. In this respect, energy security concern is defined as the affective evaluation of the significance of risks and hazards to energy security, reflected in individual feelings of apprehension. Energy security concern is a wide-ranging concept and includes concerns about the outcomes of interruptions to the energy supply (energy reliability), the affordability of energy (energy affordability), specific threats to the energy system and whether the country's energy supply system is too dependent on foreign energy imports (energy dependency) (Poortinga et al., 2016).

· *MOTIVES.* Diverse motives influence individuals' involvement in CECs, ranging from social and environmental motives aligned with communities' commitments to sustainability, concerns about climate change, the transition to renewable energy and policy incentives, as well as economic reasons, including addressing poverty and social equity problems in some communities (Gui and MacGill, 2018; Wiersma and Devine-Wright, 2014). The willingness of local citizens to participate in CECs could be driven by environmental factors, such as environmental beliefs and concerns about climate change as well as by community-related socio-institutional factors, such as community trust, and the desire for energy independence. Environmental beliefs/concerns, renewables acceptance, desire for energy

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

independence, community trust and community resistance have been identified as important aspects in ascertaining the willingness to participate in CECs (Bomberg and McEwen, 2012; Koirala et al., 2018). In particular, environmental motives may predict a certain sustainable energy behaviour, such as involvement in a community energy initiative (Dietz, 2015). There is some indication that environmental motives may relate to involvement in CECs (Sloot et al., 2019).

It is often argued that individuals are interested in engaging in sustainable energy behaviour if it serves their self-interest, especially from the financial point of view (Frederiks et al., 2015). In fact, some CEC members have indicated that financial motives affect their decision to participate in energy communities. However, they also consider collective or altruistic benefits when adopting sustainable energy behaviour. In general, people are motivated to be involved in relevant social groups, such as their local community. This implies that communal motives are also important in predicting involvement in community energy initiatives. In some cases, individuals may become involved in community energy groups because they are motivated by their community (Dóci and Vasileiadou, 2014; Hoffman and High-Pippert, 2010; Sloot et al., 2019).

· *ENERGY LITERACY AND LEARNING PROCESSES.* Energy literacy encompasses three different dimensions: knowledge, attitudes and behaviour. According to van den Broek (2019), one of the more complex operationalisations of energy literacy sees it as a multifaceted concept which brings together device energy literacy, action energy literacy, financial energy literacy and more general knowledge of energy. The latter encompasses energy attitudes, value, understandings of energy production and consumption as well as energy-related behaviours (van den Broek, 2019). Accordingly, DeWaters and Powers (2011) define energy literacy as the domain of basic energy-related knowledge, combined with a consideration of the environmental impacts of energy production and consumption – how energy is consumed in everyday life and the adoption of energy-saving behaviours. In terms of CECs, energy literacy can elicit two different mechanisms. On one hand, people who are more energy literate are supposedly more likely to join a CEC or even start one. On the other hand, energy literacy can be strongly linked with CECs' learning processes, whereby the inclusion of individuals in a CEC may actually enhance their energy literacy (Chodkowska-Miszczuk et al., 2021) with possible spillover effects evident in changes in energy-related behaviours in the household or knowledge sharing among family members, CEC members, friends and beyond (Qiu et al., 2016). Thus, the design of clean energy programmes is, to a large extent, a trigger for learning processes.

In sum, the EU has put tremendous emphasis on the role that citizen-consumers should play in its vision of the Energy Union (Horstink et al., 2021). Yet without a strong motivation within the citizens themselves and additional outside support for their inclusion in CECs, such a vision is unlikely to materialise soon. The success of CECs at the European level is, thus, highly dependent on the citizens' general support for the transition and their readiness to be involved in CECs. Investigating people's understanding, attitudes, affect and behaviours in relation to CECs is, therefore, crucial for building action competence and ensuring that individuals become functional members of CECs (e.g. Cotton et al., 2016).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

4 METHODOLOGY

The quantitative study presented in this report is a follow-up to a qualitative study among members of the studied CECs in the NEWCOMERS project. Thus, the quantitative study was designed on the basis of both the theoretical framework and findings of the qualitative study presented in D6.1 (Kamin et al., 2020).

For collecting, assembling and analysing the data for D6.2, we applied a four-step methodological approach. In the first step, we constructed the survey (see section 4.1) using the theoretical framework briefly described above. In the second step, we sent the survey to the members of our NEWCOMERS CECs and collected the empirical data (see section 4.2). In the third step, we analysed the collected data and made a comparative quantitative analysis of our five CECs (see section 4.3). Finally, we discussed the findings from the quantitative analysis in relation to findings of our qualitative study of CEC members (see section 4.4) to assess the potential of energy communities to contribute to the energy transition in the EU.

The four-step methodology was as follows:

a) Constructing the survey
b) Survey of CEC members (collection of empirical data)
c) Quantitative analysis of the collected data
d) Synthesis: Integration of the main findings from the qualitative and quantitative studies among CECs members

4.1 Constructing the survey

In the first methodological step, drawing from some of the latest and most prominent theoretical concepts (see Table 1) and results of the qualitative study presented in D6.1, a team from the University of Ljubljana constructed a survey to administer to CEC members. The survey was presented to all consortium teams and discussed by the consortium partners during various online workshops/meetings, resulting in the final survey (see Appendix 1).

We divided the survey into six thematic areas:

- Participation in a CEC
- Social role, community trust and perceived value
- Motivation to be part of the CEC
- Challenges and concerns
- Attitudes towards clean energy
- Energy literacy – knowledge and learning processes

Research questions in each thematic area were based on specific theoretical concepts representing the main theoretical framework for the issues we wanted to highlight in D6.2. Table 1 provides an overview of the survey design alongside the theoretical background and studied concepts.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1: Survey design according to theoretical background, research constructs and their dimensions

RESEARCH THEMES	RESEARCH CONSTRUCTS	RESEARCH DIMENSIONS	THEORETICAL BACKGROUND	SURVEY QUESTIONS
1. Participation in a clean energy community	Active community involvement Willingness to be actively involved in the community	·investing in the CEC ·attending meetings ·participating in decision-making processes ·sharing knowledge ·promoting the CEC	Kalkbrenner and Roosen, 2016 Koirala et al., 2018	Q3 Q4
2. Social role, community trust and perceived value	Identification with the community Competence-based trust Community trust Empowerment Emotional value Economic value Functional value Ecological value Social value	·commitment to the CEC ·identification with the CEC ·relying on CEC leaders ·trusting CEC members ·empowerment; influencing organisational structure, energy policies, financial decision ·emotional perception of being involved in the CEC ·economic utility ·environmental concern ·social solidarity ·interaction with other members	Sloot et al., 2019 Gillespie, 2011 Albuquerque et al., 2017 Gordon et al., 2018 Koller et al., 2011 Reinsberger and Posch, 2014 Chen, 2013	Q5 Q6 Q7 Q8 Q10 Q25 Q26 Q27
3. Motivation to be part of the clean energy community	Financial motive Environmental motive Social motive Technological motive Energy independence /security motive Incentives	·reducing costs ·'invest to earn' ·reducing fossil fuels consumption ·community involvement ·being part of the climate change movement ·engaging with the new technologies ·being independent from large power companies (energy independence) ·energy subsidy, tax deduction	Sardianou and Genoudi, 2013 Koirala et al., 2018 Sloot et al., 2019 Reinsberger and Posch, 2014 Cole et al., 2018	Q9 Q10 Q11 Q12
4. Challenges and concerns	Organisational barriers for engagement Clean energy technology concerns	·challenges to participating in the CEC ·concerns about technology for electricity production (maintenance, toxicity, visual impact, noise, etc.)	Reinsberger and Posch, 2014 Cole et al., 2018 Boudet, 2019 Koirala et al., 2018	Q13 Q14 Q15

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

5. Attitudes towards clean energy	Social norms Attitudes about clear energy communities Energy reliability concerns Energy affordability concerns Energy dependency concerns Energy supply concerns	·personal responsibility to move to renewable energy sources ·opinions about the role of public institutions ·personal attitude towards clean energy ·importance for being energy independent (household level, community level, country level)	Kalkbrenner and Roosen, 2016 National Energy Foundation, n.d. Poortinga et al., 2016	Q8 Q16 Q17 Q18
6. Energy literacy – knowledge and learning processes		·exploring the 'sources' that CEC members use to inform and learn about energy issues	ComRes and National Energy Foundation, 2014 National Energy Foundation, n.d.	Q19 Q20 Q21

The survey was designed to cover the central topics related to respondents' participation in CECs as well as various factors that were hypothesised to influence CEC involvement. The target concepts were operationalised on the basis of the established theoretical background and literature review. Some questions were based on past studies (e.g. Boudet, 2019; Chen, 2013; Cole et al., 2018; Gillespie, 2011; Kalkbrenner and Roosen, 2016; Koirala, 2018; Reinsberger and Posch, 2014; Sloot et al., 2019) and adapted as needed to the context of CECs involved in the NEWCOMERS project. Two existing survey instruments on attitudes towards energy were used in their original or slightly modified form from the primary sources (ComRes and National Energy Foundation, 2014; Poortinga, 2016).

The NEWCOMERS project partners translated the source survey in English to the local languages according to the guidelines prepared to assure complete, comparable and methodologically appropriate translation of question wordings.

The online survey platform 1KA (https://www.1ka.si/d/en) was used to develop the survey. A separate survey link and database were used for each community to allow flexible survey deployment and real-time data collection monitoring. In the case of GEN-I (in Slovenia), three respondents answered a paper-and-pencil version of the survey.

4.2 Survey for CEC members (collection of empirical data)

The target population for the survey was representatives of households who are members of selected NEWCOMERS CECs and who were willing to distribute the survey invitation among their members. In addition to the 'core' case CECs in the project, project partners were asked to consider additional CECs (with household members) to be part of the survey in their respective countries. Only one person per household was asked to complete the survey to avoid overrepresentation of larger households.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

In general, representatives of all households in each target community were invited to participate in the survey, which was beneficial because many of the selected communities were relatively small (i.e. included relatively few household members). For survey research like this, therefore, the sample size is at the lower bound. Community managers were asked to send email invitations containing a link to the online survey to CEC members. For the Slovene GEN-I Jesenice community, postal mail invitations were used along with email invitations to reach households without registered email addresses in an attempt to improve participation. Another slight exception to the recruitment procedure was the German Sonnen community which published the survey invitation in the community newsletter asking interested members to opt in to receive the survey invitation, which was in line with their personal data protection policy.

The survey was anonymous in the sense that no personal information that would reveal respondents' identities was collected and no contact information (e.g. names, postal or email addresses) was linked to survey responses at any stage of the data collection or processing. Since the mailings of invitations and reminders were handled by the management of each community, no personal information about community members needed to be provided to the research team of the University of Ljubljana, the project partner responsible for the survey data collection.

4.2.1 Description of the sample

Table 2 provides the basic context of the respondents according to their type of CEC. As it is evident from the descriptions in the table, the NEWCOMERS project encompasses very diverse CECs: they are of different sizes; some are place-based, while some are virtual; they are positioned in different geo-political regions of Europe; and they are established and managed within different national and regional energy policies. Those contextual differences affect CEC goals and interests, problem definitions and interpretations, different solutions and employed clean energy technologies.

Table 2: Sample of the surveyed clean energy communities

Country	**Type of new clean energy community**	**Number of survey respondents** (out of total CEC members)
Germany	***Sonnen Community (Sonnen-DE)*** ● Virtual community of Sonnen battery owners; trading platform ● Surpluses generated are fed into a 'virtual pool' for other members to benefit from ● SonnenFlat tariff as payment mechanism ● Option for battery owners to make a small share of their storage capacity available to a public network to create a 'virtual battery' ● Optimising amounts of solar used, lowering costs, benefit of green electricity at household level; flexibility services at grid level	**21** (out of approx. 40,000)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Italy	***Solidarity & Energy (SO_EN-IT)*** ● Place-based; innovative contracting and community-based products ● Addressing energy poverty; using technological innovation for social value creation ● Strong focus on energy poverty and efforts to find replicable solutions in different contexts ● Social housing ● Spreading awareness of environmental issues and benefits of renewable energy technologies	**5** (out of approx. 50)
The Netherlands	***Zuiderlicht (ZL-NL)*** ● Place-based, innovative contracting + community-based products ● Investing means owning solar panel(s) on a roof nearby and benefitting from the Postcoderoos tax reduction; even if not investing, members still get a 1% discount/kWh on all rates of the green energy provider Greenchoice ● All investing members decide annually what interest rate they will receive on their loans ● Interest rates are paid from the income generated by selling solar energy to the grid ● The cooperative also gets €25/year/connection from green energy provider Greenchoice which it re-invests in projects	**63** (out of approx. 900)
Slovenia	***GEN-I Jesenice (GEN-I-SI)*** ● Place-based; community energy aggregation ● Collective self-consumption in an apartment building in Jesenice, 23 households ● 129 solar panels; innovative heat pump system ● Power common areas and heating system, then apartments ● Cost savings for residents, increased energy efficiency and purchasing power ● GEN-I Sonce + GEN-I ESCO + engaged and interested community of owners ● First solar system for an apartment building in Slovenia ● System co-financed by owners of the units	**6** (out of approx. 23)
Sweden	***Dalby Solby (DS-SE)*** ● Place-based community; local RE supply ● Interested in sustainable living and sustainable energy; wanting to make the village as sustainable as possible, inspiring others and being part of the movement/transition ● Sharing as a guiding principle ● Solar panels to cover common areas' consumption; solar thermal collectors to provide heat used in shared building and laundry	**28** (out of approx. 50)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

	room; energy efficient appliances, such as LED lamps, to increase energy efficiency; own shares in wind turbine ● Cooperative technology ownership to increase sustainability (and decrease costs) of communally used buildings/areas	
United Kingdom	***Energy Local*** ● Place-based; innovative contracting ● Local cooperatives ('Clubs'): households and local RE generation plants; contractual arrangements with Octopus Energy (licenced supplier) ● Linking generation with consumption over (public) low voltage distribution networks ● Fixed time of use tariffs are used to encourage consumers to shift consumption to times of local generation and times of lower demand ***<u>*Complications with collecting data for the quantitative study*</u> Initially, we wanted to include in our analysis also the English CEC 'Energy Local'. However, data collection in our case study, Energy Local, UK, was hampered by conditions on the ground. In November 2019, operation of the original club, Energy Local Bethesda, was temporarily paused when the licenced supplier, with whom the club had a partnership, was acquired by another firm. The pause was intended to be brief, allowing the new licenced supplier to migrate bespoke algorithms for the allocation of power between members but remains in place more than 20 months later. Trouble accessing data from the original meters resulted in each meter needing to be replaced. The decision to re-write the software to track power between members also caused further delays. The club's relaunch, originally envisaged at the end of summer 2020, has been pushed back repeatedly. Due to the pause in community activity, the decision was originally made to wait for the club to be relaunched before surveying members. At the time of writing D6.2, Energy Local Bethesda is yet to be relaunched.	**0**

The final sample consisted of 123 members of five CECs in five NEWCOMERS countries. As shown in Table 2, there were 63 valid responses from Zuiderlicht, based in the Netherlands (ZL-NL), 21 from Sonnen in Germany (Sonnen-DE), 28 from Dalby Solby in Sweden (DS-SE), 6 from GEN-I Jesenice in Slovenia (GEN-I-SI) and 5 from Solidarity & Energy in Italy (SO_EN). In the analyses, the numbers may be lower due to item non-response. Since the number of respondents is quite low (ZL-NL, for example, has more than 900 members, but only 63 members responded to the survey, yielding a rather small response rate, and a low response rate was an issue also in the biggest of the studied CECs, Sonnen-DE, and the smallest, GEN-I-SI and SO-EN-IT). Thus, the results should be treated with extreme caution. Data in ZL-NL were collected from 2 March to 22 March 2021, in Sonnen-DE from 27 April to 12 May 2021, in DS-SE from 2 February to 2 March 2021, in SO_EN-IT from 28 January to 26 February 2021 and in GEN-I-SI from 12 February to 4 March 2021. In all CECs, informed consent was acquired in accordance with GDPR rules and the research ethics standards as well as the ethical code of the University of Ljubljana were followed.

In ZL-NL (N = 63), 52.6% of respondents are male and 47.4% are female. Their average age is 61.1 years with a standard deviation of 13.4, ranging between 29 and 81 years. The majority of respondents

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

have a Master's degree (52.6%), followed by a Bachelor's degree (15.8%), short-cycle tertiary education or doctoral-level education (both 14.0%) and upper secondary or post-secondary non-tertiary education (3.5%). The majority have a net household income of €2,500–€2,999 (25.0%), followed by €1,500–€1,999 and €2,000–€2,499 (both 15.4%). Moreover, 50.9% are employed or self-employed (55.2% of these working full-time) and 49.1% are retired. The majority of respondents live in an apartment building (58.2%), about a third in a semi-detached home (32.7) and a few in a detached home (9.1%). The majority of respondents live in a city (82.5%), 14.0% in a rural area and 3.5% in a town or suburb. In ZL-NL, the majority of respondents live in a two-member household (44.6%), about a third (35.7%) in a one-member household and some in a three-member (5.4%) or four-member (14.3%) household. Lastly, 52.2% of respondents have children (mostly 2 or 3).

In Sonnen-DE (N = 21), 93.8% of respondents are male and 6.3% are female. Their average age is 55.8 years with a standard deviation of 6.2, ranging between 43 and 67 years. The majority of respondents have a Master's degree (37.5%), followed by primary or lower secondary education (18.8%), upper secondary or post-secondary non-tertiary, short-cycle tertiary or a Bachelor's degree (12.5% each) or a doctoral degree (6.3%). The majority have a net household income of €5,000–€5,499 (18.8%), followed by €2,500–€2,999, €3,500–€3,999, €4,000–€4,499, €5,500–€5,999, €7,000+ (12.5% each), €4,500–€4,999 or €6,000–€6,499 (both 6.3%). Furthermore, 81.3% are employed or self-employed (92.3% of these working full-time) and 18.8% are retired. The majority of respondents live in a detached home (62.5%) and the rest live in a semi-detached home (37.5%), which can be explained by the fact that owning a Sonnen storage battery and related solar panels requires home ownership. Half the respondents live in a rural area, a quarter in a city and a quarter in a town or suburb. Most respondents live in a two- or three-member household (both 37.5%), followed by a four-member household (18.8%) and a five-member household (6.3%). Finally, 58.3% of respondents have children (mostly 2 or 3).

In SO_EN-IT (N = 5), 60.0% of respondents are male and 40.0% are female. Their average age is 61.2 years with a standard deviation of 4.7, ranging between 57 and 69 years. Moreover, 80.0% have upper secondary or post-secondary non-tertiary education and 20.0% have short-cycle tertiary education. The majority have a net household income of €500–€999 (60.0%), followed by €1,000–€1,499 (40.0%). In addition, 60.0% are employed or self-employed (33.3% of these working full-time), 20.0% are retired and 20.0% have housework and caretaking responsibilities. Most respondents live in an apartment building (40.0%) or a semi-detached home (40.0%) and the rest in a detached home (20.0%). All respondents live in a city. Most respondents live in a one-member household (60.0%) and the rest live in a two-member household (40.0%). Lastly, 26.7% of respondents have children (mostly 2 or 3).

In DS-SE (N = 28), 33.3% of respondents are male and 66.7% are female. Their average age is 54.5 years with a standard deviation of 15.3, ranging between 31 and 70 years. The majority of respondents have a Bachelor's or Master's degree (31.8% each), followed by short-cycle tertiary and doctoral-level education (18.2% each). The majority have a net household income of €2,460–€2,950 (23.8%), followed by €6,390–€6,880 (14.2%), €980–€1,470, €1,470–€1,960, €2,940–€3,430, €4,900–€5,390 or €5,880–€6,270 (each 9.5%) and €1,960–€2,450, €3,920–€4,410 or €6,860+ (both 4.8%). In addition, 72.7% are employed or self-employed (75.0% of these working full-time), 18.2% are retired and equal percentages (4.5%) are students or have housework and caretaking responsibilities. Most respondents live in a town or suburb (81.8%) and the rest live in a rural area (18.2%). The majority live in a two-member household (36.4%), followed by a one-member household (18.2%), three-member household (22.7%), four-member household (18.2) and five-member household (4.5%). Finally, 27.6% of respondents have children (mostly 1 or 2).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

In GEN-I-SI (N = 6), 66.7% of respondents are male and 33.3% are female. Their average age is 50.8 years with a standard deviation of 12.4, ranging between 40 and 69 years. The majority of respondents have upper secondary or post-secondary non-tertiary education (66.7%), followed by short-cycle tertiary education and a Master's degree (both 16.7%). The majority have a net household income of €500–€999 (42.9%), followed by €1,000–€1,499 (28.6%), €1,500–€1,999 (14.3%) and €2,500–€2.999(14.3%). Moreover, 66.7% are employed or self-employed (50.0% of these working full-time) and 33.3% are retired. All respondents live in an apartment building in a city. Most respondents live in a three- or four-member household (both 33.3%) and some live in a two- or five-member household (both 16.7%). Lastly, 62.5% of respondents have children (mostly 2 or 3).

Table 3: Distribution of sample by age group, gender and residence area type[1]

	ZL-NL (N=63)	**Sonnen-DE (N=21)**	**SO_EN-IT (N=5)**	**DS-SE (N=28)**	**GEN-I-SI (N=6)**
Males	30 (52.6%)	15 (93.8%)	3 (60.0%)	7 (33.3%)	4 (66.7)%
Females	27 (47.4%)	1 (6.3%)	2 (40.0%)	14 (66.7%)	2 (33.3%)
Age					
up to 30 years	2 (3.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
31 to 60	19 (33.3%)	13 (81.3%)	3 (60.0)%	12 (60.0%)	4 (80.0%)
60+	36 (63.2%)	3 (18.8%)	2 (40.0%)	8 (40.0%)	1(20.0%)
Type of area					
city	47 (82.5%)	4 (25.0%)	5 (100.0%)	0 (0%)	6 (100.0%)
town or suburb	2 (3.5%)	4 (25.5%)	0 (0%)	18 (81.8%)	0 (0%)
rural area	8 (14.0%)	8 (50.0%)	0 (0%)	4 (18.2%)	0 (0%)

4.3 Quantitative analysis of the collected data

After the empirical data from the surveys in each CEC were collected, we started the quantitative analysis. The data analysis was done in SPSS 25 statistical analysis software. For nominal-level variables, simple frequency distributions were calculated (valid percentages were considered in the interpretation). For ordinal- (with at least a 4-point Likert type scale), interval- and ratio-level variables, means were calculated.

All analyses are presented by substantive groups of questions in a table for all countries together. However, it should be stressed that **CECs in different countries are very different**; therefore, **comparisons should be done with great caution**. In addition, we should stress that the **samples of studied CECs are not representative of these CECs**. Thus, on the basis of respondents' answers included in our study, generalisation to the studied CEC as a whole must also be done with caution. The results, analysis and interpretations of the comparative quantitative analysis are presented in section 5. More detailed summary results by CEC are attached in Appendix 2.

[1] In the analyses, the numbers may be lower due to item non-response.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

4.4 Survey synergy and synthesis: Integrating qualitative and quantitative data

After conducting the quantitative analysis and interpretation of the results (section 5), we discussed and compared the results with the main findings of the qualitative study among CECs members presented in D6.1 to better understand the quantitative results and put them in context (section 6). The aim of this integration was to provide evidence-based assumptions about the potential of CECs to affect the energy transition among members and the general public.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

5 RESULTS – QUANTITATIVE ANALYSIS OF THE SURVEY

In the following, we summarise the main findings from the survey. These are structured along eight main themes:

- Typology of clean energy technology usage in the respective NEWCOMERS-CEC
- Participation in the CEC
- Social role of the respondent, community trust and perceived value
- Social norms
- Motivation to be part of the CEC
- Challenges and concerns
- Attitudes towards clean energy
- Energy literacy – knowledge and learning processes

Warning on how to read the data interpretations[2]:

The case study research based on analysing and potentially comparing the scores/values of predetermined variables is especially sensitive. Case studies are normally small-N studies which differ from large-N studies in terms of generalisability of the findings and possibility of more general comparisons. It is, therefore, prudent to acknowledge that any generalisation of such studies, especially those based on very small samples, can be seriously limited both regarding the generalisation to a population of similar cases and especially with respect to making inferences across different cases with very different contextual backgrounds and/or different operational settings (Blatter and Haverland, 2012). In this regard, we should stress the following:

- The studied samples of CECs are not representative of these CECs, and some samples are very small. Thus, interpreting the presented data with percentages should be made with caution. In Table 2, we make the sample sizes for each CEC explicit. Samples for Slovene and Italian CECs are smaller than 10.

- Due to variations among the studied CECs, comparisons among them should be done with great caution. Even when comparisons are made, these should be thought of for the sample of particular CECs, not for CECs in general. Thus, on the basis of respondents' answers included in our study, generalisation to the studied CECs as a whole would be inadequate and interpretations would surpass the real informative value of the presented data.

5.1 Typology of clean energy technology usage in NEWCOMERS clean energy communities

Our respondents reported on the technology they use in their CECs as follows. In **ZL-NL**, more than half the respondents reported using a smart power meter (59.6%; provided to customers by the grid

[2] Our warning, however, does not aim to disregard the value of our results. They are meant to be read as open-ended to generate further investigations and forums for discussion. Based on the limitations mentioned above, the value of presented insights is foremost in illustrating cases that are unique and developing an understanding of how specific relevant concepts may work in particular CEC settings.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

operator) and solar panels shared by the community (51.9%), followed by own solar panels (46.2%), a heat pump (5.8%) and wind turbines (5.8%). The smallest numbers disclosed having a battery for energy storage (1.9%) and an electric vehicle (1.9%). About a fifth (19.2%) also reported using some other electricity generation or management technology. In **Sonnen-DE**, almost all respondents disclosed having their own solar panels (91.7%) and battery for energy storage (95.5%), half reported using smart power meters (50.0%) and more than half electric vehicles (54.5%). Almost a fifth (18.2%) reported using a heat pump. In **SO_EN-IT**, a third reported using solar panels shared by the community (33.3%). In **DS-SE**, the majority stated that they use wind turbines (57.9%) and slightly more than a third indicated that they use solar panels shared by the community (36.8%). Many respondents reported using heat pumps (47.4%) and electric vehicles (31.6%). About a quarter (26.3%) indicated that they use some other electricity generating or management technology, while 5.3% reported using their own solar panels and the same percentage of local hydroelectric power. In **GEN-I-SI**, members disclosed using solar panels shared by the community (85.7%), while some reported using their own solar panels (14.3%), and 71.4% reported using a heat pump.

The data above not only show the variability of energy-related technology with which CEC members interact in their daily lives but also indicate their knowledge of all energy-related technology used in a particular CEC. For example, in some CECs cases it is known that all members use the same technology in their CEC building (e.g. solar panels and heat pumps, since they are shared by the CEC), but respondents from these CECs did not report using this technology. This suggests that not all CEC members are fully aware of the technologies used by their own CEC. Consequently, in some cases, there could be a discrepancy between the real level of energy literacy and self-reported energy literacy among CEC members (presented in section 5.8).

5.2 Participation in the clean energy community

5.2.1 Active community involvement

Table 4 presents members' community involvement, such as investing (financially) in the CEC, attending meetings, participating in decision-making processes, sharing knowledge and promoting their CEC.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4: Active community involvement – Did you ever do any of the following in your energy community? (Q3)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Invested money in a project run by your energy community	88.9%	4.8%	0%	32%	100%
Attended a community meeting	68.3%	14.3%	50%	100%	66.7%
Shared your knowledge or experience related to energy with other members of the energy community	40.3%	19%	60%	50%	40%
Promoted your energy community to potential new energy community members	73%	76.2%	0%	88.5%	83.3%
Participated in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	30.2%	9.5%	0%	84.6%	66.7%
Participated in steering your energy community (like decision-making about investments or participation in community management board)	9.8%	4.8%	0%	65.4%	50%

Regarding community activities, in **ZL-NL**, a large majority of respondents reported investing money in a community project (88.9%) and promoting the CEC to potential new members (73.0%), and quite a few had also attended community meetings (68.3%). To a lesser extent, they shared knowledge and experience with other members (40.3%) and undertook some organisational responsibilities (30.2%). Few (9.8%) participated in steering the CEC. In **Sonnen-DE**, members are the most active regarding promoting the community to potential new members (76.2%) but less involved in most other activities – 19.0% shared knowledge and experience with other members, 14.3% attended community meetings, 9.5% performed some organisational duties, 4.8% invested money in the CEC and the same percentage participated in steering the CEC. Respondents from **SO_EN-IT** reported sharing knowledge and experience (60.0%) and attending community meetings (50.0%) to quite some extent. They have not invested money in the community because the community is a social housing project. Neither did they report undertaking organisational duties or promoting the community to potential new members. All **DS-SE** members indicated that they attend meetings, many of them have borne some organisational responsibilities (84.6%) and participated in steering the community (65.4%), invested money to some extent (32.0%) and have been quite active in sharing knowledge and experience with other members (50.0%). In **GEN-I-SI**, all members have invested money in the community, quite a few have promoted the community to potential new members (83.3%), taken on some organisational duties (66.7%), attended meetings (66.7%), participated in steering the community (50.0%) and shared knowledge and experience with other members (40.0%).

In general, the majority of respondents reported rather high involvement across several CEC activities, showing that respondents in this study are rather engaged in running their CECs. They seem to be important actors in sharing energy-related knowledge within and/or outside their CECs. From this point of view, CEC members can be significant players in promoting CECs in their region.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

5.2.2 Willingness for active community involvement

After enquiring about (past) community members' involvement (Q3), we asked the CEC members, if they have such an opportunity in the future, how likely would it be that they would be willing to participate in any of the community activities (Q4) to measure CEC members' willingness for active community involvement.

Table 5: Willingness for active community involvement – If you had such an opportunity in the future, how likely would it be that you would be willing to do any of the following in your community? (Q4)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Invest money in a project run by your energy community	4.03	3.57	2.60	3.52	4.40
Attend community meetings	3.94	3.86	4.50	4.52	4.33
Share your knowledge or experience related to energy with other members	3.73	4.10	3.25	3.88	3.83
Promote your energy community to potential new energy community members	4.35	4.14	3.75	4.60	4.40
Participate in your energy community with minor organizational responsibilities	2.84	3.05	3.50	4.24	4.20
Participate in steering your energy community	2.35	3.33	3.00	3.44	4.20

**** Measured on a 5-point scale: 1 - definitely not willing 2 - probably not willing 3 - maybe yes, maybe not 4 - probably willing, 5 - definitely willing; mean value.*

Regarding opportunities to get involved in different CEC activities, **ZL-NL** respondents are, on average, the most willing to promote their CEC to potential new members and invest in the CEC and the least willing to participate in steering the community. **Sonnen-DE** respondents are, on average, the most willing to promote their CEC to potential new members and share knowledge and experience with other members and the least willing to bear minor organisational responsibilities. **SO_EN-IT** respondents are, on average, the most willing to attend community meetings and promote their CEC to potential new members and the least willing to invest money in CEC projects. **DS-SE** respondents are, on average, the most willing to promote their CEC to potential new members and attend community meetings and the least willing to steer the community. **GEN-I-SI** respondents are, on average, the most willing to promote their CEC to potential new members and invest money in CEC projects and the least willing to share knowledge and experience with other members.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

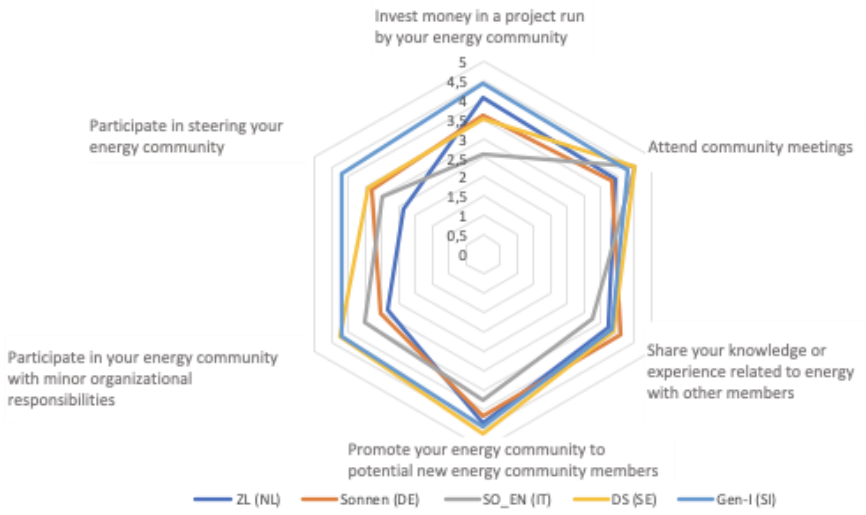

Figure 2: Willingness for active community involvement (mean values)

Overall, it seems that promoting their CECs is what most members are open to, while stronger involvement, like participating in management or making financial investments, is less appealing to them (Figure 2).

5.3 Social role, community trust and perceived value

5.3.1 Identification with the clean energy community

An important research focus of the survey was to determine the members' identification with their CECs. We explored the extent of the members' pride in and commitment to their CECs and present the results in Table 6.

Table 6: Identification – How much do you agree or disagree? (Q5)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
I identify myself with our energy community	3.38	4.20	2.80	4.16	4.33
I feel committed to our energy community	3.67	3.65	2.50	4.28	4.33
I am proud to be a member of our energy community	4.03	4.15	3.50	4.40	4.50
Being a member of our energy community is a central part of how I see myself	3.02	3.90	2.75	3.40	3.83

****Measured on the 5-point (dis)agreement scale: 1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree; mean value*

ZL-NL respondents show the highest agreement with being proud to be a CEC member and the lowest agreement that being a CEC member is a central part of how they see themselves. **Sonnen-DE**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

respondents show the highest agreement with identifying with their CEC and the lowest agreement with commitment to the CEC. **SO_EN-IT** respondents show the highest agreement with being proud to be a CEC member and the lowest agreement with being committed to the CEC. **DS-SE** respondents show the highest agreement with being proud to be a CEC member and the lowest agreement that being a CEC member is a central part of how they see themselves. Lastly, **GEN-I-SI** respondents show the highest agreement with being proud to be a CEC member and the lowest agreement that being a CEC member is a central part of how they see themselves.

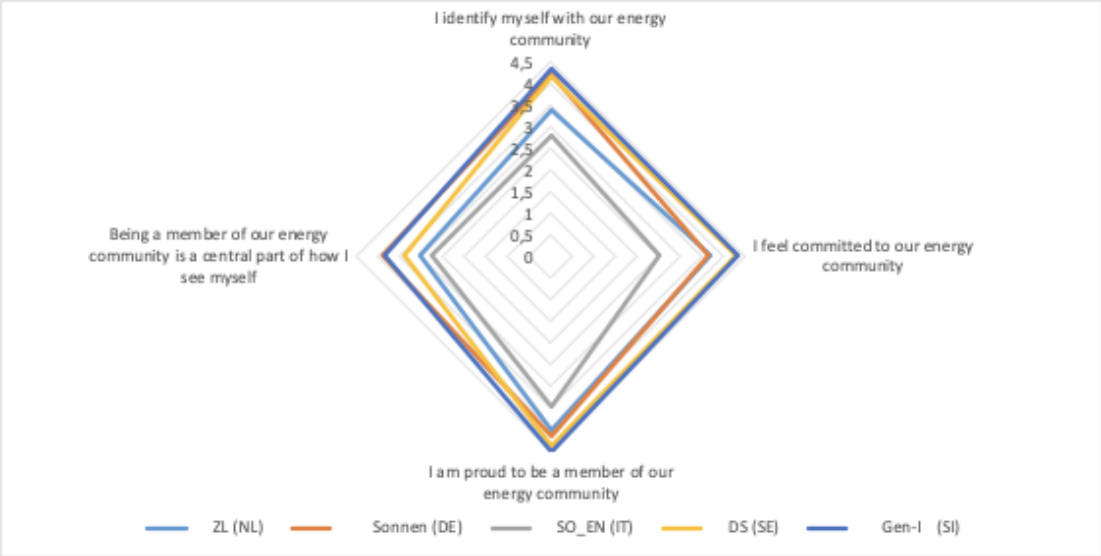

Figure 3: Members' identification with their clean energy community (mean values)

Overall, taking all identification items together, the results indicate that identification with CECs is above average in all studied communities apart from **SO_EN-IT**, which could be related to the fact that this CEC is in its early developmental stage. It seems that members of two place-based communities in which members also show above average CEC meeting attendance and sharing of organisational responsibilities (**DS-SE** and **GEN-I-SI**) exhibit the highest level of identification with their CEC on average (Figure 3).

5.3.2 Trust

5.3.2.1 Trust within the clean energy community

Regarding the trust dimension, we were firstly interested in the 'competence-based trust' dimension within the CEC. We tried to identify how the members rely on their CEC leaders to handle crucial issues on behalf of the community. Secondly, we explored the 'community trust' dimension, where we were interested in how the members perceive and trust other community members; if they contribute enough, if are they egoistic, if they share relevant information, etc.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 7: Trust (a) – How much do you agree or disagree? (Q6)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
I can rely on the leaders of our energy community to handle important issues on behalf of the community	4.54	4.08	4.20	4.12	4.50
I am confident that potential problems with the energy-related technology used in our energy community will be resolved efficiently	4.41	4.29	4.25	4.05	4.50
Most members respect rules set out by our energy community	4.20	4.15	3.75	4.09	4.33
Some members are part of our energy community for their personal benefits only	2.57	3.25	2.50	2.29	2.33
Some members are contributing much less to our energy community than I do	2.47	3.00	3.67	2.60	2.74
Our energy community is transparently sharing information among its members	4.30	3.73	4.50	4.21	4.17

****Measured on the 5-point (dis)agreement scale: 1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree; mean value*

Regarding attitudes towards their CEC, **ZL-NL** respondents agree the most that they can rely on their CEC leaders to handle CEC issues on their behalf and that potential problems would be solved efficiently. Furthermore, they agree the least that some members are there just for their personal benefits and that some members contribute much less than they do. **Sonnen-DE** respondents agree the most that potential problems would be solved efficiently and that most members respect the CEC's rules. They agree the least that some members are there just for their personal benefits and that some members contribute much less than they do. **SO_EN-IT** respondents agree the most that their CEC transparently shares information among them and that potential problems would be solved efficiently. They agree the least that some members are there just for their personal benefits and that some members contribute much less than they do. **DS-SE** respondents agree the most that they can rely on their CEC leaders to handle CEC issues on their behalf and that their CEC transparently shares information among them. They agree the least that some members are there just for their personal benefits and that some members contribute much less than they do. **GEN-I-SI** respondents agree the most that they can rely on their CEC leaders to handle CEC issues on their behalf and that potential problems would be solved efficiently. They agree the least that some members are there just for their personal benefits and that some members contribute much less than they do.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

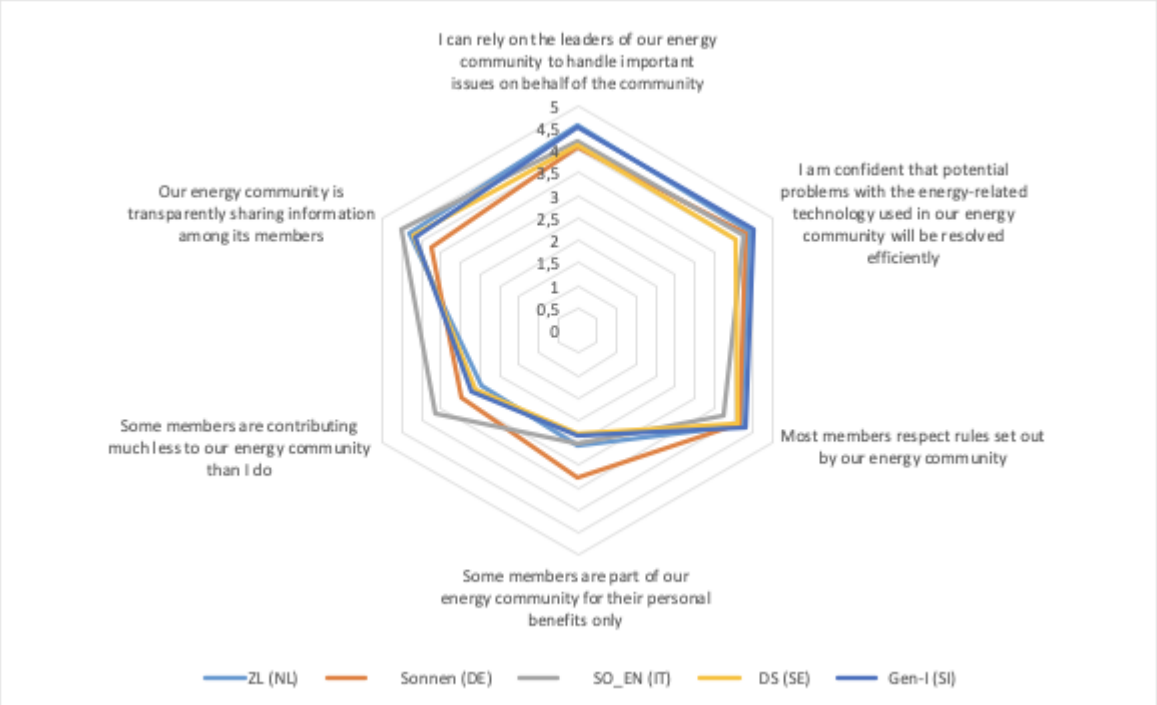

Figure 4: Trust within clean energy communities (mean values)

Overall, the studied CECs seem to be organised in a way which allows members to rely on each other and trust each other to contribute to the community (and, together, to a better future). This is an expression of rather high collective empowerment – something that future CECs could assure to their members of as well (Figure 4).

5.3.2.2 Trust in people in general

Apart from the mentioned specific question about community trust and trust in competence within CECs, we measured members' trust in people in general. First (Q26), we asked the members if people (in general) would take advantage of them if they had the opportunity to or if people would try to be fair to them. Regarding general trust, the value of trust is the highest in **DS-SE** (100% of all who responded to the question), followed by **ZL-NL** (94.7%) and **Sonnen-DE** (75.0%) and relatively low in **SO_EN-IT** (60.0%) **GEN-I-SI** (33.3%).

Second (Q27), we asked CEC members if they think people (in general) try to be helpful or only pursue their own interests. General trust corresponds well to the opinion about whether people are helpful in general or mainly pursue their own interests. In response to whether people in general try to be helpful, 90.9% of **DS-SE** respondents, 89.5% of **ZL-NL** respondents and 75.0% of **Sonnen-DE** respondents agreed. Half of **GEN-I-SI** respondents (50.0%) and 40.0% of **SO_EN-IT** respondents were of the same opinion.

Third (Q25), we posed a similar question about trust in people in general (see Table 8 and Figure 5). CEC members were asked if they trust people, if they can rely on anybody and if it is better to be disbelieving of strangers in general.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 8: Trust (b) – What is your opinion on the following statements? (Q25)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
In general, you can trust people	3.09	2.81	3.00	3.14	2.33
Nowadays you cannot rely on anyone	2.46	2.06	2.20	1.27	2.17
When dealing with strangers, it is better to be careful before you trust them	2.46	2.87	3.00	2.23	2.83

***Measured on the 4-point scale: *1 - strongly disagree, 2 - disagree, 3 - agree, 4 - strongly agree; mean value*

It seems that respondents from all CECs trust people, in general, less than they trust their CEC co-members, which is not surprising, since social closeness usually increases trust.

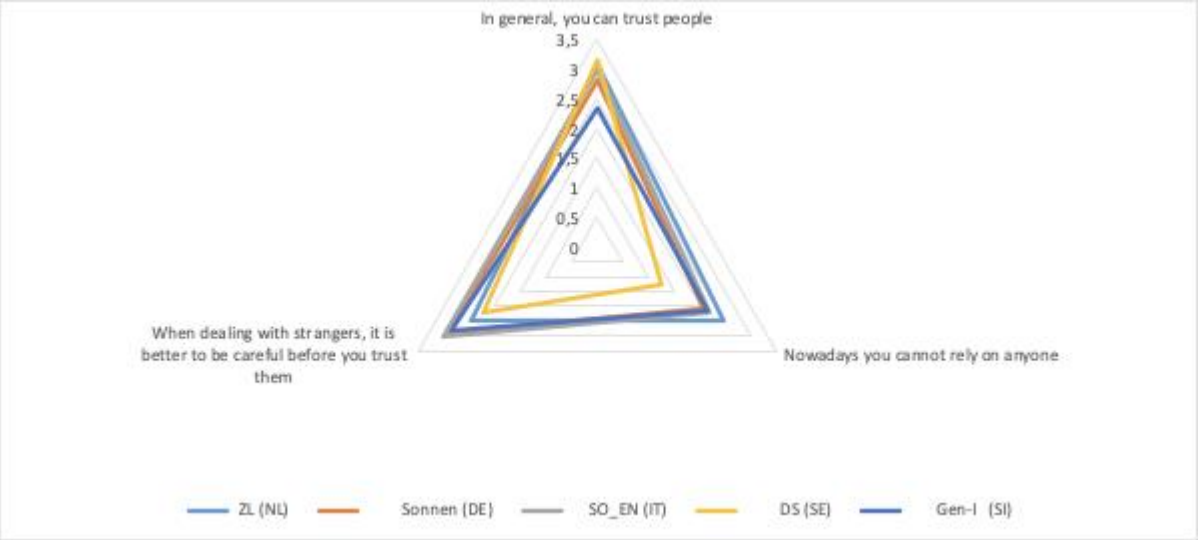

Figure 5: Trust in people in general (mean values)

The data also suggest rather high individualisation in the sense that our respondents think they should take matters into their own hands, since they cannot really rely on anyone (but themselves). Such interpretation is in accordance with the relatively strongly expressed motive for joining a CEC to secure independence from big energy companies.

5.3.3 Empowerment

Empowerment represents an important dimension of the survey. We tried to learn if CEC members are able to influence decision-making processes (e.g. regarding energy policies and organisational structure within their community) and if they feel they have a voice in (local and/or regional) energy transition processes. In general, we tried to identify if the members feel empowered within their CECs.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 9: Empowerment – How much do you agree or disagree with the following statements? (Q7)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Formal community rules enable members to influence the organisational structure of the energy community	4.08	3.28	3.20	3.48	3.50
I feel that our local government is supportive of the activities of our energy community	3.92	2.72	3.40	3.16	3.00
I can influence financial decisions or investments in our energy community	3.69	2.61	2.25	3.72	3.83
As a member of the energy community I feel I could influence the energy policy in my country	3.24	3.89	2.00	2.96	3.17
Since joining the energy community, I feel more connected with the people in my local community	2.78	3.17	3.20	3.92	3.50
Since joining the energy community, I feel I can actually influence the transition to clean energy in our society	3.64	4.11	3.20	3.40	3.67

***Measured on the 5-point (dis)agreement scale *1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree; mean value*

With regard to being able to influence the community and transition to new technologies, **ZL-NL** respondents, on average, agree the most that formal community rules give them influence and that the local government is supportive of their CEC. However, their connectedness with the local community, on average, has not increased since joining the CEC. **Sonnen-DE** respondents, on average, agree the most that they feel they can actually influence the transition to clean energy and that as CEC members, they feel they can influence energy policy in the country. They agree the least that they have influence over their CEC's financial decisions. In **DS-SE**, respondents, on average, agree the most that they feel more connected to the local community since joining the CEC and that they can influence the CEC's financial decisions. They agree the least that they have influence over the country's energy policy. **SO_EN-IT** respondents, on average, agree the most that the local government supports them. They agree the least that they can influence the country's energy policy. **GEN-I-SI** respondents, on average, agree the most that they feel they can influence the CEC's financial decisions and that as members of the CEC, they feel they can influence the transition to clean energy. They agree the least that the local government supports them.

We also asked CEC members if they were personally involved in making the decision to join the CEC or whether this decision was made by others (Q10). A large majority of those who responded to the question had been personally involved in making the decision to join the CEC in **DS-SE** (100%), **ZL-NL** (96.6%) and **Sonnen-DE** (94.1%) and to a lesser extent so in **GEN-I-SI** (66.7%) and **SO_EN-IT** (20.0%).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

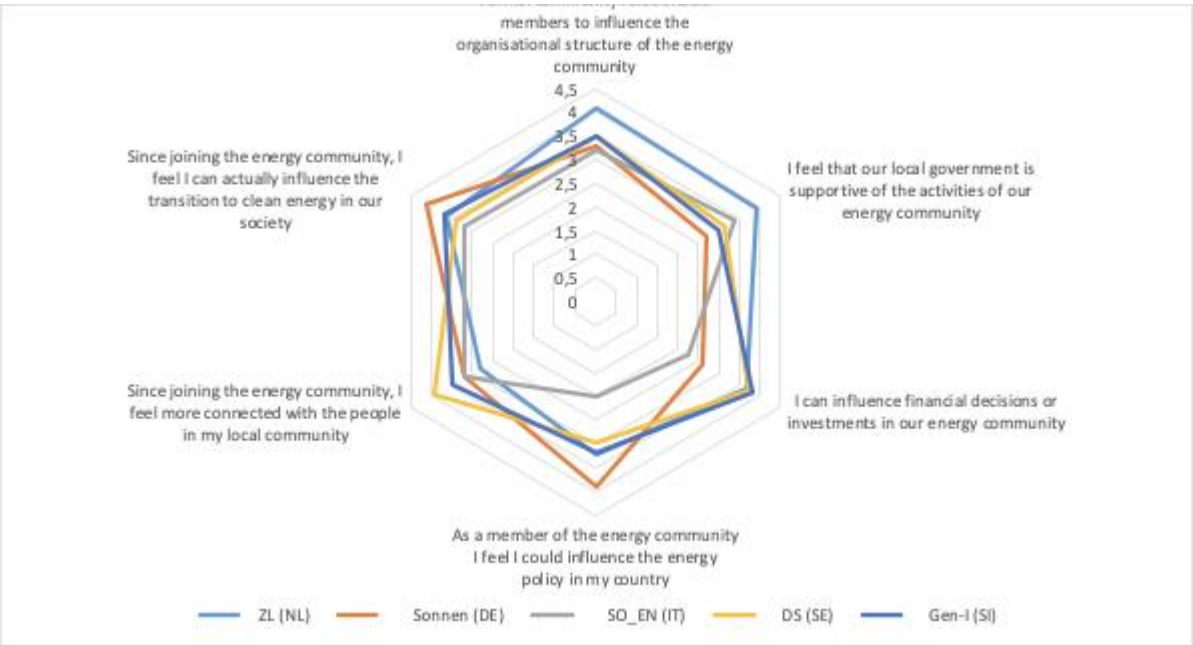

Figure 6: Empowerment (mean values)

In general, across CECs, the biggest expression of individual empowerment lies in respondents' assessment that they can influence their CEC's organisational structure (Figure 6). Perhaps an even more significant finding is that, in general, respondents across all CECs feel they can, because they belong to the CEC, influence the transition to clean energy. This is an expression of collective empowerment that could be a very important factor in further diffusing CECs in the EU.

5.3.4 Perceived Value

Questions for identifying dimensions of members' perceived value relating to their involvement in CECs were among the most complex questions in the survey. We aimed to identify **emotional value** (feeling like one is setting a trend towards a more sustainable society; feeling proud to be a CEC member), **economic value** (getting electricity for a better price; making energy more affordable), **functional value** (understanding the importance of clean energy for the environment; receiving useful advice regarding energy consumption), **environmental value** (fulfilling responsibilities for future generations, expressing environmental concern) and **social value** (strengthening social solidarity; interacting with like-minded people).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 10: Value – How much do you agree or disagree? (Q8)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Emotional value	***3.44***	***4.03***	***4.00***	***4.01***	***4.00***
As a member of our energy community I feel like a trendsetter of a sustainable future	3.19	4.28	4.00	3.67	4.00
I feel proud being a member of our energy community	3.69	3.78	4.00	4.35	4.00
Economic value	***2.81***	***3.78***	***4.20***	***2.38***	***4.00***
As a community member I get electricity for a better price	2.81	3.78	4.20	2.38	4.00
Functional value	***3.26***	***3.48***	***3.50***	***3.36***	***4.10***
As a community member I better understand the importance of clean energy for the environment	3.66	3.67	3.60	3.58	4.20
As a community member I have received a lot of useful advice regarding energy consumption in my home	2.86	3.28	3.40	3.13	4.00
Environmental value	***3.94***	***3.92***	***3.50***	***3.71***	***4.30***
Participation in our energy community helps me fulfil responsibilities for future generations	4.00	4.00	3.60	3.83	4.40
Participation in our energy community allows me to express my environmental concern	3.88	3.83	3.40	3.58	4.20
Social value	***3.63***	***3.57***	***3.73***	***3.85***	***3.87***
Participation in our energy community strengthens my social solidarity	3.54	3.78	3.60	4.00	3.80
Our energy community improves the image of the municipality	3.75	3.33	4.00	3.58	4.00
Participation in our energy community gives me a better chance to interact with like-minded people.	3.59	3.61	3.60	3.96	3.80

***Measured on the 5-point (dis)agreement scale: *1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree; mean value*

Regarding value types, **ZL-NL** members score the highest on environmental value; they tend to agree most that they fulfil their responsibilities to future generations and express environmental concern while economic and functional value types appear to have the lowest levels of agreement. Interestingly, **Sonnen-DE** members score the highest on emotional value and the lowest on functional value. Social value derived from the CEC is also not considered important for Sonnen-DE members compared to other value types. In contrast, **SO_EN-IT** members agree most with gaining economically – getting electricity for a better price – and emotionally. The lowest score seems to be on agreement that the CEC represents a source of functional and environmental value for them. **DS-SE** members agree that emotional value is, on average, most important, while economic value is comparably very low in importance, followed by functional value. **GEN-I-SI** members agree the most around the environmental value of being part of the CEC, followed by functional value and economic value. Social value appears to be the least important in comparison to other value types.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

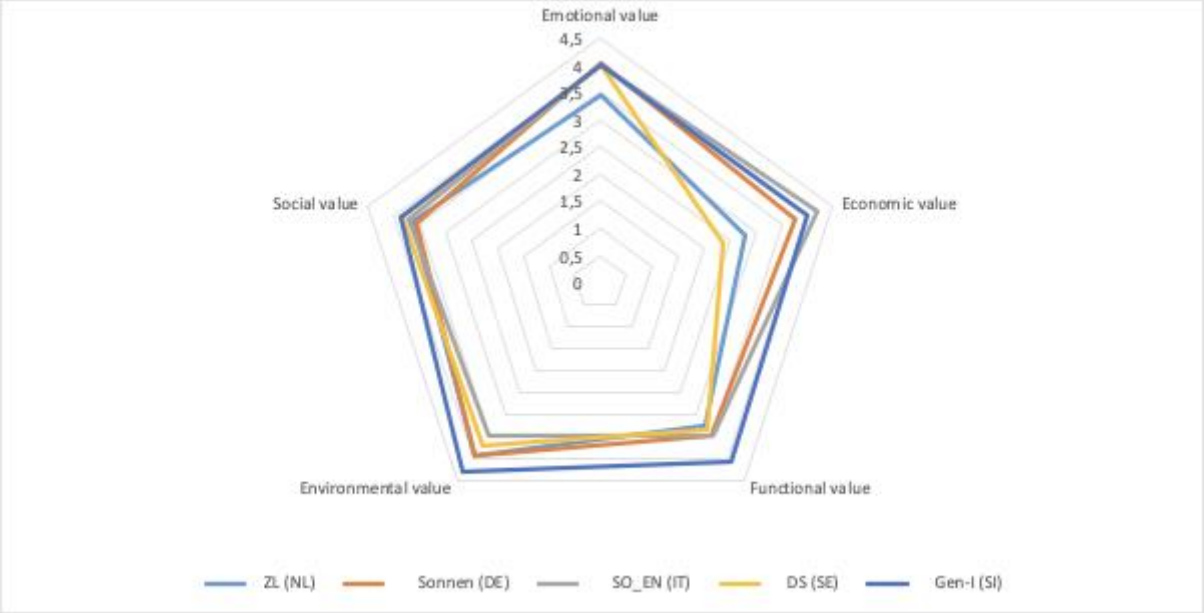

Figure 7: Value types (mean values)

In general, respondents in all CECs value their membership in the CEC in all the measured value dimensions (Figure 7). However, the economic value of membership (measured only in terms of the affordability of energy) seems to be expressed the most within two CECs (SO_EN-IT, GEN-I-Si), and according to other data, this seems to be the most sensitive regarding the price of energy consumed in their households.

5.4 Social norms

Social norms are a crucial component of motivation and behaviour. In general, they inform members of CECs how to understand their involvement in the CEC, how to feel about it and how to behave in it.

Table 11: Social norms – How much do you agree or disagree? (Q8, Q16)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
People I care about would approve of my participation in our energy community	3.85	3.67	3.80	3.87	4.00
Many of my peers use electricity generated from renewable energy sources	2.83	2.88	3.80	3.43	3.17
It is our responsibility to move to renewable energy sources	3.40	4.62	3.60	4.61	4.33

***Measured on the 5-point (dis)agreement scale: *1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree; mean value*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

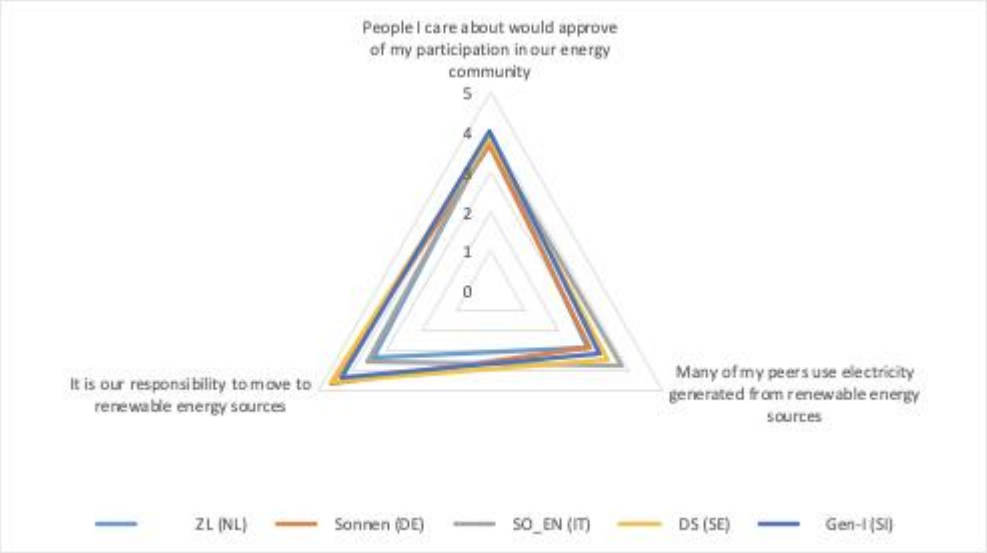

Figure 8: Social norms (mean values)

Members of all studied CEC communities in general perceive rather high support from important others for their CEC engagement, which leads us to conclude that participation in CECs is perceived as a socially desirable activity (Figure 8). This is also evident from respondents' agreement with renewable energy sources being a societal norm (responsibility). However, rather moderate agreement with both statements related to 'peer pressure' might also indicate that participation in CECs is either not substantially discussed with important others and/or that important others are supportive but not enthusiastic about CECs' issues. In addition, it might indicate that due to the relative novelty of CECs, few of the respondents' peers actually use electricity from renewable sources.

5.5 Motivation to be part of a clean energy community

5.5.1 Motives

Understanding what influences participation in CECs is essential for shaping future clean energy policies, which could promote upscaling of CEC innovative models. In this survey, we explored the following motives: **financial motives** (reducing household electricity costs; investing money), **environmental motives** (reducing fossil fuels consumption), **social motives** (doing things with other community members; being part of a movement addressing climate change), **technological motives** (engaging with new technologies) and **energy independence/security motives** (being independent from large power companies; contributing to energy security).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 12: Motives – How important are the following reasons for you to be part of your energy community? (Q9)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
To reduce electricity costs in the household	1.71	3.18	3.40	1.75	3.33
To invest and earn money	1.71	2.41	2.40	1.13	2.17
To reduce fossil fuels consumption	3.75	3.78	3.60	2.87	3.50
To do things together with other community members	2.02	2.29	3.40	3.25	3.17
To be part of a movement addressing climate change	3.20	3.44	3.20	3.08	3.00
To engage with the new technologies	2.56	3.50	3.00	2.46	3.33
To be independent from large power companies	2.80	3.50	2.80	2.25	3.50
To contribute to my energy security	2.07	3.39	2.60	2.25	3.50

***Measured on the 4-point scale: *1 - not at all important, 2 - slightly important, 3 - quite important, 4 - very important, mean values.*

For **ZL-NL** members, environmental motives (reducing fossil fuels consumption and being part of the movement addressing climate change) were expressed more as other motives, while financial motives (reducing the cost of electricity and investing and earning money) seem to be the least important. For **Sonnen-DE** members, environmental motives seem to be highlighted the most, followed by technological motives and energy independence motives. The least important motives for this CEC in Germany seem to be social motives. For members of **SO_EN-IT**, environmental motives lead in importance, as do financial motives, with regard to reducing electricity costs, and social motives related to engaging with other members. The least important for the Italian CEC seems to be motives related to energy independence and security and financial motives related to investment. For members of **DS-SE**, environmental and social motives seem most important, while financial motives seem unimportant for members of this CEC. For **GEN-I-SI** members, the importance of all motives is above average, with environmental motives and motives related to energy security and independence being perceived as the most important ones. Financial motives related to money investment seem to have the least importance.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

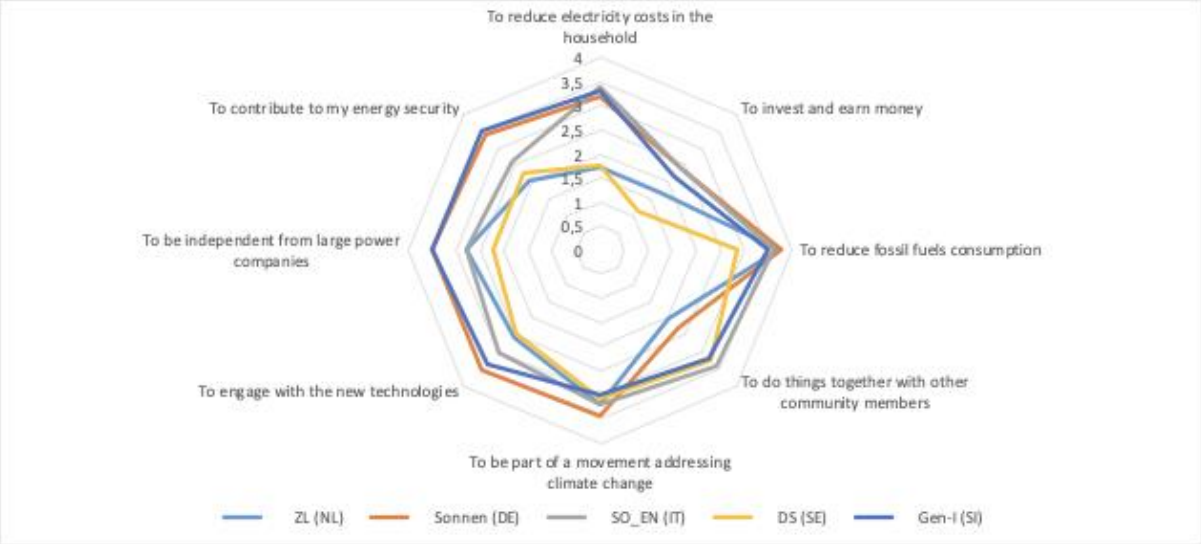

Figure 9: Motives for being part of a clean energy community (mean values)

Respondents' expressed motives for joining CECs are in accordance with data presented thus far and speak of rather united main motives across all CECs for joining the respective CECs: motivation to actively lead the way towards cleaner energy systems in society is foremost and is related to the environmental value of CEC membership (Figure 9).

5.5.2 Incentives

Beside the importance of personal motives for joining CECs, we measured the perceived importance of various factors (energy subsidy, tax reduction, etc.) that could incentivise people to join a CEC.

Table 13: Incentives – How important were the following factors in your decision to join the energy community? (Q11)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Opportunity to receive an energy subsidy	1.16	1.93	4.00	1.25	2.50
Opportunity for energy tax deduction	1.12	1.80	1.00	1.25	2.75
Encouragement from family or friends	1.44	1.67	3.00	1.83	2.00
Special offer from a company	1.16	1.87	3.00	1.21	2.50
Positive experience of other members of this or other energy communities	1.70	2.73	1.00	2.13	2.50
Direct invitation to join the energy community	1.79	1.40	4.00	1.65	2.25

***Measured on the 4-point scale: *1 - not at all important, 2 - slightly important, 3 - quite important, 4 - very important, mean values.*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

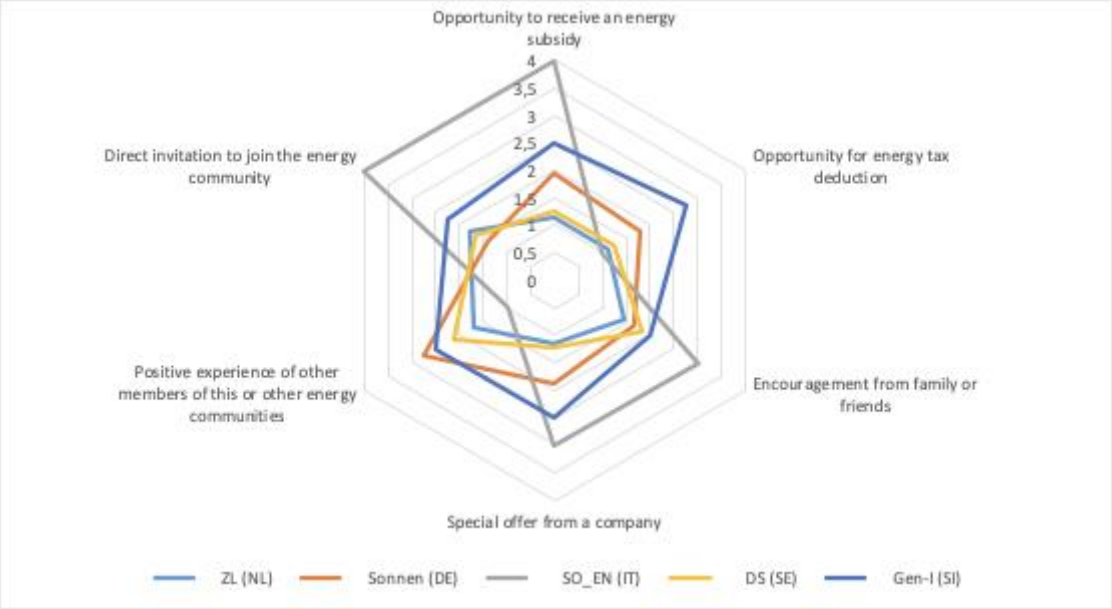

Figure 10: Incentives to join a clean energy community (mean values)

With the exception of the Italian CEC, and partly of the Slovene CEC, our respondents in general did not find the above listed external motivators (incentives) important when deciding to join a CEC (Figure 10). Members of the Italian CEC, however, perceived three incentives as important or very important – namely, the opportunity to receive an energy subsidy, a special offer from a company and encouragement from family or friends. Among all incentives, an opportunity for energy tax deduction seems to be particularly important among respondents from the Slovene CEC. Positive experiences of other CEC members seem to be a somewhat important factor for several respondents.

5.6 Challenges and concerns

5.6.1 Challenges

We tried to determine the difficulties our CEC members perceived regarding their participation in a CEC, be it a personal challenge (e.g. problem in using a new technology; lack of support from other household members) or an organisational barrier (e.g. bureaucratic problems, uncertainty regarding liability and legal affairs, etc.).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 14: Challenges – To what extent have the following factors presented a challenge to your participation in the clean energy community? (Q13)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Need to learn how to use a new technology	2.03	2.13	2.33	1.65	2.33
Problems installing equipment	1.46	1.87	2.67	1.75	2.00
Bureaucratic problems	1.64	2.75	2.00	1.75	3.00
Uncertainty regarding liability and legal affairs	1.56	1.86	1.67	1.81	2.20
Lack of support from other household members	1.20	1.46	1.67	1.67	2.60
Lack of cooperation of other community members	1.18	1.60	2.33	1.60	2.60
Lack of information about the project	1.33	1.50	2.50	1.62	2.60
Expenses related to the project	1.26	2.20	1.67	1.53	2.60
Doubts over financial benefits	1.43	1.64	1.67	1.37	2.25
Doubts about the performance of technology (solar panels or wind turbines)	1.33	1.38	1.67	1.45	2.00

*** Measured on the 4-point scale: *1 - not a challenge at all, 2 - a small challenge, 3 - a moderate challenge, 4 - a large challenge.*

Respondents from **GEN-I-SI** and **SO_EN-IT** appear to have faced the most challenges. In **ZL-NL**, nothing seems really challenging. In **Sonnen-DE**, expenses related to the project and bureaucratic problems have been the most challenging. In **SO_EN-IT**, the most challenging problems seem to be related to the installation of equipment and lack of information about the project. In **GEN-I-SI**, bureaucratic problems present the greatest challenge.

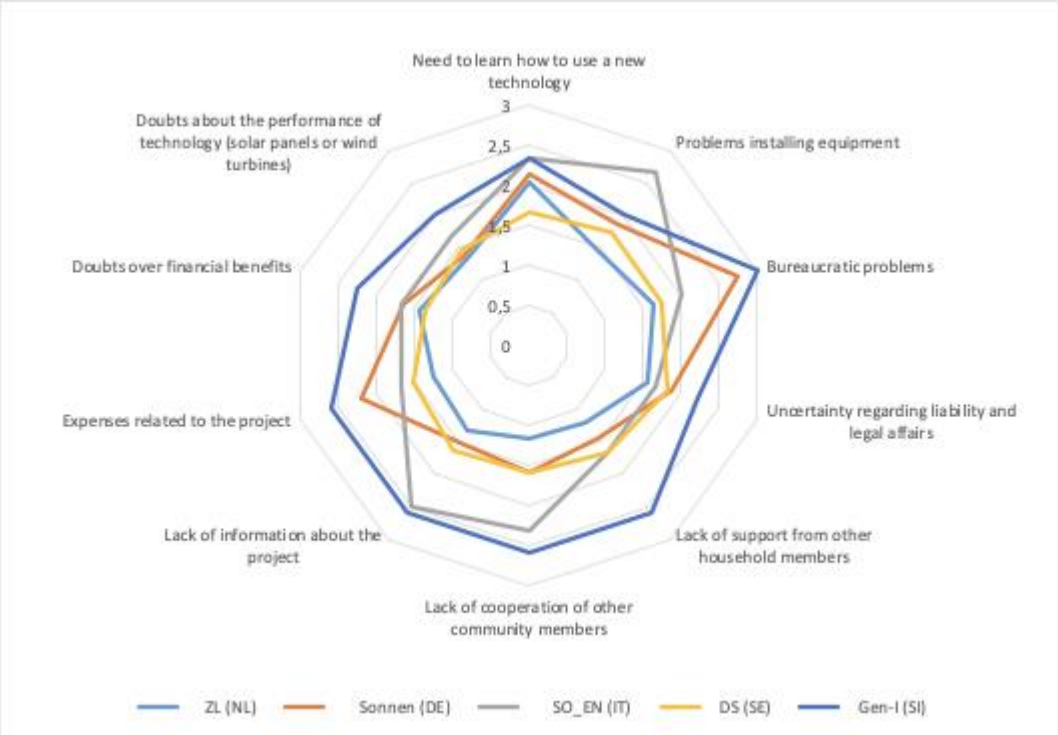

Figure 11: Challenges related to participation in a clean energy community (mean values)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

However, in general, as is evident from Table 14 and Figure 11, the majority of respondents across the CECs did not express many (and significant) challenges to participating in their CECs. In drawing such a conclusion, we should stress again that the nature of our samples does not allow us to generalise these findings to all CECs.

5.6.2 Concerns

In the survey, we asked CEC members about how concerned they are about various aspects related to the technology that they use for electricity production in their households or CECs.

Table 15: Concerns – How concerned are you about the following factors related to the technology for electricity production in your household or energy community? (Q14)[3]

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Costs of maintaining the technology	1.36	1.31	1.80	1.48	1.67
Toxicity of materials in solar panels	1.56	1.38	1.25	1.50	1.33
Flammability of materials in solar panels	1.62	1.31	1.25	1.33	1.83
Impact of materials used for solar energy production technology on ecosystem	1.92	1.44	1.25	1.83	1.67
Impact of materials used for wind energy production technology on ecosystem	2.33			1.50	
Visual impact of solar panels	1.49	1.25	1.25	1.00	1.33
Visual impact of wind turbines	2.33			1.25	
Noise caused by wind turbines	2.33			1.50	
Problems with recycling solar panel materials	2.08	1.81	1.50	2.00	1.83

*** Measured on the 4-point scale: *1 - not at all concerned, 2 - slightly concerned, 3 - quite concerned, 4 - very concerned; mean value.*

ZL-NL members evince a bit more concern regarding materials used for wind technology, visual impact and noise impact of wind turbines. The rest are rather unconcerned, but there are some tendencies in the data that might be relevant to consider. **Sonnen-DE** members are the most concerned with problems with recycling solar panels and impact of the production of solar panel technology on the ecosystem. They are the least concerned with maintenance costs, flammability of solar panels and visual impact of solar panels. **SO_EN-IT** members are the most concerned with maintenance costs and problems with recycling solar panels. They are the least concerned with toxicity, flammability and visual impact of solar panels and impact of the production of solar panel technology on the ecosystem. **DS-SE** members are the most concerned with problems with recycling solar panels and impact of the production of solar panel technology on the ecosystem. They are the least concerned with the flammability of solar panels and visual impact of wind turbines. **GEN-I-SI** members are the most concerned with flammability of

[3] Mean values are missing for items related to wind turbines for CECs that do not use this technology.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

solar panels and problems with recycling solar panels. They are the least concerned with the toxicity and visual impact of solar panels.

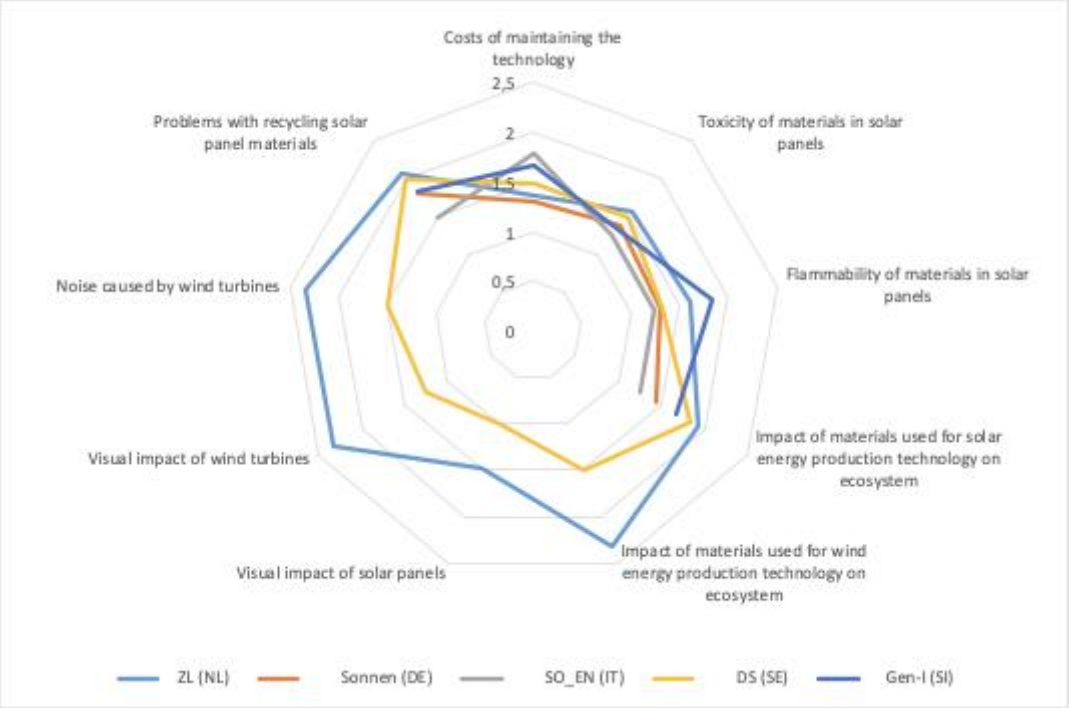

Figure 12: Concerns about technology for electricity production (mean values)

To summarise, the majority of respondents across CECs are not particularly concerned about the technology for electricity production in their households or CECs (Figure 12).

5.7 Attitudes towards clean energy

To determine CEC members' views on several energy issues (Q16, Q17, Q18), we explored how the members view citizens' responsibility to adopt renewable energy sources and whether they view public institutions as potential role models in switching to clean energy sources. We tried to determine whether energy efficiency is important to them and how important it is, in their view, for society in general. We also aimed to identify their energy-related concerns, including energy reliability concerns (possible power cuts in their country), energy affordability concerns (energy might become too expensive for many people in their country), energy dependency concerns (their country is too dependent on energy imports from other countries) and energy supply concerns (being too dependent on using energy generated by fossil fuels, such as oil, gas and coal).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 16: Attitudes towards clean energy (a) - How much do you agree or disagree with the following statements? (Q16)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Public institutions should be a role model in switching to clean energy sources	4.57	4.81	4.20	4.70	4.33
Clean energy communities are the future of energy provision	3.72	4.56	4.00	4.00	4.17
Clean energy communities make energy more affordable for everyone	4.17	4.00	4.00	3.43	4.50
Not everyone can afford to join a clean energy community	2.69	3.25	3.00	3.65	2.50

*** Measured on the 5-point (dis)agreement scale: *1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree; mean value*

Regarding general attitudes towards clean energy and new energy communities, **ZL-NL** respondents agree the most that public institutions should be role models in switching to clean energy and that CECs make energy more affordable for everyone. They agree the least with the statement that not everyone can afford to join a CEC. **Sonnen-DE** respondents agree the most that public institutions should be role models in switching to clean energy and that CECs are the future of energy provision. They agree the least with the statement that not everyone can afford to join a CEC. **SO_EN-IT** respondents agree the most that public institutions should be role models in switching to clean energy, that CECs make energy more affordable for everyone and that CECs are the future of energy provision. They agree the least that not everyone can afford to join a CEC. **DS-SE** respondents agree the most that public institutions should be role models in switching to clean energy. They agree the least that CECs make energy more affordable for everyone and that not everyone can afford to join a CEC. **GEN-I-SI** respondents agree the most that CECs make energy more affordable for everyone and that public institutions should be role models in switching to clean energy. They agree the least that not everyone can afford to join a CEC.

Overall, we could say that members of CECs see themselves as part of the future, since they, in general, strongly believe that CECs are the future of energy provision. However, respondents seem rather united in expecting more from public institutions, expecting them to lead by example. In this sense, they view them as having the greatest responsibility for the transition to clean energy.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 17: Attitudes towards clean energy (b) – How much do you agree or disagree with the following statements? (Q17)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
Energy efficiency and conservation just isn't that important to me	1.52	1.69	3.20	2.13	2.33
When home, I take actions to conserve energy	4.31	4.25	4.00	4.13	4.17
There is very little I can do personally to conserve energy in my home	2.03	2.13	2.20	2.35	2.50
I am not willing to conserve energy at home if that comes at any cost to my comfort	2.29	2.38	2.20	2.13	1.83
Energy efficiency is vital to our national economy	4.16	4.44	3.60	3.78	4.00
The government has a strong role to play in our nation's energy efficiency and conservation policies	4.57	4.37	4.00	4.39	3.33
Clean energy is more important than reliable and affordable energy	3.47	3.50	3.80	3.26	3.67

*** Measured on the 5-point (dis)agreement scale: *1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - strongly agree; mean value*

The attitudes towards energy conservation show that **ZL-NL** respondents agree the most that the government has a strong role to play in efficiency and conservation and that they take actions to save energy at home. They agree the least that energy efficiency and conservation are not that important to them and that there is very little they can do to conserve energy at home. **Sonnen-DE** respondents agree the most that the government has a strong role to play in efficiency and that energy efficiency is vital to their economy. They agree the least that energy efficiency and conservation are not that important to them and that they are not willing to conserve energy at home at any cost to their comfort. **SO_EN-IT** respondents agree the most that the government has a strong role to play in efficiency and conservation and that they take actions to save energy at home. They agree the least that there is very little they can personally do to conserve energy at home and that they are not willing to conserve energy at home if it comes at the cost of their comfort. **DS-SE** respondents agree the most that the government has a strong role to play in efficiency and conservation and that they take actions to save energy at home. They agree the least that energy efficiency and conservation are not important to them and that they are not willing to conserve energy at home if it comes at the cost of their comfort. **GEN-I-SI** respondents agree the most that they take actions to conserve energy at home and that energy efficiency is vital to the national economy. They agree the least that energy efficiency and conservation are not important to them and that there is very little they can do to conserve energy at home.

Overall, the attitudes about energy conservation in general do not differ much when comparing the average mean scores of all energy conservation items across CECs. Respondents across CECs tend to be more disagreeable than agreeable about the statements on energy conservation. However, the results show the opposite concerning attitudes about energy efficiency and the importance of clean energy; that is, the respondents in all studied CECs tend to generally agree on the importance of energy efficiency and clean energy.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 18: Attitudes towards clean energy (c) – How worried are you about the following issues related to energy in your country? (Q18)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
That there may be power cuts in the (country)	2.25	2.13	2.20	2.43	2.83
That energy might become too expensive for many people in the (country)	2.79	2.56	2.80	2.57	2.83
The (country) being too dependent on energy imports from other countries	3.11	3.19	2.60	3.00	3.50
The (country) being too dependent on using energy generated by fossil fuels such as oil, gas and coal?	3.96	4.06	3.20	3.74	3.67
The (country) being too dependent on using nuclear energy	2.93	3.25	1.80	3.57	3.67

*** Measured on the 5-point scale: *1 - not at all worried, 2 - not very worried, 3 - somewhat worried, 4 - very worried, 5 - extremely worried; mean values*.

Regarding worries about energy, **ZL-NL** respondents are most worried about the country being too dependent on fossil fuels and energy imports from other countries. They are the least worried about power cuts and energy becoming too expensive. **Sonnen-DE** respondents are the most worried about the country being too dependent on fossil fuels and nuclear power. They are the least worried about power cuts and energy becoming too expensive. **SO_EN-IT** respondents are the most worried about the country being too dependent on fossil fuels and energy becoming too expensive. They are the least worried about power cuts and being too dependent on nuclear power. **DS-SE** respondents are the most worried about the country being too dependent on fossil fuels and nuclear power. They are the least worried about power cuts and energy becoming too expensive. **GEN-I-SI** respondents are the most worried about the country being too dependent on fossil fuels and nuclear power. They are the least worried about power cuts and energy becoming too expensive.

To summarise, respondents across CECs seem less concerned with issues of energy affordability and availability and more worried about issues of energy security and energy independence (national energy dependency on either 'dirty' energy and/or energy import from other countries).

5.8 Energy literacy – knowledge and learning processes

We asked respondents several questions to help us determine their energy literacy. One of these was a general question aimed at identifying their perceptions of how informed they are about energy issues (see Table 19). We aimed to identify sources that members use to inform themselves about energy issues (see Table 20) and resources they would turn to when they have any energy-related questions (e.g. trends, policy, efficiency, conservation, etc.; see Table 21).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 19: Energy literacy (a) – In general, how informed do you feel about energy issues? (Q19)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
In general, how informed do you feel about energy issues?	1.96	1.75	3.00	2.13	2.00

***Measured on the 4-point scale: *1 - very well informed, 2 - fairly well informed, 3 - not very well informed, 4 - not at all well informed; mean value.*

Self-perceived energy literacy varied among respondents. The averages suggest that all CEC members consider themselves energy literate to at least some degree. Regarding being informed about energy issues, **Sonnen-DE** respondents feel the most informed and **SO_EN-IT** respondents the least informed. This is a variable where people tend to provide socially desirable answers. One's real energy literacy might differ from one's self-assessed level, which actually might be the case in our study (refer to expressed concern in the first section of the presented results).

Table 20: Energy literacy (b) – Which of the following sources do you use to inform yourself about energy issues? (Q20)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
News or documentary programmes on TV or radio	75%	93,8%	40%	81,8%	83,3%
Searching on the internet	67,9%	100%	0%	45,5%	83,3%
Energy companies or energy providers	41,1%	43,8%	0%	36,4%	66,7%
Newspapers	78,6%	56,3%	0%	63,6%	50%
Magazines	35,7%	43,8%	0%	40,9%	66,7%
Information from national government or my local council	51,8%	18,8%	0%	40,9%	50%
Charities and NGOs	66,1%	18,8%	0%	54,5%	0%
Energy community newsletters	66,1%	87,5%	0%	31,8%	0%
Workshop, webinars or other events organized by our energy community	23,2%	37,5%	40%	9,1%	16,7%
My job	19,6%	12,5%	40%	4,5%	16,7%

In **ZL-NL**, the most common sources of information reported are newspapers (78.6%), TV and radio (75%), the Internet (67.9%), charities/NGOs and CEC newsletters (both 66.1%), national or local government (51.8%), energy companies and providers (41.1%), magazines (35.7%), workshops and other events organised by the CEC (23.2%), job (19.6%) and other sources (5.4%). In **Sonnen-DE**, the most common sources of information are TV and radio (93.8%), CEC newsletters (87.5%), newspapers and magazines (both 56.3%), the Internet (100%), energy companies and providers (43.8%), workshops and other events organised by the CEC (37.5%), national or local government and charities/NGOs (both

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

18.8%), job (12.5%) and other sources (6.3%). In **SO_EN-IT**, the most common sources of information for their members are TV and radio, workshops and other events organised by the CEC and job (all 40.0%). In Italy, the Internet, energy companies and providers, newspapers, magazines, CEC newsletters and charities and NGOs are not sources of information. In **DS-SE**, the most common sources of information are TV and radio (81.1%), newspapers (63.6%), charities and NGOs (54.5%), the Internet (45.5%), magazines and national or local government (both 40.9%), energy companies and providers (36.4%), CEC newsletters (31.8%), workshops and other events organised by the CEC (9.1%), job (4.5%) and other sources (5.4%). In **GEN-I-SI**, the most common sources of information are TV and radio and the Internet (both 83.3%), energy companies and providers and magazines (both 66.7%), newspapers (50.0%), magazines (35.7%), work (19.6%), workshops and other events organised by the CEC and job (both 16.7%) and other sources (5.4%). However, national or local government, CEC newsletters and charities and NGOs are not sources of information for **GEN-I-SI** respondents.

In general, we can see that people get informed about energy issues from various sources. Traditional media still play a relatively important role, but this might be related to respondents' demographic characteristics, for which traditional media are still the most important source of information in general. We can also see that in CECs that produce newsletters, these can be rather important information sources for learning about energy issues.

Table 21: Energy literacy (c) – If you had a question about energy (e.g. trends, policy, efficiency, conservation, etc.), where would you be most likely to turn to find information? (Q21)

	ZL (NL)	Sonnen (DE)	SO_EN (IT)	DS (SE)	Gen-I (SI)
A high school teacher	0%	0%	0%	0%	16,7%
Textbooks	3,5%	12,5%	0%	4,3%	0%
Friends or classmates	17,5%	6,3%	0%	26,1%	16,7%
Family	19,3%	0%	0%	21,7%	0%
Search engines (e.g. Google search)	73,7%	87,5%	0%	73,9%	66,7%
Scholarly research database	19,3%	31,3%	0%	17,4%	16,7%
Online or print encyclopaedias (e.g. Wikipedia)	21,1%	68,8%	0%	47,8%	33,3%
Social media feed; non-professional online profile pages (e.g. friends, family, etc.)	7%	6,3%	0%	4,3%	33,3%
Social media; professional online profile pages (e.g. industry, non-profit, or subject expert)	17,5%	37,5%	0%	26,1%	16,7%
Blogs or forums	17,5%	43,8%	0%	4,3%	33,3%
Government websites (e.g. Department of Energy)	57,9%	75%	20%	60,9%	33,3%
Industry websites (e.g., utility, gas, renewables, etc.)	26,3%	37,5%	0%	30,4%	50%
Non-profit agencies	42,1%	25%	0%	30,4%	0%
My energy community	50,9%	68,8%	80%	34,8%	66,7%
Consumer associations/organizations	38,6%	37,5%	0%	4,3%	16,7%

Regarding potential sources of information about energy communities, most respondents from **ZL-NL** reported websites found by search engines (73.7%), government websites (57.9%), their CEC (50.9%), non-profit agencies (42.1%), consumer associations (38.6%), industry websites (26.3%), encyclopaedias (21.1%), family and scholarly research databases (both 19.3%), friends and classmates,

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

professional social media feeds, blogs and forums (17.5% each), non-professional social media feeds (7.0%), textbooks (3.5%) and others (8.8%). High school teachers are not sources of information.

In **Sonnen-DE**, the most common potential sources of information would be websites found by search engines (87.5%), government websites (75.0%), encyclopaedias (68.8%), their CEC (68.8%), blogs and forums (43.8%), consumer associations and industry websites (both 37.5%), scholarly research databases (31.3%), non-profit agencies (25.0%), textbooks (12.5%), friends and classmates (6.3%), professional social media feeds (37.5%), non-professional social media feeds (6.3%) and others (6.3%). High school teachers and family are not potential sources of information. In **SO_EN-IT**, respondents heavily rely on their CEC (80%) as a potential source of information about energy issues, and the second source is government websites (20.0%). In **DS-SE**, the most common potential sources of information among those who answered the question would be search engines (73.9%), government websites (60.9%), their CEC (34.8%), encyclopaedias (47.8%), industry websites and non-profit agencies (both 30.4%), friends and classmates and professional social media feeds (both 26.1%), family (21.7%), scholarly research database (17.4%), textbooks (4.3%), non-professional social media feeds, blogs and forums and consumer associations (4.3% each). High school teachers and others are not potential sources of information. In **GEN-I-SI**, the most common potential sources of information would be search engines and their CEC (both 66.7%), industry websites (50.0%), encyclopaedias, non-professional social media feeds, blogs and forums, government websites (33.3% each), high school teachers, friends and classmates, professional social media feeds, consumer associations, scholarly research databases and friends and classmates (16.7% each).

In general, people turn to different sources to get answers to energy-related questions. Search engines play an important role, which is not surprising, but these are not sources in themselves but paths to information sources. In general, we can see that people tend to turn to non-commercial sources, such as the government, NGOs and CECs.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

6 DISCUSSION – INTEGRATION OF FINDINGS FROM QUALITATIVE AND QUANTITATIVE ANALYSES

In this section, we present the main findings of the quantitative study on members of the selected CECs and juxtapose and contextualise them with findings from the qualitative study on members of the selected CECs presented in D6.1 (Kamin et al., 2020). Evidence from both studies enabled us to formulate several tentative conclusions that should be considered in promoting the diffusion of CECs for a more efficient energy transition in the EU.

- **A multitude of motives for joining CECs exist, with the environmental motive clearly at the forefront.**

Both the quantitative and qualitative studies on CEC members revealed that there are several motives simultaneously at work that affect the decision to join a particular CEC. Usually, individuals reported several motives for joining a CEC. However, we deduced from the quantitative analysis that some motives seem slightly more decisive than others. In general, across the CECs, the environmental motive was recognised as the most prevalent one – slightly more than the social, energy independence/security and technological motives. It seems that the financial motive was not a central motive for members to join CECs in general but was nevertheless still very relevant and perhaps for some of the studied CECs more than for others.

It is true that quantitative data suggested that financial motives are slightly less prevalent in comparison to other motives. However, on the basis of the qualitative study, we could claim otherwise, at least for some of the studied CECs. Several respondents expressed the importance of financial motives, particularly with regard to energy-related costs reduction, in addition to reducing dependence on the pricing policy of a big energy provider, which is also partially related to financial motives. Most importantly, many respondents highlighted relatively affordable clean energy production as a precondition for joining a CEC. It seems that a strong financial motivation for joining a CEC (to save money on energy consumption and/or to be less dependent on the pricing policy of a big energy provider) is related also to respondents' economic strength and the prices of electricity in the countries of the studied CECs.

Following from the findings of the qualitative study, environmental motives for joining a CEC were most often related to perceived opportunities for contributing to the energy transition and reduction of CO_2 emissions. Yet we should read this with caution: such highly regarded environmental motives might also be related to the need to provide socially desirable answers. Social motives (e.g. 'common activities with other community members') were also very important. Findings revealed that some members, especially in place-based CECs, joined the CEC because of the communal way of living with members who shared the same worldview and were particularly dedicated to an eco-friendly way of life, of which energy consumption is only one aspect. Concerning the importance of energy independence, our qualitative study also revealed that many respondents problematised dependence on big energy providers (i.e. unpredictable pricing policy) and saw joining a CEC as a step towards energy self-sufficiency.

The perceived value of CEC membership is closely linked to expressed motives for CEC membership (Kamin et al., 2020). Quantitative data on perceived value types revealed a similar inclination encountered through the motives analysis. Most respondents reported the personal relevance of several

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

value dimensions related to their CEC membership (emotional value, economic value, functional value, environmental value and social value). However, in general, respondents seemed to perceive economic value as slightly less important than other value types. Drawing from qualitative data, this could be explained by a perceived delay in the return on investment in CEC setup. The economic value of CEC membership was mostly expressed by those who see CEC membership as an alternative approach to financial investment (e.g. the Dutch CEC). Others mostly expressed that the financial value of CEC membership will be visible only after the initial investment in the CEC's technology is refunded by lower energy consumption costs in households, which is expected to take up to 10 years.

- **CEC leaders play a central role in CECs.**

The quantitative study confirmed our conclusions from the qualitative study about the quintessential role of CEC leaders in the overall functioning of CECs. The majority of CEC members across all studied CECs strongly trust and rely on their leaders to handle important issues on behalf of the community. Qualitative data helped us understand that CEC members are confident in the expertise and knowledge of their community leaders, who are, in some cases, also the initiators of the CEC. Several members pointed out that community leaders possess the adequate capability, skills and competence to operate and administer the energy community and push it forward. At the same time, they represent a real point of reference for all aspects of the community, from technical to legal, organisational, management, etc. In addition, it seems that community leaders are, in some cases, also members' main source of information about energy issues.

- **Community-based trust represents a unifying factor within the CEC.**

Community members are generally trusting of other members of their CEC. Quantitative data suggested that CEC members are more trusting of their community members in comparison to people in general, which is not surprising, given the social closeness of CEC members. According to the data, relatively strong trust in CEC members may be related to ways in which communities enable transparent sharing of information among CEC members. From the qualitative study, we understand that trust among CEC members is generated through perceptions of equal distribution of tasks among the members, equal division of roles and a fair structural organisation of their CEC.

- **CEC structure and governance affect the empowerment of its members.**

Quantitative data revealed that CEC members perceive their CEC membership as their contribution to the clean energy transition in society. As CECs are, in a way, growing organisms (social structures), many people perceive that their involvement in a CEC, if its formal rules allow it, could also influence the organisational structure and investment decisions of their CEC. This was especially evident in the qualitative study, where it was possible to detect a relationship between the degree to which the CEC's organisational structure allows empowerment and members' perceptions of their personal empowerment with regard to energy issues. Several CEC members explicitly stated that they had experienced a sort of personal transformation since joining the CEC – namely, from being rather passive energy consumers to becoming active agents that could, through collective engagement (this is already a sense of collective empowerment), influence the future of energy systems in their own country.

- **Public institutions should be role models and will have to change their governance to upscale CECs.**

Quantitative data revealed that CEC members think public institutions, such as national and local government and city, communal and regional authorities, have a strong role to play in the nation's energy efficiency and energy conservation policies. Although respondents agreed that it is also the

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

individual's responsibility to move to renewable energy sources, they predominantly think that public institutions should be role models in switching to clean energy sources. Several respondents identified that institutional barriers (bureaucratic problems, uncertainty regarding liability and legal affairs) somehow limit the expansion and better performance of their CEC. Many also perceived that they cannot influence or that they do not have a voice regarding energy policy at the national level. This is also an expression of individual disempowerment.

Respondents in the qualitative study were rather explicit in expressing the need to see more straightforward political support for CECs from (local) governments. They pointed to the lack of political support in addressing and easing various administrative and legal hurdles for establishing and running CECs. The quantitative study confirmed findings from the qualitative study about respondents' views regarding the 'responsibility roles' for the transition to a more sustainable society. Although members participating in our qualitative study had different views on how the responsibility for the energy transition should be distributed between individuals, communities and institutions, they were rather unified in the belief that a real step towards a comprehensive clean energy change demands strong collaboration between governments, businesses, NGOs and individuals in a synergetic way.

- **CEC members are crucial actors in diffusing CEC-related knowledge within and outside their CEC.**

According to the quantitative data, CEC members are very active in sharing their energy- and CEC-related knowledge with other members of their CEC and with potential new CEC members, therefore promoting the benefits of their CEC to the interested public. This was detected already in our qualitative study, where it was demonstrated that CECs may impersonate real 'knowledge banks' from which information is shared among community members in different ways. Information is formally shared through regular meetings, training courses, classes and webinars, special events, working/interest groups, internet portals and mailing lists, knowledge ambassadors and community leaders or informally shared through informal community discussions. CEC members share information, knowledge, experiences and best practices related to their CEC with other interested individuals and groups outside their CEC as well, for example, through online platforms and social media, through presentations in the media, through their informal social circles of friends and family, or more formally through official promoters, like CEC ambassadors.

Among the formal means of sharing information with other CEC members, CEC meetings represent a relatively frequent engagement activity for CEC members. Findings from the qualitative analysis revealed that regular meetings are found to be essential for CEC members because, according to respondents, they simplify the access to information and represent a good source from which to gain knowledge about projects (costs, technical features and future developments). Community meetings represent an important dimension of the knowledge-sharing process especially in place-based CECs.

- **CEC members feel proud to be members of their CEC.**

According to our quantitative data, CEC members, in general, feel proud of being members of their CEC. This result was found in the qualitative study, indicating that several informants saw themselves as trendsetters in addressing pressing matters related to climate change and were proud of it. They also expressed confidence in CECs having a strong impact on the future of cleaner energy systems in the EU.

The quantitative study revealed that although the CEC members are, in general, proud to be part of their CEC, being a CEC member represents only one of their identities.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

- **CEC members have become more environmentally conscious.**

According to the quantitative study, respondents were environmentally conscious, supportive of energy conservation and trying to save as much energy as possible. They also expressed that CECs are the future of energy provision and that energy efficiency is vital to their national economies. CEC members, in general, did not want to be dependent on using energy generated by fossil fuels. According to findings from the qualitative study, it seems that the environmental consciousness of many respondents increased significantly after they joined a CEC, while some respondents joined a CEC because their strong environmental concerns had urged them to take action regarding the energy transition. In addition, the qualitative study revealed that such environmental concerns reached beyond energy issues and spilled over to other areas of CEC members' daily lives after they joined their CEC, aiming to decrease their environmental footprint in general. In general, CEC members have a positive attitude towards new renewable features that have been discovered within their community, such as using solar thermal collectors or solar cells, or owning shares in a wind power plant. CEC members expressed the need to reduce their environmental footprint, and the quantitative data evinced their strong support for energy conservation in general. However, the qualitative study revealed that while a decrease in their energy-related CO_2 footprint is a quintessential environmental value for CEC members in our study, energy conservation in itself, as long as the energy is produced from clean sources, is not as important.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

7 CONCLUSION

The NEWCOMERS project encompasses very diverse CECs: they are of different sizes; some are place-based, while some are virtual; they are positioned in different geo-political regions of Europe; and they are established and managed within different national and regional energy policies. Those contextual differences affect CEC goals and interests, problem definitions and interpretations, solutions and employed clean energy technologies.

The findings of our study mirror a previous assumption made by Geels and Schot (2007) that transition pathways for CECs will not be directed by a breakthrough of one type of technology and social innovation but will instead emerge through an interplay of multiple technologies and innovations. They also support Lowitzsch et al.'s (2020) conclusion that geographic, technological, demographic and cultural diversities of clean energy systems in combination with a broad variety of governance patterns involving different organisational and contractual arrangements lead to complexities that prohibit 'one size fits all' solutions for upscaling CECs across the EU. Our research shows that members of different CECs share several motives for joining their respective CECs and perceive different kinds of value relating to their CEC membership, but cultural, geo-political and socio-economic circumstances also seem to produce many differences. For these reasons, it will probably never be possible to construct a universal CEC model that would be suitable for all and be implemented everywhere.

Yet the data that we gathered within the quantitative study (presented in this report) and the qualitative study (presented in D6.1; Kamin et al., 2020) underline some important findings (see section 6) for assessing the potential of CECs to contribute to the clean energy transition in the EU.

We can conclude that CECs are in an early developmental stage (from the diffusion of innovations point of view), making their members pioneers in paving the way towards a decarbonised energy future and setting the foundation for others to follow their practices. CEC members are confronted with many novelties, both technological and legal, which they often discover through learning by doing. In such a context, a good information system for sharing experiences and knowledge regarding the energy transition is of crucial importance. Many are experiencing hardships in manoeuvring through legal and structural factors in setting up, running and spreading their CECs. Therefore, CEC members wish for better leadership from public institutions, expecting them to be role models in adopting clean energy practices. CEC members are also critical of current energy-related legislation and governance, expecting them to change if CECs across the EU are to upscale. We cannot make generalisations to all CECs, but the data lead us to conclude that financial incentives (e.g. subsidies and/or tax reduction) might be important incentives for disseminating CECs, especially in some countries. In our research, this was of significant importance among respondents from Slovene and Italian CECs.

This deliverable, D6.2, with the complementary D6.1, is a rich source that can serve as an evidence base for EU policy recommendations (the forthcoming 'D7.3 – Policy recommendations based on co-creation process') which could improve public institutions' governance (at the EU and national levels) and facilitate the diffusion of CECs. As Gui and MacGill (2018) note, comprehensive clean energy research should assist policymakers in understanding the dynamics of different forms of CECs, how they may evolve in the future and what their effects will be on existing and future energy systems and markets. Such studies also provide grounds for creating an institutional environment that facilitates innovation and efficiency into a low-carbon future with more distributed and decentralised energy systems.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

8 REFERENCES

Albuquerque, C. P. Santos, C. C., & Almeida, H. D. S. N. S (2017). Assessing 'empowerment' as social development: goal and process. *European Journal of Social Work* 20(1): 88–100.

Bauwens, T., & Devine-Wright, P. (2018). Positive Energies? An Empirical Study of Community. Energy Participation and Attitudes to Renewable Energy. *Energy Policy* 118: 612–625.

Berry, D. (2020). Designing innovative clean energy programs: Transforming organizational strategies for a low-carbon transition. *Energy Research & Social Science* 67: 101545.

Blatter, J., & Haverland, M. (2012). *Designing case studies: Explanatory approaches in small-N research*. Palgrave Macmillan.

Bomberg, E., & McEwen, N. (2012). Mobilizing community energy. *Energy Policy* 51: 435–444.

Boudet, H. S. (2019). Public perceptions of and responses to new energy technologies. *Nature Energy* 4(6): 446–455.

Chang, C., & Dibb, S. (2012). Reviewing and conceptualising customer-perceived value. *The Marketing Review* 12(3): 253–274.

Chen, W. (2013). Perceived value in community supported agriculture (CSA): A preliminary conceptualization, measurement, and nomological validity. *British Food Journal* 115(10): 1428–1453.

Chodkowska-Miszczuk, J., Kola-Bezka, M., Lewandowska, A., & Martinát, S. (2021). Local Communities' Energy Literacy as a Way to Rural Resilience—An Insight from Inner Peripheries. *Energies* 14(9): 2575.

Cole, J. C., McDonald, J. B., Wen, X., & Kramer, R. A. (2018). Marketing energy efficiency: Perceived benefits and barriers to home energy efficiency. *Energy Efficiency* 11(7): 1811–1824.

ComRes & National Energy Foundation (2014). National Energy Foundation – Energy poll. (https://2sjjwunnql41ia7ki31qqub1-wpengine.netdna-ssl.com/wp-content/themes/comres/poll/National_Energy_Foundation_Energy_poll_Full_data_tables_8th_September_2014.pdf)

Cotton, D., Miller, W., Winter, J., Bailey, I., & Sterling, S. (2016). Knowledge, agency and collective action as barriers to energy-saving behaviour. *Local Environment* 21(7): 883–897.

DeWaters, J. E., & Powers, S. E. (2011). Energy literacy of secondary students in New York State (USA): A measure of knowledge, affect, and behavior. *Energy Policy* 39(3): 1699–1710.

Dietz, T., (2015). Environmental value. In: Brosch, T., Sander, D. (Eds.), *Oxford Handbook of Values*. Oxford University Press, Oxford, pp. 329–349.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Dóci, G., & Vasileiadou, E. (2014). “Let’s do it ourselves” Individual motivations for investing renewables at community level. *Renewable Sustainable Energy Reviews* 49: 1–25.

Frederiks, E. R., Stenner, K., & Hobman, E. V. (2015). Household energy use: applying behavioural economics to understand consumer decision-making and behaviour. *Renewable Sustainable Energy Reviews* 41: 1385–1394.

Funk, C. (1998). Practicing what we preach? The influence of a societal interest value on civic engagement. *Political Psychology* 19: 601–614.

Gadenne, D., Sharma, B., Kerr, D., & Smith, T. (2011) The influence of consumers’ environmental beliefs and attitudes on energy saving behaviours. *Energy Policy* 39: 7684–7694.

Geels, F. W. & Schot, J. (2007). Typology of sociotechnical transition pathways. *Research Policy* 36(3): 399–417

Gillespie, N. (2011). Measuring trust in organizational contexts: An overview of survey-based measures. In Lyon, F., Möllering, G., & Saunders, M. (Eds.), *Handbook of research methods on trust* (Gillespie_2011-1). Edward Elgar Publishing.

Gordon, R., Dibb, S., Magee, C., Cooper, P., & Waitt, G. (2018). Empirically testing the concept of value-in-behavior and its relevance for social marketing. *Journal of Business Research* 82: 56–67.

Gui, E. M., & MacGill, I. (2018). Typology of future clean energy communities: An exploratory structure, opportunities, and challenges. *Energy Research & Social Science* 35: 94–107.

Hanke, F., & Lowitzsch, J. (2020). Empowering Vulnerable Consumers to Join Renewable Energy Communities—Towards an Inclusive Design of the Clean Energy Package. *Energies* 13(7): 1615.

Heller, K., Price, R. H., Reinharz, S., Riger, S., & Wandersman, A. (1984). *Psychology and community change*: *Challenges of the future*. Homewood, IL: Dorsey.

Hoffman, S. M., & High-Pippert, A. (2010). From private lives to collective action: Recruitment and participation incentives for a community energy program. *Energy Policy* 38(12): 7567–7574.

Horstink, L., Wittmayer, J. M., & Ng, K. (2021). Pluralising the European energy landscape: Collective renewable energy prosumers and the EU's clean energy vision. *Energy Policy* 153: 112262.

Kalkbrenner, B. J., & Roosen, J. (2016). Citizens’ willingness to participate in local renewable energy projects: The role of community and trust in Germany. *Energy Research & Social Science* 13: 60–70.

Kamin, T., Golob, U., Medved, P. & Kogovšek, T. (2020). *Benefits for community members in terms of increased access to clean, secure and affordable energy.* Deliverable developed as part of the NEWCOMERS project under grant agreement 837752.

Kilbourne, W., & Pickett, G. (2008). How materialism affects environmental beliefs, concern, and environmentally responsible behaviour. *Journal of Business Research* 61(9): 885–893.

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837752.

Koirala, B. P, Araghi, Y., Kroesen, M., Ghorbani, A., Hakvoort, R. A., & Herder, P. M. (2018). Trust, awareness, and independence: Insights from a socio-psychological factor analysis of citizen knowledge and participation in community energy systems. *Energy Research & Social Science* 38: 33–40.

Koller, M., Floh, A., & Zauner, A. (2011). Further Insights into Perceived Value and Consumer Loyalty: A "Green" Perspective. *Psychology and Marketing* 28(12): 1154–1176.

Kotchen, M. J., & Reiling, S. D. (2000). Environmental attitudes, motivations, and contingent valuation of nonuse values: a case study involving endangered species. *Ecological Economics* 32(1): 93-107.

Loane, S. S., & Webster, C. M. (2014). Consumer-to-consumer value within social networks. *The Marketing Review* 14(4): 444–459.

Lowitzsch, J., Hoicka, C. E., & van Tulder, F.J. (2020). Renewable energy communities under the 2019 European Clean Energy Package – Governance model for the energy clusters of the future? *Renewable and Sustainable Energy Reviews* 122: 109489.

Piscicelli, L., Moreno, M., Cooper, T, & Fisher, T. (2016). The Individual-Practice Framework as a design tool to understand consumer behaviour. In Genus, A. (Eds.), *Sustainable Consumption - Design, Innovation and Practice.* Springer, pp. 35–50.

Poortinga, W., Whitmarsh, L., Böhm, G., Steg, L., & Fisher, S. (2016). *Public attitudes to climate change, energy security, and energy preferences.* European social survey. CLIMATE MODULE ESS8. (https://www.europeansocialsurvey.org/docs/round8/questionnaire/ESS8_climate_final_module_template.pdf)

Qiu, Y., Yin, S., & Wang, Y. D. (2016). Peer effects and voluntary green building certification. *Sustainability* 8(7): 632.

Radtke, J. (2014). A closer look inside collaborative action: Civic engagement and participation in community energy initiatives. *People, Place and Policy* 8(3): 235–248.

Reinsberger, K., & Posch, A. (2014). Bottom-up Initiatives for Photovoltaic: Incentives and Barriers. *Journal of Sustainable Development of Energy, Water and Environment Systems* 2(2): 108–117.

Roberts, J. (2020). Power to the people? Implications of the Clean Energy Package for the role of community ownership in Europe's energy transition. Special Issue: Assessing the EU 2030 Climate and Energy Policy Framework. *Review of European, Comparative & International Environmental Law* 29(2): 232–244.

Sardianou, E., & Genoudi, P. (2013). Which factors affect the willingness of consumers to adopt renewable energies? *Renewable Energy* 57: 1–4.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Sloot, D., Jans, L., & Steg, L. (2019). In it for the money, the environment, or the community? Motives for being involved in community energy initiatives. *Global Environmental Change* 57: 101936.

Smith, A., Hargreaves, T., Hielscher, S., Martiskainen, M., & Seyfang, G. (2016). Making the most of community energies: three perspectives on grassroots innovation. *Environment and Planning A: Economy and Space* 48(2): 407–432.

Soeiro, S., & Dias, M. F. (2020a). Community renewable energy: Benefits and drivers. *Energy Reports* 6: 134–140.

Soeiro, S., & Dias, M. F. (2020b). Renewable energy community and the European energy market: main motivations. *Heliyon* 6(7): e04511.

Türe, M. (2014). Value-in-disposition: Exploring how consumers derive value from disposition of possessions. *Marketing Theory* 14(1): 53–72.

van der Grijp, N.M. et al. (2019). *Theoretical framework focusing on learning in polycentric settings*. Deliverable D2.1 developed as part of the NEWCOMERS project, funded under EU H2020 grant agreement 837752, December 2019.

van der Schoor, T., & Scholtens, B. (2019). The power of friends and neighbors: a review of community energy research. *Current opinion in environmental sustainability* 39: 71–80.

Vugt, V., & Cremer, D. (1999). Leadership in social dilemmas: the effects of group identification on collective actions to provide public goods. *Journal of Personality and Social Psychology* 76(4): 587–599.

Walker, G., Hunter, S., & Devine-Wright, P. (2007). Harnessing community energies:explaining and evaluating community-based localism in renewable energy policy in the UK. *Global Environmental Politics* 7(2): 64–82.

Wiersma, B., & Devine-Wright, P. (2014). Decentralising energy: comparing the drivers and influencers of projects led by public, private, community and third sector actors. *Contemporary Social Science* 9(4): 456–470.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

9 APPENDICES

Appendices 1 - Survey of Clean Energy Community Members[4]

Welcome to the NEWCOMERS Energy Local members survey

Your participation will provide valuable information about your views on the energy community, experience with participation in it and opinions about the role of energy communities in the clean energy transition. This will help the NEWCOMERS project team to develop practical recommendations for policymakers to support new clean energy communities and unlock their full potential .

We kindly ask for only one member of your household to complete this questionnaire.

The questionnaire takes about 20 minutes to complete. Your participation is voluntary and your responses will be de-identified and anonymised. This means that we will not be able to link any personal information (such as your name) with your answers. Your participation is voluntary and your responses will be de-identified and anonymised. This means that we will not be able to link any personal information (such as your name or e-mail) with your answers. The data collection is performed by University of Ljubljana as a project partner, who have received ethical clearance for this research from their institution.

If you have any questions or comments about the survey, please feel free to contact one of our team.

We really appreciate your help.

Please confirm your agreement with participation in this study and click the "Next page" button to begin the survey.

☐ I consent to participation in this study

The survey is conducted as part of the Newcomers project (New clean energy communities in a changing European energy system). This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

We will begin with some questions about your participation in the energy community and energy technology that your household uses.

Q1 - When did your household join the clean energy community _____?

month: _____

year: _____

Q2 - Which of the following does your household use?

Please select all that apply.& nbsp;

☐ Own solar panels to generate electricity
☐ Solar panels shared by the community to generate electricity
☐ Wind turbines shared by the community to generate electricity
☐ Local hydroelectric power
☐ Smart power meter
☐ Heat pump

[4] The survey questionnaire in minor aspects differed among participating CECs (e.g., questions about technologies that are not used in all countries such as smart meters or wind turbines).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

- [ ] Battery for energy storage
- [ ] Electric vehicle
- [ ] Other electricity generation or management technology (please, specify):
- [ ] None of the above

Q3 - Have you ever done any of the following in your energy community?

	Yes	No
Invested money in a project run by your energy community	◌	◌
Attended a community meeting	◌	◌
Shared your knowledge or experience related to energy with other members of the energy community	◌	◌
Promoted your energy community to potential new energy community members	◌	◌
Participated in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	◌	◌
Participated in steering your energy community (like decision-making about investments or participation in community management board)	◌	◌

Q4 - And if you had such opportunity in the future, how likely would you be willing to do any of the following in your community?

	Definitely not willing	Probably not willing	Maybe yes, maybe not	Probably willing	Definitely willing
Invest money in a project run by your energy community	◌	◌	◌	◌	◌
Attend community meetings	◌	◌	◌	◌	◌
Share your knowledge or experience related to energy with other members of the energy community	◌	◌	◌	◌	◌
Promote your energy community to potential new energy	◌	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

community members					
Participate in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	○	○	○	○	○
Participate in steering your energy community (like decision-making about investment or participation in community management board)	○	○	○	○	○

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Q5 - How much do you agree or disagree with the following statements about your participation in the energy community?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I identify myself with our energy community	◌	◌	◌	◌	◌
I feel committed to our energy community	◌	◌	◌	◌	◌
I am proud to be a member of our energy community	◌	◌	◌	◌	◌
Being a member of our energy community is a central part of how I see myself	◌	◌	◌	◌	◌

Now we would like to ask some questions about your views on membership in the community, its organisation and relations among community members.

Q6 - How much do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I cannot say
I can rely on the leaders of our energy community to handle important issues on behalf of the community	◌	◌	◌	◌	◌	◌
I am confident that potential problems with the energy-related technology used in our energy community will be resolved efficiently	◌	◌	◌	◌	◌	◌
Most members	◌	◌	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

respect rules set out by our energy community						
Some members are part of our energy community for their personal benefits only	○	○	○	○	○	○
Some members are contributing much less to our energy community than I do	○	○	○	○	○	○
Our energy community is transparently sharing information among its members	○	○	○	○	○	○

Q7 - How much do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Formal community rules enable members to influence the organisational structure of the energy community	○	○	○	○	○
I feel that our local government is supportive of the activities of our energy community	○	○	○	○	○
I can influence financial decisions or investments in	○	○	○	○	○

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

our energy community					
As a member of the energy community I feel I could influence the energy policy in my country	○	○	○	○	○
Since joining the energy community, I feel more connected with the people in my local community	○	○	○	○	○
Since joining the energy community, I feel I can actually influence the transition to clean energy in our society	○	○	○	○	○

Q8 - Below are some more statements regarding membership in the community and its role in society. How much do you agree or disagree with them?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
As a member of our energy community I feel like a trendsetter of a sustainable future	○	○	○	○	○
I feel proud being a member of our energy community	○	○	○	○	○
As a community member I get electricity for a better price	○	○	○	○	○
As a community member I better understand the importance of	○	○	○	○	○

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

clean energy for the environment					
As a community member I have received a lot of useful advice regarding energy consumption in my home	○	○	○	○	○
Participation in our energy community helps me fulfil responsibilities for future generations	○	○	○	○	○
Participation in our energy community allows me to express my environmental concern	○	○	○	○	○
Participation in our energy community strengthens my social solidarity	○	○	○	○	○
Our energy community improves the image of the municipality	○	○	○	○	○
Participation in our energy community gives me a better chance to interact with like-minded people.	○	○	○	○	○
People I care about would approve of my participation in our energy community	○	○	○	○	○

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

In the next part we would like to learn about your reasons and motives to participate in the energy community.

Q9 - How important are the following reasons for you to be part of your energy community?

	Not at all important	Slightly important	Quite important	Very important
To reduce electricity costs in the household	◌	◌	◌	◌
To invest and earn money	◌	◌	◌	◌
To reduce fossil fuels consumption	◌	◌	◌	◌
To do things together with other community members	◌	◌	◌	◌
To be part of a movement addressing climate change	◌	◌	◌	◌
To engage with the new technologies	◌	◌	◌	◌
To be independent from large power companies	◌	◌	◌	◌
To contribute to my energy security	◌	◌	◌	◌

Q10 - Were you personally involved in making the decision to join the energy community or was this decision made by others?

◌ I was personally involved in deciding to join the energy community
◌ This decision was made entirely by others

IF (4) Q10 = [1]

Q11 - How important were the following factors in your decision to join the energy community?

	Not at all important	Slightly important	Quite important	Very important
Opportunity to receive an energy subsidy	◌	◌	◌	◌
Opportunity for energy tax deduction	◌	◌	◌	◌
Encouragement from family or friends	◌	◌	◌	◌
Special offer from a company	◌	◌	◌	◌
Positive experience of other members of this or other energy communities	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Direct invitation to join the energy community	◌	◌	◌	◌

IF (4) Q10 = [1]

Q12 - Did any other important reasons contribute to your decision to join the energy community?

Please describe them in the box below.

_____

Q13 - To what extent have the following factors presented a challenge to your participation in the energy community?

	Not a challenge at all	A small challenge	A moderate challenge	A large challenge	Factor not relevant
Need to learn how to use a new technology	◌	◌	◌	◌	◌
Problems installing equipment	◌	◌	◌	◌	◌
Bureaucratic problems	◌	◌	◌	◌	◌
Uncertainty regarding liability and legal affairs	◌	◌	◌	◌	◌
Lack of support from other household members	◌	◌	◌	◌	◌
Lack of cooperation of other community members	◌	◌	◌	◌	◌
Lack of information about the project	◌	◌	◌	◌	◌
Expenses related to the project	◌	◌	◌	◌	◌
Doubts over financial benefits	◌	◌	◌	◌	◌
Doubts about the performance of technology (solar panels or wind turbines)	◌	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Q14 - How concerned are you about the following factors related to the technology for electricity production in your household or energy community?

	Not at all concerned	Slightly concerned	Quite concerned	Very concerned
Costs of maintaining the technology	◌	◌	◌	◌
Toxicity of materials in solar panels	◌	◌	◌	◌
Flammability of materials in solar panels	◌	◌	◌	◌
Impact of materials used for solar energy production technology on ecosystem	◌	◌	◌	◌
Impact of materials used for wind energy production technology on ecosystem	◌	◌	◌	◌
Visual impact of solar panels	◌	◌	◌	◌
Visual impact of wind turbines	◌	◌	◌	◌
Noise caused by wind turbines	◌	◌	◌	◌
Problems with recycling solar panel materials	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

(6) Q2 = [Q2e]

Q15 - You have indicated that your household uses a smart power meter. To what extent do you agree or disagree with the following statements about smart meters?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Does not apply to my smart meter
Feedback provided by the smart meter helps me save energy	◌	◌	◌	◌	◌	◌
Smart meter enables better management of energy usage	◌	◌	◌	◌	◌	◌
The use of a smart meter contributes to reduced greenhouse gas emissions	◌	◌	◌	◌	◌	◌
I am concerned regarding the privacy of data collected by the smart meter	◌	◌	◌	◌	◌	◌
I am concerned about potential health effects of a wireless network used by the smart meter	◌	◌	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

This section of the survey is about your views on energy related issues in society.

Q16 - How much do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Many of my peers use electricity generated from renewable energy sources	○	○	○	○	○
It is our responsibility to move to renewable energy sources	○	○	○	○	○
Public institutions should be a role model in switching to clean energy sources	○	○	○	○	○
Clean energy communities are the future of energy provision	○	○	○	○	○
Clean energy communities make energy more affordable for everyone	○	○	○	○	○
Not everyone can afford to join a clean energy community	○	○	○	○	○

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Q17 - And now some statements about energy efficiency. How much do you agree or disagree with the following?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Energy efficiency and conservation just isn't that important to me	◌	◌	◌	◌	◌
When home, I take actions to conserve energy	◌	◌	◌	◌	◌
There is very little I can do personally to conserve energy in my home	◌	◌	◌	◌	◌
I am not willing to conserve energy at home if that comes at any cost to my comfort	◌	◌	◌	◌	◌
Energy efficiency is vital to our national economy	◌	◌	◌	◌	◌
The government has a strong role to play in our nation's energy efficiency and conservation policies	◌	◌	◌	◌	◌
Clean energy is more important than reliable and affordable energy	◌	◌	◌	◌	◌
Becoming an energy independent country is vital to our economic success and national security	◌	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Q18 - How worried are you about the following issues related to energy in your country?

	Not at all worried	Not very worried	Somewhat worried	Very worried	Extremely worried
That there may be power cuts in your country	◌	◌	◌	◌	◌
That energy might become too expensive for many people in your country	◌	◌	◌	◌	◌
Your country being too dependent on energy imports from other countries	◌	◌	◌	◌	◌
Your country being too dependent on using energy generated by fossil fuels such as oil, gas and coal?	◌	◌	◌	◌	◌
your country our country being too dependent on using nuclear energy?	◌	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

The next three questions are about sources of information on energy-related topics**.**

Q19 - In general, how informed do you feel about energy issues?
- ◌ Very well informed
- ◌ Fairly well informed
- ◌ Not very well informed
- ◌ Not at all well informed

Q20 - Which of the following sources do you use to inform yourself about energy issues?
Select all that apply.
- ☐ I don't use any sources of information about energy issues
- ☐ News or documentary programmes on TV or radio
- ☐ Searching on the internet
- ☐ Energy companies or energy providers
- ☐ Newspapers
- ☐ Magazines
- ☐ Information from national government or my local council
- ☐ Charities and NGOs
- ☐ Energy community newsletters
- ☐ Workshop, webinars or other events organized by our energy community
- ☐ My job
- ☐ Other:

Q21 - If you had a question about energy (e.g., trends, policy, efficiency, conservation, etc.), where would you be most likely to turn to find information?
Select all that apply.
- ☐ A high school teacher
- ☐ Textbooks
- ☐ Friends or classmates
- ☐ Family
- ☐ Search engines (e.g. Google search)
- ☐ Scholarly research database
- ☐ Online or print encyclopaedias (e.g. Wikipedia)
- ☐ Social media feed; non-professional online profile pages (e.g. friends, family, etc.)
- ☐ Social media; professional online profile pages (e.g. industry, non-profit, or subject expert)
- ☐ Blogs or forums
- ☐ Government websites (e.g. Department of Energy)
- ☐ Industry websites (e.g., utility, gas, renewables, etc.)
- ☐ Non-profit agencies
- ☐ My energy community
- ☐ Consumer associations/organizations
- ☐ Other, please specify:

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

We are approaching the end of the survey. The next few questions are about yourself.

Q22 - First we have a question about donations. By donations we mean the charitable giving of money for social, ecclesiastical, cultural, or similar non-profit purposes without receiving any direct compensation in return. These can be larger amounts, but also smaller ones, which one puts e.g. into a collection box. We also include the collections in church.

Did you donate money last year, i.e. in 2020 (not counting membership fees)?
◯ Yes
◯ No

IF (10) Q22 = [1]
Q23 - What was the total amount you donated last year? If you do not know the exact amount, please give an estimate.

_____ GBP

Q24 - There are donations that are not financial, for example blood donations. Have you donated blood in the past 10 years?
◯ Yes
◯ No

Q25 - What is your opinion on the following three statements?

	Strongly disagree	Disagree	Agree	Strongly agree
In general, you can trust people	◯	◯	◯	◯
Nowadays you cannot rely on anyone	◯	◯	◯	◯
When dealing with strangers, it is better to be careful before you trust them	◯	◯	◯	◯

Q26 - Do you think most people…
(Please choose one statement)
◯ Would take advantage of you if they had the opportunity
◯ Or would try to be fair to you?

Q27 - Would you say that most of the time people…
(Please choose one statement)
◯ Try to be helpful
◯ Or only pursue their own interests?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Q28 - What is your opinion on the following statements?

	1Do not agree at all	2	3	4	5	6	7	8	9Do fully agree
I'd rather depend on myself than others	◌	◌	◌	◌	◌	◌	◌	◌	◌
I rely on myself most of the time, and rarely rely on others	◌	◌	◌	◌	◌	◌	◌	◌	◌
I often do "my own thing"	◌	◌	◌	◌	◌	◌	◌	◌	◌
I feel good when I cooperate with others	◌	◌	◌	◌	◌	◌	◌	◌	◌
If a coworker gets a prize, I would feel proud	◌	◌	◌	◌	◌	◌	◌	◌	◌
The well-being of my coworkers is important to me	◌	◌	◌	◌	◌	◌	◌	◌	◌
To me, pleasure is spending time with others	◌	◌	◌	◌	◌	◌	◌	◌	◌
My personal identity, independent of others, is very important to me	◌	◌	◌	◌	◌	◌	◌	◌	◌

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Lastly, we would like to ask you some questions about you and your household.

B1 - Does your household own or rent the dwelling you are currently living in?
◯ Me or another household member own the dwelling
◯ I/We rent the dwelling
◯ The dwelling is rent-free but not owned by me or another household member
◯ Other, please specify:

B2 - In what kind of building do you live?
◯ Detached home
◯ Semi-detached home
◯ Apartment building

B3 - Which of the following best describes the area where you live?
◯ A city
◯ A town or suburb
◯ Rural area

B4a - How many people live in your household, including yourself and children? _____

IF (12) B4a > '1'
B4b - How many children under the age of 18 live in your household? _____
☐ None

B4c - How many children do you have, regardless of whether they live in your household or not (i.e. include also children who have for example moved out or live with the other parent)? _____
☐ I do not have any children

B5 - What is your gender?
◯ Male
◯ Female
◯ Other

B6 - What year were you born in? _____

B7 - What is the highest level of education that you have attained?
◯ No formal education (ISCED 0)
◯ Primary or lower secondary education (ISCED 1-2)
◯ Upper secondary or post-secondary non-tertiary education (ISCED 3-4)
◯ Short-cycle tertiary education (ISCED 5)
◯ Bachelor's or equivalent level (ISCED 6)
◯ Master's or equivalent level (ISCED 7)
◯ Doctoral or equivalent level (ISCED 8)

B8 - Which of the following best describes your employment situation?
◯ Employed or self-employed
◯ Unemployed
◯ Retired
◯ Student or pupil
◯ Housework and caretaking responsibilities
◯ Other

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

IF (13) B8 = [1]
B9 - Are you...
◌ Working full-time
◌ Working part-time, with at least 20 hours per week
◌ Working part-time or hourly with less than 20 hours per week
◌ Other, please specify:

IF (14) B8 = [1]
B10 - Is your current job related to the field of energy production or supply?
◌ Yes
◌ No

B11 - Finally, could you please indicate what range matches your household's total net monthly income? If you don't know this exactly, please give your best estimate.
◌ Less than £450
◌ £450 to £899
◌ £900 to £1,349
◌ £1,350 to £1,799
◌ £1,800 to £2,249
◌ £2,250 to £2,699
◌ £2,700 to £3,149
◌ £3,150 to £3,599
◌ £3,600 to £4,049
◌ £4,050 to £4,499
◌ £4,500 to £4,949
◌ £4,950 to £5,399
◌ £5,400 to £5,849
◌ £5,850 to £6,299
◌ £6,300 or more
◌ Prefer not to say

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Appendices 2 - SURVEY RESULTS

1. ZUIDERLICHT, THE NETHERLANDS

Table 1.1: Time of joining the CEC (month)

Q1a When did your household join Y (month:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	1.4	1.7	1.7
	1	10	14.5	16.9	18.6
	2	4	5.8	6.8	25.4
	3	6	8.7	10.2	35.6
	5	5	7.2	8.5	44.1
	6	6	8.7	10.2	54.2
	7	4	5.8	6.8	61.0
	8	4	5.8	6.8	67.8
	9	4	5.8	6.8	74.6
	10	5	7.2	8.5	83.1
	11	3	4.3	5.1	88.1
	12	7	10.1	11.9	100.0
	Total	59	85.5	100.0	
Missing	Unanswered question	10	14.5		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.2: Time of joining the CEC (year)

Q1b When did your household join Y (year:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2005	1	1.4	1.5	1.5
	2012	1	1.4	1.5	3.1
	2013	1	1.4	1.5	4.6
	2014	4	5.8	6.2	10.8
	2015	13	18.8	20.0	30.8
	2016	3	4.3	4.6	35.4
	2017	8	11.6	12.3	47.7
	2018	15	21.7	23.1	70.8
	2019	11	15.9	16.9	87.7
	2020	8	11.6	12.3	100.0
	Total	65	94.2	100.0	
Missing	Unanswered question	3	4.3		
	System	1	1.4		
	Total	4	5.8		
Total		69	100.0		

Table 1.3: Which technologies the CEC uses – own solar panels

Q2a Own solar panels to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	28	40.6	53.8	53.8
	selected	24	34.8	46.2	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

Table 1.4: Which technologies the CEC uses – solar panels shared by the CEC

Q2b Solar panels shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	25	36.2	48.1	48.1
	selected	27	39.1	51.9	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.5: Which technologies the CEC uses – wind turbines shared by the CEC

Q2c Wind turbines shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	49	71.0	94.2	94.2
	selected	3	4.3	5.8	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

Table 1.6: Which technologies the CEC uses – local hydroelectric power

Q2d Local hydroelectric power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	52	75.4	100.0	100.0
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

Table 1.7: Which technologies the CEC uses – smart power meter

Q2e Smart power meter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	21	30.4	40.4	40.4
	selected	31	44.9	59.6	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

Table 1.8: Which technologies the CEC uses – heat pump

Q2f Heat pump

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	49	71.0	94.2	94.2
	selected	3	4.3	5.8	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

Table 1.9: Which technologies the CEC uses – battery for energy storage

Q2g Battery for energy storage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	51	73.9	98.1	98.1
	selected	1	1.4	1.9	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

Table 1.10: Which technologies the CEC uses – electric vehicle

Q2h Electric vehicle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	51	73.9	98.1	98.1
	selected	1	1.4	1.9	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.11: Which technologies the CEC uses – other electricity generation or management technology

Q2i Other electricity generation or management technology (please, specify):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	42	60.9	80.8	80.8
	selected	10	14.5	19.2	100.0
	Total	52	75.4	100.0	
Missing	None of the above	13	18.8		
	Drop-out	3	4.3		
	Unanswered question	1	1.4		
	Total	17	24.6		
Total		69	100.0		

Table 1.12: Have you ever done any of the following – invested money in a CEC project

Q3a Invested money in a project run by your energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	56	81.2	88.9	88.9
	No	7	10.1	11.1	100.0
	Total	63	91.3	100.0	
Missing	Drop-out	6	8.7		
Total		69	100.0		

Table 1.13: Have you ever done any of the following – attended a CEC meeting

Q3b Attended a community meeting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	43	62.3	68.3	68.3
	No	20	29.0	31.7	100.0
	Total	63	91.3	100.0	
Missing	Drop-out	6	8.7		
Total		69	100.0		

Table 1.14: Have you ever done any of the following – shared your knowledge/experience with CEC members

Q3c Shared your knowledge or experience related to energy with other members of the energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	36.2	40.3	40.3
	No	37	53.6	59.7	100.0
	Total	62	89.9	100.0	
Missing	Drop-out	6	8.7		
	Unanswered question	1	1.4		
	Total	7	10.1		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.15: Have you ever done any of the following – promoted your CEC to other potential new members

Q3d Promoted your energy community to potential new energy community members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	46	66.7	73.0	73.0
	No	17	24.6	27.0	100.0
	Total	63	91.3	100.0	
Missing	Drop-out	6	8.7		
Total		69	100.0		

Table 1.16: Have you ever done any of the following – participated your CEC with minor organizational responsibilities

Q3e Participated in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	27.5	30.2	30.2
	No	44	63.8	69.8	100.0
	Total	63	91.3	100.0	
Missing	Drop-out	6	8.7		
Total		69	100.0		

Table 1.17: Have you ever done any of the following – participated steering your CEC

Q3f Participated in steering your energy community (like decision-making about investments or participation in community management board)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	8.7	9.8	9.8
	No	55	79.7	90.2	100.0
	Total	61	88.4	100.0	
Missing	Drop-out	6	8.7		
	Unanswered question	2	2.9		
	Total	8	11.6		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.18: Personal involvement in deciding to join or not

Q10 Were you personally involved in making the decision to join the energy community or was this decision made by others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I was personally involved in deciding to join the energy community	57	82.6	96.6	96.6
	This decision was made entirely by others	2	2.9	3.4	100.0
	Total	59	85.5	100.0	
Missing	Drop-out	10	14.5		
Total		69	100.0		

Table 1.19: Sources of information about energy issues – TV or radio

Q20a: News or documentary programmes on TV or radio

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	14	20.3	25.0	25.0
	selected	42	60.9	75.0	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.20: Sources of information about energy issues – internet

Q20b Searching on the internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	18	26.1	32.1	32.1
	selected	38	55.1	67.9	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.21: Sources of information about energy issues – energy companies or providers

Q20c Energy companies or energy providers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	33	47.8	58.9	58.9
	selected	23	33.3	41.1	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

	Drop-out	12	17.4
	Total	13	18.8
Total		69	100.0

Table 1.22: Sources of information about energy issues – newspapers

Q20d Newspapers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	12	17.4	21.4	21.4
	selected	44	63.8	78.6	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.23: Sources of information about energy issues – magazines

Q20e Magazines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	36	52.2	64.3	64.3
	selected	20	29.0	35.7	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.24: Sources of information about energy issues – national government or local council

Q20f Information from national government or my local council

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	27	39.1	48.2	48.2
	selected	29	42.0	51.8	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.25: Sources of information about energy issues – charities and NGOs

Q20g Charities and NGOs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	19	27.5	33.9	33.9
	selected	37	53.6	66.1	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.26: Sources of information about energy issues – CEC newsletters

Q20h Energy community newsletters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	19	27.5	33.9	33.9
	selected	37	53.6	66.1	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.27: Sources of information about energy issues – events organized by CECs

Q20i Workshop, webinars or other events organized by our energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	43	62.3	76.8	76.8
	selected	13	18.8	23.2	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.28: Sources of information about energy issues – my job

Q20j My job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	45	65.2	80.4	80.4
	selected	11	15.9	19.6	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Total	69	100.0	

Table 1.29: Sources of information about energy issues – other

Q20k Other:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	53	76.8	94.6	94.6
	selected	3	4.3	5.4	100.0
	Total	56	81.2	100.0	
Missing	None of the above	1	1.4		
	Drop-out	12	17.4		
	Total	13	18.8		
Total		69	100.0		

Table 1.30: Potential sources of information about energy – a high school teacher

Q21a A high school teacher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	57	82.6	100.0	100.0
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.31: Potential sources of information about energy – textbooks

Q21b Textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	55	79.7	96.5	96.5
	selected	2	2.9	3.5	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.32: Potential sources of information about energy – friends or classmates

Q21c Friends or classmates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	47	68.1	82.5	82.5
	selected	10	14.5	17.5	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.33: Potential sources of information about energy – family

Q21d Family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	46	66.7	80.7	80.7
	selected	11	15.9	19.3	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.34: Potential sources of information about energy – search engines

Q21e Search engines (e.g. Google search)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	15	21.7	26.3	26.3
	selected	42	60.9	73.7	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.35: Potential sources of information about energy – scholarly research database

Q21f Scholarly research database

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	46	66.7	80.7	80.7
	selected	11	15.9	19.3	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.36: Potential sources of information about energy – encyclopaedias

Q21g Online or print encyclopaedias (e.g. Wikipedia)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	45	65.2	78.9	78.9
	selected	12	17.4	21.1	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.37: Potential sources of information about energy – social media, non-professional
Q21h Social media feed; non-professional online profile pages (e.g. friends, family, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	53	76.8	93.0	93.0
	selected	4	5.8	7.0	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.38: Potential sources of information about energy – social media, professional
Q21i Social media; professional online profile pages (e.g. industry, non-profit, or subject expert)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	47	68.1	82.5	82.5
	selected	10	14.5	17.5	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.39: Potential sources of information about energy – blogs or forums
Q21j Blogs or forums

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	47	68.1	82.5	82.5
	selected	10	14.5	17.5	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.40: Potential sources of information about energy – government websites
Q21k Government websites (e.g. Department of Energy)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	24	34.8	42.1	42.1
	selected	33	47.8	57.9	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.41: Potential sources of information about energy – industry websites
Q21l Industry websites (e.g., utility, gas, renewables, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	42	60.9	73.7	73.7
	selected	15	21.7	26.3	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.42: Potential sources of information about energy – non-profit agencies
Q21m Non-profit agencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	33	47.8	57.9	57.9
	selected	24	34.8	42.1	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.43: Potential sources of information about energy – CEC
Q21n My energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	28	40.6	49.1	49.1
	selected	29	42.0	50.9	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.44: Potential sources of information about energy – consumer organizations
Q21o Consumer associations/organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	35	50.7	61.4	61.4
	selected	22	31.9	38.6	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.45: Potential sources of information about energy – other

Q21p Other, please specify:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	52	75.4	91.2	91.2
	selected	5	7.2	8.8	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.46: Donations

Q22 First we have a question about donations. By donations we mean the charitable giving of money for social, ecclesiastical, cultural, or similar non-profit purposes without receiving any direct compensation in return. These can be larger amounts, but also sm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	53	76.8	93.0	93.0
	No	4	5.8	7.0	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.47: Donations - amount

Q23 What was the total amount you (EUR)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	400	1	10.0	33.3	33.3
	500	1	10.0	33.3	66.7
	1400	1	10.0	33.3	100.0
	Total	3	30.0	100.0	
Missing	Drop-out	2	20.0		
	Skipped question (IF logic)	5	50.0		
	Total	7	70.0		
Total		10	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.48: Donations – non-financial

Q24 There are donations that are not financial, for example blood donations. Have you donated blood in the past 10 years?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	20.3	24.6	24.6
	No	43	62.3	75.4	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.49: Trust – in general

Q26 Do you think most people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Would take advantage of you if they had the opportunity	3	4.3	5.3	5.3
	Or would try to be fair to you?	54	78.3	94.7	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.50: Helpfulness

Q27 Would you say that most of the time people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Try to be helpful	51	73.9	89.5	89.5
	Or only pursue their own interests?	6	8.7	10.5	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Table 1.51: Active community involvement

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q4a Invest money in a project run by your energy community	63	1	5	4.03	.897
Q4b Attend community meetings	63	1	5	3.94	1.061
Q4c Share your knowledge or experience related to energy with other	63	1	5	3.73	1.194

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

members of the energy community					
Q4d Promote your energy community to potential new energy community members	63	1	5	4.35	.864
Q4e Participate in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	63	1	5	2.84	1.285
Q4f Participate in steering your energy community (like decision-making about investment or participation in community management board)	63	1	5	2.35	1.310
Valid N (listwise)	63				

Measured on a 5-point scale: 1 - definitely not willing 2 - probably not willing 3 - maybe yes, maybe not 4 - probably willing, 5 – definitely willing.

Table 1.52: Identification with the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q5a I identify myself with our energy community	63	1	5	3.38	1.084
Q5b I feel committed to our energy community	63	1	5	3.67	1.063
Q5c I am proud to be a member of our energy community	63	1	5	4.03	.999
Q5d Being a member of our energy community is a central part of how I see myself	63	1	5	3.02	1.070
Valid N (listwise)	63				

Measured on the 5-point (dis)agreement scale: 1— strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.53: Trust within the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q6a I can rely on the leaders of our energy community to handle important issues on behalf of the community	59	3	5	4.54	.536
Q6b I am confident that potential problems with the energy-related technology used in our energy community will be resolved efficiently	58	3	5	4.41	.563
Q6c Most members respect rules set out by our energy community	41	3	5	4.20	.749
Q6d Some members are part of our energy community for their personal benefits only	37	1	5	2.57	.959
Q6e Some members are contributing much less to our energy community than I do	45	1	5	2.47	1.100
Q6f How much do you agree or disag: Our energy community is transparently sharing information among its members	57	2	5	4.30	.680
Valid N (listwise)	31				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.54: Empowerment

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q7a Formal community rules enable members to influence the organisational structure of the energy community	59	3	5	4.08	.596
Q7b I feel that our local government is supportive of the activities of our energy community	59	2	5	3.92	.794
Q7c I can influence financial decisions or investments in our energy community	59	2	5	3.69	.623
Q7d As a member of the energy community I feel I could influence the energy policy in my country	59	1	5	3.24	.935
Q7e Since joining the energy community, I feel more connected with the people in my local community	59	1	5	2.78	1.018
Q7f Since joining the energy community, I feel I can actually influence the transition to clean energy in our society	59	2	5	3.64	.737
Valid N (listwise)	59				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.55: Values

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q8a As a member of our energy community I feel like a trendsetter of a sustainable future	59	1	5	3.19	1.025
Q8b I feel proud being a member of our energy community	59	1	5	3.69	.969
Q8c As a community member I get electricity for a better price	59	1	5	2.81	.861
Q8d As a community member I better understand the importance of clean energy for the environment	59	2	5	3.66	.921
Q8e As a community member I have received a lot of useful advice regarding energy consumption in my home	59	1	5	2.86	.918
Q8f Participation in our energy community helps me fulfil responsibilities for future generations	59	1	5	4.00	.695
Q8g Participation in our energy community allows me to express my environmental concern	59	1	5	3.88	.790
Q8h Participation in our energy community strengthens my social solidarity	59	1	5	3.54	.897
Q8i Our energy community improves the image of the municipality	59	2	5	3.75	.779
Q8j Participation in our energy community gives me a better chance to interact with like-minded people.	59	1	5	3.59	.873
Q8k Below are some more statements: People I care about would approve of my participation in our energy community	59	1	5	3.85	.906

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Valid N (listwise)	59

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 1.56: Motives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q9a To reduce electricity costs in the household	59	1	4	1.71	.911
Q9b To invest and earn money	58	1	4	1.71	.749
Q9c To reduce fossil fuels consumption	59	1	4	3.75	.575
Q9d To do things together with other community members	59	1	4	2.02	.956
Q9e To be part of a movement addressing climate change	59	1	4	3.20	.805
Q9f To engage with the new technologies	59	1	4	2.56	.896
Q9g To be independent from large power companies	59	1	4	2.80	1.030
Q9h To contribute to my energy security	59	1	4	2.07	1.032
Valid N (listwise)	58				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.57: Incentives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q11a Opportunity to receive an energy subsidy	57	1	4	1.16	.492
Q11b Opportunity for energy tax deduction	57	1	3	1.12	.426
Q11c Encouragement from family or friends	57	1	4	1.44	.824
Q11d Special offer from a company	56	1	3	1.16	.417
Q11e Positive experience of other members of this or other energy communities	57	1	4	1.70	.944
Q11f Direct invitation to join the energy community	57	1	4	1.79	1.031
Valid N (listwise)	56				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

Table 1.58: Challenges

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q13a Need to learn how to use a new technology	38	1	4	2.03	1.102
Q13b Problems installing equipment	26	1	4	1.46	.811
Q13c Bureaucratic problems	33	1	4	1.64	1.055
Q13d Uncertainty regarding liability and legal affairs	36	1	4	1.56	.877
Q13e Lack of support from other household members	35	1	3	1.20	.473
Q13f Lack of cooperation of other community members	34	1	3	1.18	.459
Q13g Lack of information about the project	39	1	4	1.33	.701
Q13h Expenses related to the project	34	1	3	1.26	.567
Q13i Doubts over financial benefits	42	1	4	1.43	.737
Q13j Doubts about the performance of technology	42	1	4	1.33	.687

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

(solar panels or wind turbines)	
Valid N (listwise)	24

Measured on the 4-point scale: 1 – not a challenge at all, 2 - a small challenge, 3 - a moderate challenge, 4 – a large challenge

Table 1.59: Concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q14a Costs of maintaining the technology	58	1	4	1.36	.613
Q14b Toxicity of materials in solar panels	39	1	3	1.56	.754
Q14c Flammability of materials in solar panels	39	1	4	1.62	.815
Q14d Impact of materials used for solar energy production technology on ecosystem	39	1	4	1.92	.774
Q14e Impact of materials used for wind energy production technology on ecosystem	3	2	3	2.33	.577
Q14f Visual impact of solar panels	39	1	4	1.49	.823
Q14g Visual impact of wind turbines	3	1	4	2.33	1.528
Q14h Noise caused by wind turbines	3	2	3	2.33	.577
Q14i Problems with recycling solar panel materials	39	1	4	2.08	.807
Valid N (listwise)	3				

Measured on the 4-point scale: 1 – not at all concerned, 2 - slightly concerned, 3 - quite concerned, 4 – very concerned

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.60: Attitudes about smart meters

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q15a Feedback provided by the smart meter helps me save energy	26	1	5	3.27	1.151
Q15b Smart meter enables better management of energy usage	26	1	5	3.23	1.070
Q15c The use of a smart meter contributes to reduced greenhouse gas emissions	27	1	5	2.93	1.107
Q15d I am concerned regarding the privacy of data collected by the smart meter	29	1	5	2.86	1.382
Q15e I am concerned about potential health effects of a wireless network used by the smart meter	28	1	4	1.79	.995
Valid N (listwise)	25				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.61: Social norms

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q16a Many of my peers use electricity generated from renewable energy sources	58	1	5	2.83	.994
Q16b It is our responsibility to move to renewable energy sources	58	1	5	3.40	1.123
Q16c Public institutions should be a role model in switching to clean energy sources	58	3	5	4.57	.565
Q16d Clean energy communities are the future of energy provision	58	2	5	3.72	.744
Q16e Clean energy communities make energy more affordable for everyone	58	3	5	4.17	.625
Q16f everyone can afford to join a clean energy community	58	1	5	2.69	1.217
Valid N (listwise)	58				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.62: Attitudes toward clean energy – in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q17a Energy efficiency and conservation just isn't that important to me	58	1	5	1.52	.778
Q17b When home, I take actions to conserve energy	58	1	5	4.31	.863
Q17c There is very little I can do personally to conserve energy in my home	58	1	5	2.03	1.042
Q17d I am not willing to conserve energy at home if that comes at any cost to my comfort	58	1	4	2.29	.859
Q17e Energy efficiency is vital to our national economy	58	1	5	4.16	.854
Q17f The government has a strong role to play in our nation's energy efficiency and conservation policies	58	1	5	4.57	.704
Q17g Clean energy is more important than reliable and affordable energy	58	1	5	3.47	1.096
Q17h Becoming an energy independent country is vital to our economic success and national security	58	1	5	3.95	.907
Valid N (listwise)	58				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.63: Attitudes toward clean energy - concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q18a That there may be power cuts in your country	57	1	4	2.25	.851
Q18b That energy might become too expensive for many people in your country	57	1	4	2.79	.818
Q18c Your country being too dependent on energy imports from other countries	57	1	5	3.11	.838
Q18d Your country being too dependent on using energy generated by fossil fuels such as oil, gas and coal?	57	1	5	3.96	.865
Q18e Your country being too dependent on using nuclear energy?	57	1	5	2.93	1.116
Valid N (listwise)	57				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 1.64: Energy literacy in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q19 In general, how informed do you feel about energy issues?	57	1	4	1.96	.755
Valid N (listwise)	57				

Measured on the 4-point scale: 1 – very well informed, 2 - fairly well informed, 3 - not very well informed, 4 – not at all well informed

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.65: Trust

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q25a In general, you can trust people	57	2	4	3.09	.474
Q25b Nowadays you cannot rely on anyone	57	1	4	2.46	.683
Q25c When dealing with strangers, it is better to be careful before you trust them	57	1	4	2.46	.709
Valid N (listwise)	57				

Measured on the 4-point scale: 1-– strongly disagree, 2 - disagree, 3 - agree, 4 – strongly agree

Table 1.66: Individuality vs communality

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q28a I`d rather depend on myself than others	57	1	9	5.56	1.918
Q28b I rely on myself most of the time, and rarely rely on others	57	1	9	5.14	2.133
Q28c I often do “my own thing”	57	1	9	6.16	1.623
Q28d I feel good when I cooperate with others	57	1	9	7.42	1.487
Q28e If a coworker gets a prize, I would feel proud	57	1	9	6.63	2.093
Q28f The well-being of my coworkers is important to me	57	1	9	7.40	1.613
Q28g To me, pleasure is spending time with others	57	1	9	6.23	1.955
Q28h My personal identity, independent of others, is very important to me	57	1	9	6.70	1.752
Valid N (listwise)	57				

Measured on the 9-point scale: 1—do not agree at all, 9 – do fully agree

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.67: Age

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	57	29	81	61.09	13.410
Valid N (listwise)	57				

Table 1.68: Current dwelling

B1 Does your household own or rent the dwelling you are currently living in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Me or another household member own the dwelling	7	10.1	12.3	12.3
	I/We rent the dwelling	48	69.6	84.2	96.5
	The dwelling is rent-free but not owned by me or another household member	2	2.9	3.5	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Measured on the 4-point scale: 1- me or another household 2 – I/we rent the dwelling, 3 – the dwelling is rent-free but not owned by me or another household member, 4 other, specify

Table 1.69: Type of building

B2 In what kind of building do you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Detached home	5	7.2	9.1	9.1
	Semi-detached home	18	26.1	32.7	41.8
	Apartment building	32	46.4	58.2	100.0
	Total	55	79.7	100.0	
Missing	Drop-out	12	17.4		
	Unanswered question	2	2.9		
	Total	14	20.3		
Total		69	100.0		

Measured on the 3-point scale: 1- detached home 2 – semi-detached home, 3 – apartment building

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.70: Type of area

B3 Which of the following best describes the area where you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A city	47	68.1	82.5	82.5
	A town or suburb	2	2.9	3.5	86.0
	Rural area	8	11.6	14.0	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Measured on the 3-point scale: 1- a city 2 – a town or suburb, 3 – rural area

Table 1.71: Number of people in household

B4a How many people live in your h

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	20	29.0	35.7	35.7
	2	25	36.2	44.6	80.4
	3	3	4.3	5.4	85.7
	4	8	11.6	14.3	100.0
	Total	56	81.2	100.0	
Missing	Drop-out	12	17.4		
	Unanswered question	1	1.4		
	Total	13	18.8		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.72: Number of children under 18 years of age in household

B4b How many children under the ag

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	1.4	9.1	9.1
	1	3	4.3	27.3	36.4
	2	7	10.1	63.6	100.0
	Total	11	15.9	100.0	
Missing	None of the above	25	36.2		
	Drop-out	12	17.4		
	Skipped question (IF logic)	21	30.4		
	Total	58	84.1		
Total		69	100.0		

Table 1.73: Number of children – all

B4c How many children do you have,

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	5.8	11.1	11.1
	2	18	26.1	50.0	61.1
	3	11	15.9	30.6	91.7
	4	1	1.4	2.8	94.4
	6	1	1.4	2.8	97.2
	8	1	1.4	2.8	100.0
	Total	36	52.2	100.0	
Missing	None of the above	21	30.4		
	Drop-out	12	17.4		
	Total	33	47.8		
Total		69	100.0		

Table 1.74: Gender

B5 What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	30	43.5	52.6	52.6
	Female	27	39.1	47.4	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 1.75: Education

B7 What is the highest level of education that you have attained?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upper secondary or post-secondary non-tertiary education (ISCED 3-4)	2	2.9	3.5	3.5
	Short-cycle tertiary education (ISCED 5)	8	11.6	14.0	17.5
	Bachelor's or equivalent level (ISCED 6)	9	13.0	15.8	33.3
	Master's or equivalent level (ISCED 7)	30	43.5	52.6	86.0
	Doctoral or equivalent level (ISCED 8)	8	11.6	14.0	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Measured on the 7-point scale: 1- no formal education (ISCED 0) 2 – primary or lower secondary education (ISCED 1-2), 3 – upper secondary or post-secondary non-tertiary education (ISCED 3-4), 4 short-cycle tertiary education (ISCED 5), 5 – Bachelor's or equivalent level (ISCED 6), 6 – Master's or equivalent level (ISCED 7), 7 – Doctoral or equivalent level (ISCED 8)

Table 1.76: Employment - type

B8 Which of the following best describes your employment situation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed or self-employed	29	42.0	50.9	50.9
	Retired	28	40.6	49.1	100.0
	Total	57	82.6	100.0	
Missing	Drop-out	12	17.4		
Total		69	100.0		

Measured on the 6-point scale: 1- employed or self-employed 2 – unemployed, 3 – retired, 4 – student or pupil, 5 – housework and caretaking responsibilities, 6 - other

Table 1.77: Employment - hours

B9 Are you...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Working full-time	16	23.2	55.2	55.2
	Working part-time, with at least 20 hours per week	11	15.9	37.9	93.1
	Working part-time or hourly with less than 20 hours per week	1	1.4	3.4	96.6
	Other, please specify:	1	1.4	3.4	100.0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

	Total	29	42.0	100.0	
Missing	Drop-out	12	17.4		
	Skipped question (IF logic)	28	40.6		
	Total	40	58.0		
Total		69	100.0		

Measured on the 4-point scale: 1- working full-time 2 – working part-time, with at least 20 hours per week, 3 – working part-time or hourly with less than 20 hours per week, 4 – other, specify

Table 1.78: Job related to energy production or supply

B10 Is your current job related to the field of energy production or supply?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	10.1	24.1	24.1
	No	22	31.9	75.9	100.0
	Total	29	42.0	100.0	
Missing	Drop-out	12	17.4		
	Skipped question (IF logic)	28	40.6		
	Total	40	58.0		
Total		69	100.0		

Table 1.79: Household total net monthly income

B11 Finally, could you please indicate what range matches your household's total net monthly income? If you don't know this exactly, please give your best estimate.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	500 to 999 €	3	30.0	42.9	42.9
	1.000 to 1.499 €	2	20.0	28.6	71.4
	1.500 to 1.999 €	1	10.0	14.3	85.7
	2.500 to 2.999 €	1	10.0	14.3	100.0
	Total	7	70.0	100.0	
Missing	Drop-out	3	30.0		
Total		10	100.0		

Measured on the 15-point scale: 1 – less than 500, 2- 500 to 999 3 – 1.000 to 1.499, 4 – 1.500 to 1.999, 5 – 2.000 to 2.499, 6 – 2.500 to 2.999, 7 – 3.000 to 3.499, 8 – 3.500 to 3.999, 9 – 4.000 to 4.499, 10 – 4.500 to 4.999, 11 – 5.000 to 5.499, 12 – 5.500 to 5.999, 13 – 6.000 to 6.499, 14 – 6.500 to 6.999, 15 – 7.000 or more

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

2. SONNEN, GERMANY

Table 2.1: Time of joining the CEC (month)

Q1a When did your household join Y (month:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	4.2	4.8	4.8
	2	6	25.0	28.6	33.3
	4	2	8.3	9.5	42.9
	5	3	12.5	14.3	57.1
	6	1	4.2	4.8	61.9
	7	2	8.3	9.5	71.4
	8	1	4.2	4.8	76.2
	9	1	4.2	4.8	81.0
	10	3	12.5	14.3	95.2
	11	1	4.2	4.8	100.0
	Total	21	87.5	100.0	
Missing	Drop-out	2	8.3		
	Unanswered question	1	4.2		
	Total	3	12.5		
Total		24	100.0		

Table 2.2: Time of joining the CEC (year)

Q1b When did your household join Y (year:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2016	3	12.5	14.3	14.3
	2017	2	8.3	9.5	23.8
	2018	3	12.5	14.3	38.1
	2019	3	12.5	14.3	52.4
	2020	8	33.3	38.1	90.5
	2021	2	8.3	9.5	100.0
	Total	21	87.5	100.0	
Missing	Drop-out	2	8.3		
	Unanswered question	1	4.2		
	Total	3	12.5		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.3: Which technologies the CEC uses – own solar panels

Q2a Own solar panels to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	selected	22	91.7	100.0	100.0
Missing	Drop-out	2	8.3		
Total		24	100.0		

Table 2.4: Which technologies the CEC uses – solar panels shared by the CEC

Q2b Solar panels shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	91.7	100.0	100.0
Missing	Drop-out	2	8.3		
Total		24	100.0		

Table 2.5: Which technologies the CEC uses – wind turbines shared by the CEC

Q2c Wind turbines shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	91.7	100.0	100.0
Missing	Drop-out	2	8.3		
Total		24	100.0		

Table 2.6: Which technologies the CEC uses – local hydroelectric power

Q2d Local hydroelectric power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	91.7	100.0	100.0
Missing	Drop-out	2	8.3		
Total		24	100.0		

Table 2.7: Which technologies the CEC uses – smart power meter

Q2e Smart power meter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	11	45.8	50.0	50.0
	selected	11	45.8	50.0	100.0
	Total	22	91.7	100.0	
Missing	Drop-out	2	8.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.8: Which technologies the CEC uses – heat pump

Q2f Heat pump

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	18	75.0	81.8	81.8
	selected	4	16.7	18.2	100.0
	Total	22	91.7	100.0	
Missing	Drop-out	2	8.3		
Total		24	100.0		

Table 2.9: Which technologies the CEC uses – battery for energy storage

Q2g Battery for energy storage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	1	4.2	4.5	4.5
	selected	21	87.5	95.5	100.0
	Total	22	91.7	100.0	
Missing	Drop-out	2	8.3		
Total		24	100.0		

Table 2.10: Which technologies the CEC uses – electric vehicle

Q2h Electric vehicle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	10	41.7	45.5	45.5
	selected	12	50.0	54.5	100.0
	Total	22	91.7	100.0	
Missing	Drop-out	2	8.3		
Total		24	100.0		

Table 2.11: Which technologies the CEC uses – other electricity generation or management technology

Q2i Other electricity generation or management technology (please, specify):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	91.7	100.0	100.0
Missing	Drop-out	2	8.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.12: Have you ever done any of the following – invested money in a CEC project

Q3a Invested money in a project run by your energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	4.2	4.8	4.8
	No	20	83.3	95.2	100.0
	Total	21	87.5	100.0	
Missing	Drop-out	3	12.5		
Total		24	100.0		

Table 2.13: Have you ever done any of the following – attended a CEC meeting

Q3b: Attended a community meeting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	12.5	14.3	14.3
	No	18	75.0	85.7	100.0
	Total	21	87.5	100.0	
Missing	Drop-out	3	12.5		
Total		24	100.0		

Table 2.14: Have you ever done any of the following – shared your knowledge/experience with CEC members

Q3c Shared your knowledge or experience related to energy with other members of the energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	16.7	19.0	19.0
	No	17	70.8	81.0	100.0
	Total	21	87.5	100.0	
Missing	Drop-out	3	12.5		
Total		24	100.0		

Table 2.15: Have you ever done any of the following – promoted your CEC to other potential new members

Q3d Promoted your energy community to potential new energy community members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	66.7	76.2	76.2
	No	5	20.8	23.8	100.0
	Total	21	87.5	100.0	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Missing	Drop-out	3	12.5
Total		24	100.0

Table 2.16: Have you ever done any of the following – participated your CEC with minor organizational responsibilities

Q3e Participated in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	8.3	9.5	9.5
	No	19	79.2	90.5	100.0
	Total	21	87.5	100.0	
Missing	Drop-out	3	12.5		
Total		24	100.0		

Table 2.17: Have you ever done any of the following – participated steering your CEC

Q3f Participated in steering your energy community (like decision-making about investments or participation in community management board)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	4.2	4.8	4.8
	No	20	83.3	95.2	100.0
	Total	21	87.5	100.0	
Missing	Drop-out	3	12.5		
Total		24	100.0		

Table 2.18: Personal involvement in deciding to join or not

Q10 Were you personally involved in making the decision to join the energy community or was this decision made by others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I was personally involved in deciding to join the energy community	16	66.7	94.1	94.1
	This decision was made entirely by others	1	4.2	5.9	100.0
	Total	17	70.8	100.0	
Missing	Drop-out	7	29.2		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.19: Sources of information about energy issues – TV or radio

Q20a News or documentary programmes on TV or radio

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	1	4.2	6.3	6.3
	selected	15	62.5	93.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.20: Sources of information about energy issues – internet

Q20b Searching on the internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	selected	16	66.7	100.0	100.0
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.21: Sources of information about energy issues – energy companies or providers

Q20c Energy companies or energy providers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	9	37.5	56.3	56.3
	selected	7	29.2	43.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.22: Sources of information about energy issues – newspapers

Q20d Newspapers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	7	29.2	43.8	43.8
	selected	9	37.5	56.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.23: Sources of information about energy issues – magazines

Q20e Magazines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	9	37.5	56.3	56.3
	selected	7	29.2	43.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.24: Sources of information about energy issues – national government or local council

Q20f Information from national government or my local council

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	13	54.2	81.3	81.3
	selected	3	12.5	18.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.25: Sources of information about energy issues – charities and NGOs

Q20g Charities and NGOs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	13	54.2	81.3	81.3
	selected	3	12.5	18.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.26: Sources of information about energy issues – CEC newsletters

Q20h Energy community newsletters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	2	8.3	12.5	12.5
	selected	14	58.3	87.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.27: Sources of information about energy issues – events organized by CECs

Q20i Workshop, webinars or other events organized by our energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	10	41.7	62.5	62.5
	selected	6	25.0	37.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.28: Sources of information about energy issues – my job

Q20j My job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	14	58.3	87.5	87.5
	selected	2	8.3	12.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.29: Sources of information about energy issues – other

Q20k Other:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	15	62.5	93.8	93.8
	selected	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.30: Potential sources of information about energy – a high school teacher

Q21a A high school teacher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	16	66.7	100.0	100.0
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.31: Potential sources of information about energy – textbooks

Q21b: Textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	14	58.3	87.5	87.5
	selected	2	8.3	12.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.32: Potential sources of information about energy – friends or classmates

Q21c Friends or classmates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	15	62.5	93.8	93.8
	selected	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.33: Potential sources of information about energy – family

Q21d Family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	16	66.7	100.0	100.0
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.34: Potential sources of information about energy – search engines

Q21e Search engines (e.g. Google search)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	2	8.3	12.5	12.5
	selected	14	58.3	87.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.35: Potential sources of information about energy – scholarly research database

Q21f Scholarly research database

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	11	45.8	68.8	68.8
	selected	5	20.8	31.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.36: Potential sources of information about energy – encyclopaedias

Q21g Online or print encyclopaedias (e.g. Wikipedia)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	20.8	31.3	31.3
	selected	11	45.8	68.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.37: Potential sources of information about energy – social media, non-professional

Q21h Social media feed; non-professional online profile pages (e.g. friends, family, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	15	62.5	93.8	93.8
	selected	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.38: Potential sources of information about energy – social media, professional

Q21i Social media; professional online profile pages (e.g. industry, non-profit, or subject expert)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	10	41.7	62.5	62.5
	selected	6	25.0	37.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.39: Potential sources of information about energy – blogs or forums

Q21j Blogs or forums

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	9	37.5	56.3	56.3
	selected	7	29.2	43.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.40: Potential sources of information about energy – government websites

Q21k Government websites (e.g. Department of Energy)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	4	16.7	25.0	25.0
	selected	12	50.0	75.0	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.41: Potential sources of information about energy – industry websites

Q21l Industry websites (e.g., utility, gas, renewables, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	10	41.7	62.5	62.5
	selected	6	25.0	37.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.42: Potential sources of information about energy – non-profit agencies

Q21m Non-profit agencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	12	50.0	75.0	75.0
	selected	4	16.7	25.0	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.43: Potential sources of information about energy – CEC

Q21n My energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	20.8	31.3	31.3
	selected	11	45.8	68.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.44: Potential sources of information about energy – consumer organizations

Q21o Consumer associations/organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	10	41.7	62.5	62.5
	selected	6	25.0	37.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.45: Potential sources of information about energy – other

Q21p Other, please specify:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	15	62.5	93.8	93.8
	selected	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.46: Donations

Q22 First we have a question about donations. By donations we mean the charitable giving of money for social, ecclesiastical, cultural, or similar non-profit purposes without receiving any direct compensation in return. These can be larger amounts, but also sm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	45.8	68.8	68.8
	No	5	20.8	31.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.47: Donations - amount

Q23 What was the total amount you (EUR)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30	1	4.2	9.1	9.1
	100	1	4.2	9.1	18.2
	200	3	12.5	27.3	45.5
	500	2	8.3	18.2	63.6
	800	1	4.2	9.1	72.7
	1000	1	4.2	9.1	81.8
	1200	2	8.3	18.2	100.0
	Total	11	45.8	100.0	
Missing	Drop-out	8	33.3		
	Skipped question (IF logic)	5	20.8		
	Total	13	54.2		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.48: Donations – non-financial

Q24 There are donations that are not financial, for example blood donations. Have you donated blood in the past 10 years?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	20.8	31.3	31.3
	No	11	45.8	68.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.49: Trust – in general

Q26 Do you think most people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Would take advantage of you if they had the opportunity	4	16.7	25.0	25.0
	Or would try to be fair to you?	12	50.0	75.0	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.50: Helpfulness

Q27 Would you say that most of the time people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Try to be helpful	12	50.0	75.0	75.0
	Or only pursue their own interests?	4	16.7	25.0	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.51: Active community involvement

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q4a Invest money in a project run by your energy community	21	1	5	3.57	1.076
Q4b Attend community meetings	21	3	5	3.86	.854
Q4c Share your knowledge or experience related to energy with other members of the energy community	21	1	5	4.10	1.044
Q4d Promote your energy community to potential new energy community members	21	2	5	4.14	1.062
Q4e Participate in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	21	1	5	3.05	1.161
Q4f Participate in steering your energy community (like decision-making about investment or participation in community management board)	21	1	5	3.33	1.155
Valid N (listwise)	21				

Measured on a 5-point scale: 1 - definitely not willing 2 - probably not willing 3 - maybe yes, maybe not 4 - probably willing, 5 – definitely willing

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.52: Identification with the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q5a I identify myself with our energy community	20	3	5	4.20	.616
Q5b I feel committed to our energy community	20	2	5	3.65	.745
Q5c I am proud to be a member of our energy community	20	2	5	4.15	.813
Q5d Being a member of our energy community is a central part of how I see myself	20	1	5	3.90	1.071
Valid N (listwise)	20				

Measured on the 5-point (dis)agreement scale: 1— strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.53: Trust within the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q6a I can rely on the leaders of our energy community to handle important issues on behalf of the community	13	3	5	4.08	.641
Q6b I am confident that potential problems with the energy-related technology used in our energy community will be resolved efficiently	17	3	5	4.29	.588
Q6c Most members respect rules set out by our energy community	13	3	5	4.15	.689
Q6d Some members are part of our energy community for their personal benefits only	12	1	5	3.25	1.055
Q6e Some members are contributing much less to our energy community than I do	12	3	3	3.00	.000
Q6f Our energy community is transparently sharing information among its members	15	2	5	3.73	.961
Valid N (listwise)	9				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.54: Empowerment

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q7a Formal community rules enable members to influence the organisational structure of the energy community	18	1	4	3.28	.826
Q7b I feel that our local government is supportive of the activities of our energy community	18	1	4	2.72	1.018
Q7c I can influence financial decisions or investments in our energy community	18	1	4	2.61	.778
Q7d As a member of the energy community I feel I could influence the energy policy in my country	18	2	5	3.89	.676
Q7e Since joining the energy community, I feel more connected with the people in my local community	18	3	4	3.17	.383
Q7f Since joining the energy community, I feel I can actually influence the transition to clean energy in our society	18	3	5	4.11	.583
Valid N (listwise)	18				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.55: Values

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q8a As a member of our energy community I feel like a trendsetter of a sustainable future	18	4	5	4.28	.461
Q8b I feel proud being a member of our energy community	18	2	5	3.78	.732
Q8c As a community member I get electricity for a better price	18	1	5	3.78	1.003
Q8d As a community member I better understand the importance of clean energy for the environment	18	1	5	3.67	.840
Q8e As a community member I have received a lot of useful advice regarding energy consumption in my home	18	2	4	3.28	.752
Q8f Participation in our energy community helps me fulfil responsibilities for future generations	18	2	5	4.00	.686
Q8g Participation in our energy community allows me to express my environmental concern	18	3	5	3.83	.707
Q8h Participation in our energy community strengthens my social solidarity	18	3	5	3.78	.647
Q8i Our energy community improves the image of the municipality	18	1	5	3.33	.970
Q8j Below are some more statements: Participation in our energy community gives me a better chance to interact with like-minded people.	18	3	4	3.61	.502
Q8k People I care about would approve of my	18	2	5	3.67	.767

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

participation in our energy community	
Valid N (listwise)	18

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 2.56: Motives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q9a To reduce electricity costs in the household	17	1	4	3.18	.883
Q9b To invest and earn money	17	1	4	2.41	1.228
Q9c To reduce fossil fuels consumption	18	3	4	3.78	.428
Q9d To do things together with other community members	17	1	4	2.29	1.160
Q9e To be part of a movement addressing climate change	18	2	4	3.44	.784
Q9f To engage with the new technologies	18	3	4	3.50	.514
Q9g To be independent from large power companies	18	2	4	3.50	.707
Q9h To contribute to my energy security	18	2	4	3.39	.608
Valid N (listwise)	17				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

Table 2.57: Incentives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q11a Opportunity to receive an energy subsidy	15	1	4	1.93	1.033
Q11b Opportunity for energy tax deduction	15	1	4	1.80	.941
Q11c Encouragement from family or friends	15	1	3	1.67	.617
Q11d Special offer from a company	15	1	3	1.87	.834

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Q11e Positive experience of other members of this or other energy communities	15	1	4	2.73	.799
Q11f Direct invitation to join the energy community	15	1	2	1.40	.507
Valid N (listwise)	15				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

Table 2.58: Challenges

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q13a to learn how to use a new technology	16	1	4	2.13	.957
Q13b Problems installing equipment	16	1	4	1.87	.885
Q13c Bureaucratic problems	16	1	4	2.75	.856
Q13d Uncertainty regarding liability and legal affairs	14	1	4	1.86	1.027
Q13e Lack of support from other household members	13	1	4	1.46	.967
Q13f Lack of cooperation of other community members	10	1	4	1.60	1.075
Q13g Lack of information about the project	12	1	3	1.50	.798
Q13h Expenses related to the project	15	1	4	2.20	.941
Q13i Doubts over financial benefits	14	1	4	1.64	.929
Q13j Doubts about the performance of technology (solar panels or wind turbines)	16	1	4	1.38	.806
Valid N (listwise)	10				

Measured on the 4-point scale: 1 – not a challenge at all, 2 - a small challenge, 3 - a moderate challenge, 4 – a large challenge

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.59: Concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q14a Costs of maintaining the technology	16	1	3	1.31	.602
Q14b Toxicity of materials in solar panels	16	1	3	1.38	.619
Q14c Flammability of materials in solar panels	16	1	3	1.31	.602
Q14d Impact of materials used for solar energy production technology on ecosystem	16	1	3	1.44	.629
Q14e Impact of materials used for wind energy production technology on ecosystem	0				
Q14f Visual impact of solar panels	16	1	3	1.25	.577
Q14g Visual impact of wind turbines	0				
Q14h Noise caused by wind turbines	0				
Q14i Problems with recycling solar panel materials	16	1	4	1.81	.750
Valid N (listwise)	0				

Measured on the 4-point scale: 1 – not at all concerned, 2 - slightly concerned, 3 - quite concerned, 4 – very concerned

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.60: Attitudes about smart meters

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q15a Feedback provided by the smart meter helps me save energy	8	1	5	3.25	1.282
Q15b Smart meter enables better management of energy usage	8	1	5	3.38	1.408
Q15c The use of a smart meter contributes to reduced greenhouse gas emissions	9	1	5	3.11	1.269
Q15d I am concerned regarding the privacy of data collected by the smart meter	9	2	5	3.33	1.118
Q15e I am concerned about potential health effects of a wireless network used by the smart meter	9	1	3	2.11	.601
Valid N (listwise)	8				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.61: Social norms

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q16a Many of my peers use electricity generated from renewable energy sources	16	2	4	2.88	.885
Q16b It is our responsibility to move to renewable energy sources	16	4	5	4.62	.500
Q16c Public institutions should be a role model in switching to clean energy sources	16	4	5	4.81	.403
Q16d Clean energy communities are the future of energy provision	16	4	5	4.56	.512
Q16e Clean energy communities make energy more affordable for everyone	16	3	5	4.00	.816
Q16f everyone can afford to join a clean energy community	16	1	5	3.25	1.291
Valid N (listwise)	16				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.62: Attitudes toward clean energy – in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q17a Energy efficiency and conservation just isn't that important to me	16	1	4	1.69	1.014
Q17b When home, I take actions to conserve energy	16	4	5	4.25	.447
Q17c There is very little I can do personally to conserve energy in my home	16	1	5	2.13	1.204
Q17d I am not willing to conserve energy at home if that comes at any cost to my comfort	16	1	4	2.38	.885
Q17e Energy efficiency is vital to our national economy	16	3	5	4.44	.629
Q17f The government has a strong role to play in our nation's energy efficiency and conservation policies	16	2	5	4.37	.806
Q17g Clean energy is more important than reliable and affordable energy	16	2	5	3.50	1.095
Q17h Becoming an energy independent country is vital to our economic success and national security	16	3	5	4.25	.775
Valid N (listwise)	16				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.63: Attitudes toward clean energy - concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q18a That there may be power cuts in your country	16	1	4	2.13	.957
Q18b That energy might become too expensive for many people in your country	16	1	4	2.56	1.153
Q18c Your country being too dependent on energy imports from other countries	16	1	5	3.19	1.276
Q18d Your country being too dependent on using energy generated by fossil fuels such as oil, gas and coal?	16	2	5	4.06	.998
Q18e Your country being too dependent on using nuclear energy?	16	1	5	3.25	1.183
Valid N (listwise)	16				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 2.64: Energy literacy in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q19 In general, how informed do you feel about energy issues?	16	1	3	1.75	.577
Valid N (listwise)	16				

Measured on the 4-point scale: 1 – very well informed, 2 - fairly well informed, 3 - not very well informed, 4 – not at all well informed

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.65: Trust

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q25a: In general, you can trust people	16	2	3	2.81	.403
Q25b Nowadays you cannot rely on anyone	16	1	3	2.06	.443
Q25c When dealing with strangers, it is better to be careful before you trust them	16	2	3	2.87	.342
Valid N (listwise)	16				

Measured on the 4-point scale: 1-– strongly disagree, 2 - disagree, 3 - agree, 4 – strongly agree

Table 2.66: Individuality vs communality

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q28a I`d rather depend on myself than others	16	1	8	5.94	1.843
Q28b I rely on myself most of the time, and rarely rely on others	16	3	8	5.81	1.974
Q28c I often do “my own thing”	16	1	8	5.31	2.120
Q28d I feel good when I cooperate with others	16	6	9	7.44	.892
Q28e If a coworker gets a prize, I would feel proud	16	5	9	7.06	1.289
Q28f The well-being of my coworkers is important to me	16	4	9	6.88	1.258
Q28g To me, pleasure is spending time with others	16	6	9	7.81	.834
Q28h My personal identity, independent of others, is very important to me	16	3	8	6.88	1.258
Valid N (listwise)	16				

Measured on the 9-point scale: 1- do not agree at all, 9 – do fully agree

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.67: Age

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	16	43	67	55.81	6.242
Valid N (listwise)	16				

Table 2.68: Current dwelling

B1 Does your household own or rent the dwelling you are currently living in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Me or another household member own the dwelling	16	66.7	100.0	100.0
Missing	Drop-out	8	33.3		
Total		24	100.0		

Measured on the 4-point scale: 1- me or another household 2 – I/we rent the dwelling, 3 – the dwelling is rent-free but not owned by me or another household member, 4 other, specify

Table 2.69: Type of building

B2 In what kind of building do you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Detached home	10	41.7	62.5	62.5
	Semi-detached home	6	25.0	37.5	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Measured on the 3-point scale: 1- detached home 2 – semi-detached home, 3 – apartment building

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.70: Type of area

B3 Which of the following best describes the area where you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A city	4	16.7	25.0	25.0
	A town or suburb	4	16.7	25.0	50.0
	Rural area	8	33.3	50.0	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.71: Number of people in household

B4a How many people live in your h

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	6	25.0	37.5	37.5
	3	6	25.0	37.5	75.0
	4	3	12.5	18.8	93.8
	5	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Table 2.72: Number of children under 18 years of age in household

B4b How many children under the ag

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	4.2	14.3	14.3
	1	4	16.7	57.1	71.4
	2	2	8.3	28.6	100.0
	Total	7	29.2	100.0	
Missing	None of the above	9	37.5		
	Drop-out	8	33.3		
	Total	17	70.8		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.73: Number of children - all

B4c How many children do you have,

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	8.3	14.3	14.3
	2	9	37.5	64.3	78.6
	3	3	12.5	21.4	100.0
	Total	14	58.3	100.0	
Missing	None of the above	2	8.3		
	Drop-out	8	33.3		
	Total	10	41.7		
Total		24	100.0		

Table 2.74: Gender

B5 What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	15	62.5	93.8	93.8
	Female	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.75: Education

B7 What is the highest level of education that you have attained?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary or lower secondary education (ISCED 1-2)	3	12.5	18.8	18.8
	Upper secondary or post-secondary non-tertiary education (ISCED 3-4)	2	8.3	12.5	31.3
	Short-cycle tertiary education (ISCED 5)	2	8.3	12.5	43.8
	Bachelor's or equivalent level (ISCED 6)	2	8.3	12.5	56.3
	Master's or equivalent level (ISCED 7)	6	25.0	37.5	93.8
	Doctoral or equivalent level (ISCED 8)	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Measured on the 7-point scale: 1- no formal education (ISCED 0) 2 – primary or lower secondary education (ISCED 1-2), 3 – upper secondary or post-secondary non-tertiary education (ISCED 3-4), 4 - short-cycle tertiary education (ISCED 5), 5 – Bachelor's or equivalent level (ISCED 6), 6 – Master's or equivalent level (ISCED 7), 7 – Doctoral or equivalent level (ISCED 8)

Table 2.76: Employment - type

B8 Which of the following best describes your employment situation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed or self-employed	13	54.2	81.3	81.3
	Retired	3	12.5	18.8	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Measured on the 6-point scale: 1- employed or self-employed 2 – unemployed, 3 – retired, 4 – student or pupil, 5 – housework and caretaking responsibilities, 6 - other

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.77: Employment - hours

B9 Are you...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Working full-time	12	50.0	92.3	92.3
	Working part-time or hourly with less than 20 hours per week	1	4.2	7.7	100.0
	Total	13	54.2	100.0	
Missing	Drop-out	8	33.3		
	Skipped question (IF logic)	3	12.5		
	Total	11	45.8		
Total		24	100.0		

Measured on the 4-point scale: 1- working full-time 2 – working part-time, with at least 20 hours per week, 3 – working part-time or hourly with less than 20 hours per week, 4 – other, specify

Table 2.78: Job related to energy production or supply

B10 Is your current job related to the field of energy production or supply?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	13	54.2	100.0	100.0
Missing	Drop-out	8	33.3		
	Skipped question (IF logic)	3	12.5		
	Total	11	45.8		
Total		24	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 2.79: Household total net monthly income

B11 Finally, could you please indicate what range matches your household's total net monthly income? If you don't know this exactly, please give your best estimate.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.500 to 2.999 EUR	2	8.3	12.5	12.5
	3.500 to 3.999 EUR	2	8.3	12.5	25.0
	4.000 to 4.499 EUR	2	8.3	12.5	37.5
	4.500 to 4.999 EUR	1	4.2	6.3	43.8
	5.000 und 5.499 EUR	3	12.5	18.8	62.5
	5.500 to 5.999 EUR	2	8.3	12.5	75.0
	6.000 to 6.499 EUR	1	4.2	6.3	81.3
	7.000 EUR or more	2	8.3	12.5	93.8
	Keine Angabe	1	4.2	6.3	100.0
	Total	16	66.7	100.0	
Missing	Drop-out	8	33.3		
Total		24	100.0		

Measured on the 15-point scale: 1 – less than 500, 2- 500 to 999 3 – 1.000 to 1.499, 4 – 1.500 to 1.999, 5 – 2.000 to 2.499, 6 – 2.500 to 2.999, 7 – 3.000 to 3.499, 8 – 3.500 to 3.999, 9 – 4.000 to 4.499, 10 – 4.500 to 4.999, 11 – 5.000 to 5.499, 12 – 5.500 to 5.999, 13 – 6.000 to 6.499, 14 – 6.500 to 6.999, 15 – 7.000 or more

3. SOLIDARITY & ENERGY, ITALY

Table 3.1: Time of joining the CEC (month)

Q1a When did your household join Y (month:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	4	26.7	57.1	57.1
	12	3	20.0	42.9	100.0
	Total	7	46.7	100.0	
Missing	Drop-out	7	46.7		
	Unanswered question	1	6.7		
	Total	8	53.3		
Total		15	100.0		

Table 3.2: Time of joining the CEC (year)

Q1b When did your household join Y (year:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2020	6	40.0	85.7	85.7
	2021	1	6.7	14.3	100.0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

	Total	7	46.7	100.0
Missing	Drop-out	7	46.7	
	Unanswered question	1	6.7	
	Total	8	53.3	
Total		15	100.0	

Table 3.3: Which technologies the CEC uses – own solar panels

Q2a Own solar panels to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

Table 3.4: Which technologies the CEC uses – solar panels shared by the CEC

Q2b Solar panels shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

Table 3.5: Which technologies the CEC uses – wind turbines shared by the CEC

Q2c Wind turbines shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

Table 3.6: Which technologies the CEC uses – local hydroelectric power

Q2d Local hydroelectric power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

	Total	10	66.7		
Total		15	100.0		

Table 3.7: Which technologies the CEC uses – smart power meter

Q2e Smart power meter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

Table 3.8: Which technologies the CEC uses – heat pump

Q2f Heat pump

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

Table 3.9: Which technologies the CEC uses – battery for energy storage

Q2g Battery for energy storage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

Table 3.10: Which technologies the CEC uses – electric vehicle

Q2h Electric vehicle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.11: Which technologies the CEC uses – other electricity generation or management technology

Q2i Other electricity generation or management technology (please, specify):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	None of the above	1	6.7		
	Drop-out	9	60.0		
	Total	10	66.7		
Total		15	100.0		

Table 3.12: Have you ever done any of the following – invested money in a CEC project

Q3a Invested money in a project run by your energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	33.3	100.0	100.0
Missing	Drop-out	9	60.0		
	Unanswered question	1	6.7		
	Total	10	66.7		
Total		15	100.0		

Table 3.13: Have you ever done any of the following – attended a CEC meeting

Q3b Attended a community meeting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	20.0	50.0	50.0
	No	3	20.0	50.0	100.0
	Total	6	40.0	100.0	
Missing	Drop-out	9	60.0		
Total		15	100.0		

Table 3.14: Have you ever done any of the following – shared your knowledge/experience with CEC members

Q3c Shared your knowledge or experience related to energy with other members of the energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	20.0	60.0	60.0
	No	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	9	60.0		
	Unanswered question	1	6.7		
	Total	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.15: Have you ever done any of the following – promoted your CEC to other potential new members

Q3d Promoted your energy community to potential new energy community members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	26.7	100.0	100.0
Missing	Drop-out	9	60.0		
	Unanswered question	2	13.3		
	Total	11	73.3		
Total		15	100.0		

Table 3.16: Have you ever done any of the following – participated your CEC with minor organizational responsibilities

Q3e Participated in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	26.7	100.0	100.0
Missing	Drop-out	9	60.0		
	Unanswered question	2	13.3		
	Total	11	73.3		
Total		15	100.0		

Table 3.17: Have you ever done any of the following – participated steering your CEC

Q3f Participated in steering your energy community (like decision-making about investments or participation in community management board)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	26.7	100.0	100.0
Missing	Drop-out	9	60.0		
	Unanswered question	2	13.3		
	Total	11	73.3		
Total		15	100.0		

Table 3.18: Personal involvement in deciding to join or not

Q10 Were you personally involved in making the decision to join the energy community or was this decision made by others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I was personally involved in deciding to join the energy community	1	6.7	20.0	20.0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

	This decision was made entirely by others	4	26.7	80.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.19: Sources of information about energy issues – TV or radio

Q20a News or documentary programmes on TV or radio

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	3	20.0	60.0	60.0
	selected	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.20: Sources of information about energy issues – internet

Q20b: Searching on the internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.21: Sources of information about energy issues – energy companies or providers

Q20c Energy companies or energy providers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.22: Sources of information about energy issues – newspapers

Q20d Newspapers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.23: Sources of information about energy issues – magazines

Q20e Magazines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.24: Sources of information about energy issues – national government or local council

Q20f Information from national government or my local council

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.25: Sources of information about energy issues – charities and NGOs

Q20g Charities and NGOs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.26: Sources of information about energy issues – CEC newsletters

Q20h Energy community newsletters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.27: Sources of information about energy issues – events organized by CECs

Q20i Workshop, webinars or other events organized by our energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	3	20.0	60.0	60.0
	selected	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.28: Sources of information about energy issues – my job

Q20j My job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	3	20.0	60.0	60.0
	selected	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.29: Sources of information about energy issues – other

Q20k Other:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.30: Potential sources of information about energy – a high school teacher

Q21a A high school teacher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.31: Potential sources of information about energy – textbooks

Q21b Textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.32: Potential sources of information about energy – friends or classmates

Q21c Friends or classmates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.33: Potential sources of information about energy – family

Q21d Family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.34: Potential sources of information about energy – search engines

Q21e: Search engines (e.g. Google search)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.35: Potential sources of information about energy – scholarly research database

Q21f Scholarly research database

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.36: Potential sources of information about energy – encyclopaedias

Q21g Online or print encyclopaedias (e.g. Wikipedia)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.37: Potential sources of information about energy – social media, non-professional

Q21h Social media feed; non-professional online profile pages (e.g. friends, family, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.38: Potential sources of information about energy – social media, professional

Q21i Social media; professional online profile pages (e.g. industry, non-profit, or subject expert)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.39: Potential sources of information about energy – blogs or forums

Q21j Blogs or forums

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.40: Potential sources of information about energy – government websites

Q21k Government websites (e.g. Department of Energy)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	4	26.7	80.0	80.0
	selected	1	6.7	20.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.41: Potential sources of information about energy – industry websites

Q21l Industry websites (e.g., utility, gas, renewables, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.42: Potential sources of information about energy – non-profit agencies

Q21m Non-profit agencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.43: Potential sources of information about energy – CEC

Q21n My energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	1	6.7	20.0	20.0
	selected	4	26.7	80.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.44: Potential sources of information about energy – consumer organizations

Q21o Consumer associations/organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.45: Potential sources of information about energy – other

Q21p Other, please specify:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.46: Donations

Q22 First we have a question about donations. By donations we mean the charitable giving of money for social, ecclesiastical, cultural, or similar non-profit purposes without receiving any direct compensation in return. These can be larger amounts, but also sm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.47: Donations - amount

Q23 What was the total amount you (EUR)

		Frequency	Percent
Missing	Drop-out	10	66.7
	Skipped question (IF logic)	5	33.3
	Total	15	100.0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.48: Donations – non-financial

Q24 There are donations that are not financial, for example blood donations. Have you donated blood in the past 10 years?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.49: Trust – in general

Q26 Do you think most people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Would take advantage of you if they had the opportunity	2	13.3	40.0	40.0
	Or would try to be fair to you?	3	20.0	60.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.50: Helpfulness

Q27 Would you say that most of the time people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Try to be helpful	2	13.3	40.0	40.0
	Or only pursue their own interests?	3	20.0	60.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.51: Active community involvement

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q4a Invest money in a project run by your energy community	5	1	5	2.60	1.817
Q4b Attend community meetings	4	3	5	4.50	1.000
Q4c Share your knowledge or experience related to energy with other members of the energy community	4	1	5	3.25	1.708
Q4d Promote your energy community to potential new energy community members	4	1	5	3.75	1.893
Q4e Participate in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	4	1	5	3.50	1.915
Q4f Participate in steering your energy community (like decision-making about investment or participation in community management board)	4	1	5	3.00	2.309
Valid N (listwise)	4				

Measured on a 5-point scale: 1 - definitely not willing 2 - probably not willing 3 - maybe yes, maybe not 4 - probably willing, 5 – definitely willing

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.52: Identification with the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q5a I identify myself with our energy community	5	2	4	2.80	1.095
Q5b I feel committed to our energy community	4	1	4	2.50	1.291
Q5c I am proud to be a member of our energy community	4	2	4	3.50	1.000
Q5d Being a member of our energy community is a central part of how I see myself	4	1	4	2.75	1.258
Valid N (listwise)	4				

Measured on the 5-point (dis)agreement scale: 1— strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.53: Trust within the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q6a I can rely on the leaders of our energy community to handle important issues on behalf of the community	5	4	5	4.20	.447
Q6b I am confident that potential problems with the energy-related technology used in our energy community will be resolved efficiently	4	4	5	4.25	.500
Q6c Most members respect rules set out by our energy community	4	3	4	3.75	.500
Q6d Some members are part of our energy community for their personal benefits only	4	2	3	2.50	.577
Q6e Some members are contributing much less to our energy community than I do	3	3	5	3.67	1.155
Q6f energy community is transparently sharing information among its members	2	4	5	4.50	.707
Valid N (listwise)	2				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.54: Empowerment

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q7a Formal community rules enable members to influence the organisational structure of the energy community	5	2	4	3.20	.837
Q7b I feel that our local government is supportive of the activities of our energy community	5	2	4	3.40	.894
Q7c I can influence financial decisions or investments in our energy community	4	1	4	2.25	1.500
Q7d As a member of the energy community I feel I could influence the energy policy in my country	5	1	3	2.00	1.000
Q7e Since joining the energy community, I feel more connected with the people in my local community	5	1	4	3.20	1.304
Q7f Since joining the energy community, I feel I can actually influence the transition to clean energy in our society	5	1	4	3.20	1.304
Valid N (listwise)	4				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.55: Values

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q8a As a member of our energy community I feel like a trendsetter of a sustainable future	5	4	4	4.00	.000
Q8b I feel proud being a member of our energy community	5	4	4	4.00	.000
Q8c As a community member I get electricity for a better price	5	4	5	4.20	.447
Q8d As a community member I better understand the importance of clean energy for the environment	5	2	4	3.60	.894
Q8e As a community member I have received a lot of useful advice regarding energy consumption in my home	5	2	4	3.40	.894
Q8f Participation in our energy community helps me fulfil responsibilities for future generations	5	2	4	3.60	.894
Q8g Participation in our energy community allows me to express my environmental concern	5	2	4	3.40	.894
Q8h Participation in our energy community strengthens my social solidarity	5	2	5	3.60	1.140
Q8i Our energy community improves the image of the municipality	5	3	5	4.00	.707
Q8j Participation in our energy community gives me a better chance to interact with like-minded people.	5	2	4	3.60	.894
Q8k People I care about would approve of my participation in our energy community	5	2	5	3.80	1.095

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Valid N (listwise)	5

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 3.56: Motives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q9a To reduce electricity costs in the household	5	3	4	3.40	.548
Q9b To invest and earn money	5	2	4	2.40	.894
Q9c To reduce fossil fuels consumption	5	3	4	3.60	.548
Q9d To do things together with other community members	5	2	4	3.40	.894
Q9e To be part of a movement addressing climate change	5	3	4	3.20	.447
Q9f To engage with the new technologies	5	2	4	3.00	.707
Q9g To be independent from large power companies	5	2	4	2.80	.837
Q9h To contribute to my energy security	5	2	3	2.60	.548
Valid N (listwise)	5				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.57: Incentives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q11a Opportunity to receive an energy subsidy	1	4	4	4.00	.
Q11b Opportunity for energy tax deduction	1	1	1	1.00	.
Q11c Encouragement from family or friends	1	3	3	3.00	.
Q11d Special offer from a company	1	3	3	3.00	.
Q11e Positive experience of other members of this or other energy communities	1	1	1	1.00	.
Q11f Direct invitation to join the energy community	1	4	4	4.00	.
Valid N (listwise)	1				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.58: Challenges

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q13a Need to learn how to use a new technology	3	2	3	2.33	.577
Q13b: Problems installing equipment	3	2	4	2.67	1.155
Q13c Bureaucratic problems	2	1	3	2.00	1.414
Q13d Uncertainty regarding liability and legal affairs	3	1	3	1.67	1.155
Q13e Lack of support from other household members	3	1	3	1.67	1.155
Q13f Lack of cooperation of other community members	3	1	3	2.33	1.155
Q13g Lack of information about the project	2	2	3	2.50	.707
Q13h Expenses related to the project	3	1	3	1.67	1.155
Q13i Doubts over financial benefits	3	1	3	1.67	1.155
Q13j Doubts about the performance of technology (solar panels or wind turbines)	3	1	3	1.67	1.155
Valid N (listwise)	1				

Measured on the 4-point scale: 1 – not a challenge at all, 2 - a small challenge, 3 - a moderate challenge, 4 – a large challenge

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.59: Concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q14a Costs of maintaining the technology	5	1	3	1.80	.837
Q14b Toxicity of materials in solar panels	4	1	2	1.25	.500
Q14c Flammability of materials in solar panels	4	1	2	1.25	.500
Q14d Impact of materials used for solar energy production technology on ecosystem	4	1	2	1.25	.500
Q14e Impact of materials used for wind energy production technology on ecosystem	0				
Q14f Visual impact of solar panels	4	1	2	1.25	.500
Q14g Visual impact of wind turbines	0				
Q14h Noise caused by wind turbines	0				
Q14i Problems with recycling solar panel materials	4	1	2	1.50	.577
Valid N (listwise)	0				

Measured on the 4-point scale: 1 – not at all concerned, 2 - slightly concerned, 3 - quite concerned, 4 – very concerned

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.61: Social norms

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q16a Many of my peers use electricity generated from renewable energy sources	5	3	4	3.80	.447
Q16b It is our responsibility to move to renewable energy sources	5	2	5	3.60	1.140
Q16c Public institutions should be a role model in switching to clean energy sources	5	3	5	4.20	.837
Q16d Clean energy communities are the future of energy provision	5	3	5	4.00	.707
Q16e Clean energy communities make energy more affordable for everyone	5	3	5	4.00	.707
Q16f Not everyone can afford to join a clean energy community	5	2	4	3.00	.707
Valid N (listwise)	5				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.62: Attitudes toward clean energy – in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q17a Energy efficiency and conservation just isn't that important to me	5	2	4	3.20	.837
Q17b When home, I take actions to conserve energy	5	3	5	4.00	.707
Q17c There is very little I can do personally to conserve energy in my home	5	1	3	2.20	.837
Q17d I am not willing to conserve energy at home if that comes at any cost to my comfort	5	1	4	2.20	1.095
Q17e Energy efficiency is vital to our national economy	5	3	4	3.60	.548
Q17f The government has a strong role to play in our nation's energy efficiency and conservation policies	5	3	5	4.00	.707
Q17g Clean energy is more important than reliable and affordable energy	5	3	5	3.80	.837
Q17h Becoming an energy independent country is vital to our economic success and national security	5	4	5	4.20	.447
Valid N (listwise)	5				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.63: Attitudes toward clean energy - concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q18a That there may be power cuts in your country	5	1	3	2.20	.837
Q18b That energy might become too expensive for many people in your country	5	2	4	2.80	.837
Q18c Your country being too dependent on energy imports from other countries	5	2	4	2.60	.894
Q18d Your country being too dependent on using energy generated by fossil fuels such as oil, gas and coal?	5	2	5	3.20	1.304
Q18e Your country being too dependent on using nuclear energy?	5	1	4	1.80	1.304
Valid N (listwise)	5				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 3.64: Energy literacy in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q19 In general, how informed do you feel about energy issues?	5	2	4	3.00	.707
Valid N (listwise)	5				

Measured on the 4-point scale: 1 – very well informed, 2 - fairly well informed, 3 - not very well informed, 4 – not at all well informed

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.65: Trust

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q25a In general, you can trust people	5	3	3	3.00	.000
Q25b Nowadays you cannot rely on anyone	5	1	3	2.20	.837
Q25c When dealing with strangers, it is better to be careful before you trust them	5	3	3	3.00	.000
Valid N (listwise)	5				

Measured on the 4-point scale: 1-– strongly disagree, 2 - disagree, 3 - agree, 4 – strongly agree

Table 3.66: Individuality vs communality

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q28a I`d rather depend on myself than others	5	5	9	7.40	1.817
Q28b I rely on myself most of the time, and rarely rely on others	5	2	9	5.80	3.564
Q28c I often do “my own thing”	5	6	9	7.80	1.304
Q28d I feel good when I cooperate with others	5	2	9	6.80	2.864
Q28e If a coworker gets a prize, I would feel proud	5	2	9	7.00	2.915
Q28f The well-being of my coworkers is important to me	5	2	9	7.20	3.033
Q28g To me, pleasure is spending time with others	5	2	9	6.80	2.864
Q28h My personal identity, independent of others, is very important to me	5	5	9	7.60	1.673
Valid N (listwise)	5				

Measured on the 9-point scale: 1- do not agree at all, 9 – do fully agree

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.67: Age

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	5	57	69	61.20	4.712
Valid N (listwise)	5				

Table 3.68: Current dwelling

B1 Does your household own or rent the dwelling you are currently living in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I/We rent the dwelling	2	13.3	40.0	40.0
	Other, please specify:	3	20.0	60.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Measured on the 4-point scale: 1- me or another household 2 – I/we rent the dwelling, 3 – the dwelling is rent-free but not owned by me or another household member, 4 other, specify

Table 3.69: Type of building

B2 In what kind of building do you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Detached home	1	6.7	20.0	20.0
	Semi-detached home	2	13.3	40.0	60.0
	Apartment building	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Measured on the 3-point scale: 1- detached home 2 – semi-detached home, 3 – apartment building

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.70: Type of area

B3 Which of the following best describes the area where you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A city	5	33.3	100.0	100.0
Missing	Drop-out	10	66.7		
Total		15	100.0		

Measured on the 3-point scale: 1- a city 2 – a town or suburb, 3 – rural area

Table 3.71: Number of people in household

B4a How many people live in your h

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	20.0	60.0	60.0
	2	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.72: Number of children under 18 years of age in household

B4b How many children under the ag

		Frequency	Percent
Missing	None of the above	2	13.3
	Drop-out	10	66.7
	Skipped question (IF logic)	3	20.0
	Total	15	100.0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.73: Number of children - all

B4c How many children do you have,

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	6.7	25.0	25.0
	2	2	13.3	50.0	75.0
	3	1	6.7	25.0	100.0
	Total	4	26.7	100.0	
Missing	None of the above	1	6.7		
	Drop-out	10	66.7		
	Total	11	73.3		
Total		15	100.0		

Table 3.74: Gender

B5 What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	3	20.0	60.0	60.0
	Female	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Table 3.75: Education

B7 What is the highest level of education that you have attained?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upper secondary or post-secondary non-tertiary education (ISCED 3-4)	4	26.7	80.0	80.0
	Short-cycle tertiary education (ISCED 5)	1	6.7	20.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Measured on the 7-point scale: 1- no formal education (ISCED 0) 2 – primary or lower secondary education (ISCED 1-2), 3 – upper secondary or post-secondary non-tertiary education (ISCED 3-4), 4 - short-cycle tertiary education (ISCED 5), 5 – Bachelor's or equivalent level (ISCED 6), 6 – Master's or equivalent level (ISCED 7), 7 – Doctoral or equivalent level (ISCED 8)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.76: Employment - type

B8 Which of the following best describes your employment situation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed or self-employed	3	20.0	60.0	60.0
	Retired	1	6.7	20.0	80.0
	Housework and caretaking responsibilities	1	6.7	20.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Measured on the 6-point scale: 1- employed or self-employed 2 – unemployed, 3 – retired, 4 – student or pupil, 5 – housework and caretaking responsibilities, 6 - other

Table 3.77: Employment - hours

B9 Are you...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Working full-time	1	6.7	33.3	33.3
	Working part-time, with at least 20 hours per week	1	6.7	33.3	66.7
	Working part-time or hourly with less than 20 hours per week	1	6.7	33.3	100.0
	Total	3	20.0	100.0	
Missing	Drop-out	10	66.7		
	Skipped question (IF logic)	2	13.3		
	Total	12	80.0		
Total		15	100.0		

Measured on the 4-point scale: 1- working full-time 2 – working part-time, with at least 20 hours per week, 3 – working part-time or hourly with less than 20 hours per week, 4 – other, specify

Table 3.78: Job related to energy production or supply

B10 Is your current job related to the field of energy production or supply?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	20.0	100.0	100.0
Missing	Drop-out	10	66.7		
	Skipped question (IF logic)	2	13.3		
	Total	12	80.0		
Total		15	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 3.79: Household total net monthly income

B11 Finally, could you please indicate what range matches your household's total net monthly income? If you don't know this exactly, please give your best estimate.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	500 to 999 EURO	3	20.0	60.0	60.0
	1.000 to 1.499 EURO	2	13.3	40.0	100.0
	Total	5	33.3	100.0	
Missing	Drop-out	10	66.7		
Total		15	100.0		

Measured on the 15-point scale: 1 – less than 500, 2- 500 to 999 3 – 1.000 to 1.499, 4 – 1.500 to 1.999, 5 – 2.000 to 2.499, 6 – 2.500 to 2.999, 7 – 3.000 to 3.499, 8 – 3.500 to 3.999, 9 – 4.000 to 4.499, 10 – 4.500 to 4.999, 11 – 5.000 to 5.499, 12 – 5.500 to 5.999, 13 – 6.000 to 6.499, 14 – 6.500 to 6.999, 15 – 7.000 or more

4. DALBY SOLBY, SWEDEN

Table 4.1: Time of joining the CEC (month)

Q1a When did your household join Y (month:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.4	4.3	4.3
	2	2	6.9	8.7	13.0
	3	2	6.9	8.7	21.7
	4	4	13.8	17.4	39.1
	5	2	6.9	8.7	47.8
	6	3	10.3	13.0	60.9
	7	2	6.9	8.7	69.6
	8	1	3.4	4.3	73.9
	9	1	3.4	4.3	78.3
	11	1	3.4	4.3	82.6
	12	4	13.8	17.4	100.0
	Total	23	79.3	100.0	
Missing	Unanswered question	6	20.7		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.2: Time of joining the CEC (year)

Q1b When did your household join Y (year:)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1987	3	10.3	10.7	10.7
	1988	1	3.4	3.6	14.3
	1989	1	3.4	3.6	17.9
	1991	1	3.4	3.6	21.4
	1995	1	3.4	3.6	25.0
	1996	1	3.4	3.6	28.6
	1999	1	3.4	3.6	32.1
	2007	1	3.4	3.6	35.7
	2008	3	10.3	10.7	46.4
	2009	1	3.4	3.6	50.0
	2010	2	6.9	7.1	57.1
	2011	1	3.4	3.6	60.7
	2015	2	6.9	7.1	67.9
	2018	2	6.9	7.1	75.0
	2019	2	6.9	7.1	82.1
	2020	5	17.2	17.9	100.0
	Total	28	96.6	100.0	
Missing	Unanswered question	1	3.4		
Total		29	100.0		

Table 4.3: Which technologies the CEC uses – own solar panels

Q2a Own solar panels to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	18	62.1	94.7	94.7
	selected	1	3.4	5.3	100.0
	Total	19	65.5	100.0	
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.4: Which technologies the CEC uses – solar panels shared by the CEC

Q2b Solar panels shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	12	41.4	63.2	63.2
	selected	7	24.1	36.8	100.0
	Total	19	65.5	100.0	
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

Table 4.5: Which technologies the CEC uses – wind turbines shared by the CEC

Q2c Wind turbines shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	8	27.6	42.1	42.1
	selected	11	37.9	57.9	100.0
	Total	19	65.5	100.0	
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

Table 4.6: Which technologies the CEC uses – local hydroelectric power

Q2d Local hydroelectric power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	18	62.1	94.7	94.7
	selected	1	3.4	5.3	100.0
	Total	19	65.5	100.0	
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.7: Which technologies the CEC uses – smart power meter

Q2e Smart power meter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	19	65.5	100.0	100.0
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

Table 4.8: Which technologies the CEC uses – heat pump

Q2f Heat pump

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	10	34.5	52.6	52.6
	selected	9	31.0	47.4	100.0
	Total	19	65.5	100.0	
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

Table 4.9: Which technologies the CEC uses – battery for energy storage

Q2g Battery for energy storage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	19	65.5	100.0	100.0
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.10: Which technologies the CEC uses – electric vehicle

Q2h Electric vehicle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	13	44.8	68.4	68.4
	selected	6	20.7	31.6	100.0
	Total	19	65.5	100.0	
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

Table 4.11: Which technologies the CEC uses – other electricity generation or management technology

Q2i Other electricity generation or management technology (please, specify):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	14	48.3	73.7	73.7
	selected	5	17.2	26.3	100.0
	Total	19	65.5	100.0	
Missing	None of the above	8	27.6		
	Drop-out	2	6.9		
	Total	10	34.5		
Total		29	100.0		

Table 4.12: Have you ever done any of the following – invested money in a CEC project

Q3a Invested money in a project run by your energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	27.6	32.0	32.0
	No	17	58.6	68.0	100.0
	Total	25	86.2	100.0	
Missing	Drop-out	3	10.3		
	Unanswered question	1	3.4		
	Total	4	13.8		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.13: Have you ever done any of the following – attended a CEC meeting

Q3b Attended a community meeting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	89.7	100.0	100.0
Missing	Drop-out	3	10.3		
Total		29	100.0		

Table 4.14: Have you ever done any of the following – shared your knowledge/experience with CEC members

Q3c Shared your knowledge or experience related to energy with other members of the energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	44.8	50.0	50.0
	No	13	44.8	50.0	100.0
	Total	26	89.7	100.0	
Missing	Drop-out	3	10.3		
Total		29	100.0		

Table 4.15: Have you ever done any of the following – promoted your CEC to other potential new members

Q3d Promoted your energy community to potential new energy community members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	79.3	88.5	88.5
	No	3	10.3	11.5	100.0
	Total	26	89.7	100.0	
Missing	Drop-out	3	10.3		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.16: Have you ever done any of the following – participated your CEC with minor organizational responsibilities

Q3e Participated in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	75.9	84.6	84.6
	No	4	13.8	15.4	100.0
	Total	26	89.7	100.0	
Missing	Drop-out	3	10.3		
Total		29	100.0		

Table 4.17: Have you ever done any of the following – participated steering your CEC

Q3f Participated in steering your energy community (like decision-making about investments or participation in community management board)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	58.6	65.4	65.4
	No	9	31.0	34.6	100.0
	Total	26	89.7	100.0	
Missing	Drop-out	3	10.3		
Total		29	100.0		

Table 4.18: Personal involvement in deciding to join or not

Q10 Were you personally involved in making the decision to join the energy community or was this decision made by others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I was personally involved in deciding to join the energy community	24	82.8	100.0	100.0
Missing	Drop-out	5	17.2		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.19: Sources of information about energy issues – TV or radio

Q20a News or documentary programmes on TV or radio

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	4	13.8	18.2	18.2
	selected	18	62.1	81.8	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.20: Sources of information about energy issues – internet

Q20b Searching on the internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	12	41.4	54.5	54.5
	selected	10	34.5	45.5	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.21: Sources of information about energy issues – energy companies or providers

Q20c Energy companies or energy providers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	14	48.3	63.6	63.6
	selected	8	27.6	36.4	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.22: Sources of information about energy issues – newspapers

Q20d Newspapers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	8	27.6	36.4	36.4
	selected	14	48.3	63.6	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.23: Sources of information about energy issues – magazines

Q20e Magazines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	13	44.8	59.1	59.1
	selected	9	31.0	40.9	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.24: Sources of information about energy issues – national government or local council

Q20f Information from national government or my local council

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	13	44.8	59.1	59.1
	selected	9	31.0	40.9	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.25: Sources of information about energy issues – charities and NGOs

Q20g Charities and NGOs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	10	34.5	45.5	45.5
	selected	12	41.4	54.5	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.26: Sources of information about energy issues – CEC newsletters

Q20h Energy community newsletters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	15	51.7	68.2	68.2
	selected	7	24.1	31.8	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.27: Sources of information about energy issues – events organized by CECs

Q20i Workshop, webinars or other events organized by our energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	20	69.0	90.9	90.9
	selected	2	6.9	9.1	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.28: Sources of information about energy issues – my job

Q20j My job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	21	72.4	95.5	95.5
	selected	1	3.4	4.5	100.0
	Total	22	75.9	100.0	
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.29: Sources of information about energy issues – other

Q20k Other:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	75.9	100.0	100.0
Missing	None of the above	1	3.4		
	Drop-out	6	20.7		
	Total	7	24.1		
Total		29	100.0		

Table 4.30: Potential sources of information about energy – a high school teacher

Q21a A high school teacher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	23	79.3	100.0	100.0
Missing	Drop-out	6	20.7		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.31: Potential sources of information about energy – textbooks

Q21b Textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	75.9	95.7	95.7
	selected	1	3.4	4.3	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.32: Potential sources of information about energy – friends or classmates

Q21c Friends or classmates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	17	58.6	73.9	73.9
	selected	6	20.7	26.1	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.33: Potential sources of information about energy – family

Q21d Family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	18	62.1	78.3	78.3
	selected	5	17.2	21.7	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.34: Potential sources of information about energy – search engines

Q21e Search engines (e.g. Google search)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	20.7	26.1	26.1
	selected	17	58.6	73.9	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.35: Potential sources of information about energy – scholarly research database

Q21f Scholarly research database

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	19	65.5	82.6	82.6
	selected	4	13.8	17.4	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.36: Potential sources of information about energy – encyclopaedias

Q21g Online or print encyclopaedias (e.g. Wikipedia)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	12	41.4	52.2	52.2
	selected	11	37.9	47.8	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.37: Potential sources of information about energy – social media, non-professional
Q21h Social media feed; non-professional online profile pages (e.g. friends, family, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	75.9	95.7	95.7
	selected	1	3.4	4.3	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.38: Potential sources of information about energy – social media, professional
Q21i Social media; professional online profile pages (e.g. industry, non-profit, or subject expert)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	17	58.6	73.9	73.9
	selected	6	20.7	26.1	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.39: Potential sources of information about energy – blogs or forums
Q21j Blogs or forums

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	75.9	95.7	95.7
	selected	1	3.4	4.3	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.40: Potential sources of information about energy – government websites
Q21k Government websites (e.g. Department of Energy)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	9	31.0	39.1	39.1
	selected	14	48.3	60.9	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.41: Potential sources of information about energy – industry websites
Q21l Industry websites (e.g., utility, gas, renewables, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	16	55.2	69.6	69.6
	selected	7	24.1	30.4	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.42: Potential sources of information about energy – non-profit agencies
Q21m Non-profit agencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	16	55.2	69.6	69.6
	selected	7	24.1	30.4	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.43: Potential sources of information about energy – CEC
Q21n My energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	15	51.7	65.2	65.2
	selected	8	27.6	34.8	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.44: Potential sources of information about energy – consumer organizations
Q21o Consumer associations/organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	22	75.9	95.7	95.7
	selected	1	3.4	4.3	100.0
	Total	23	79.3	100.0	
Missing	Drop-out	6	20.7		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.45: Potential sources of information about energy – other

Q21p Other, please specify:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	23	79.3	100.0	100.0
Missing	Drop-out	6	20.7		
Total		29	100.0		

Table 4.46: Donations

Q22 First we have a question about donations. By donations we mean the charitable giving of money for social, ecclesiastical, cultural, or similar non-profit purposes without receiving any direct compensation in return. These can be larger amounts, but also sm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	75.9	100.0	100.0
Missing	Drop-out	7	24.1		
Total		29	100.0		

Table 4.47: Donations - amount

Q23 What was the total amount you (SEK)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	200	2	6.9	9.1	9.1
	300	1	3.4	4.5	13.6
	500	1	3.4	4.5	18.2
	1000	3	10.3	13.6	31.8
	1500	1	3.4	4.5	36.4
	2000	3	10.3	13.6	50.0
	2400	1	3.4	4.5	54.5
	3000	1	3.4	4.5	59.1
	3500	1	3.4	4.5	63.6
	3600	1	3.4	4.5	68.2
	4000	2	6.9	9.1	77.3
	5000	1	3.4	4.5	81.8
	6000	1	3.4	4.5	86.4
	10560	1	3.4	4.5	90.9
	12000	1	3.4	4.5	95.5
	15000	1	3.4	4.5	100.0
	Total	22	75.9	100.0	
Missing	Drop-out	7	24.1		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.48: Donations – non-financial

Q24 There are donations that are not financial, for example blood donations. Have you donated blood in the past 10 years?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	13.8	18.2	18.2
	No	18	62.1	81.8	100.0
	Total	22	75.9	100.0	
Missing	Drop-out	7	24.1		
Total		29	100.0		

Table 4.49: Trust – in general

Q26 Do you think most people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Or would try to be fair to you?	22	75.9	100.0	100.0
Missing	Drop-out	7	24.1		
Total		29	100.0		

Table 4.50: Helpfulness

Q27 Would you say that most of the time people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Try to be helpful	20	69.0	90.9	90.9
	Or only pursue their own interests?	2	6.9	9.1	100.0
	Total	22	75.9	100.0	
Missing	Drop-out	7	24.1		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.51: Active community involvement

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q4a Invest money in a project run by your energy community	25	2	5	3.52	1.085
Q4b Attend community meetings	25	2	5	4.52	.872
Q4c Share your knowledge or experience related to energy with other members of the energy community	24	2	5	3.88	.992
Q4d Promote your energy community to potential new energy community members	25	2	5	4.60	.866
Q4e Participate in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	25	2	5	4.24	1.052
Q4f Participate in steering your energy community (like decision-making about investment or participation in community management board)	25	1	5	3.44	1.193
Valid N (listwise)	24				

Measured on a 5-point scale: 1 - definitely not willing 2 - probably not willing 3 - maybe yes, maybe not 4 - probably willing, 5 – definitely willing

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.52: Identification with the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q5a: I identify myself with our energy community	25	3	5	4.16	.746
Q5b I feel committed to our energy community	25	2	5	4.28	.737
Q5c I am proud to be a member of our energy community	25	3	5	4.40	.764
Q5d Being a member of our energy community is a central part of how I see myself	25	1	5	3.40	1.080
Valid N (listwise)	25				

Measured on the 5-point (dis)agreement scale: 1— strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.53: Trust within the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q6a I can rely on the leaders of our energy community to handle important issues on behalf of the community	25	2	5	4.12	.666
Q6b I am confident that potential problems with the energy-related technology used in our energy community will be resolved efficiently	22	3	5	4.05	.575
Q6c Most members respect rules set out by our energy community	23	3	5	4.09	.417
Q6d Some members are part of our energy community for their personal benefits only	21	1	3	2.29	.784
Q6e Some members are contributing much less to our energy community than I do	22	1	4	3.05	.844
Q6f Our energy community is transparently sharing information among its members	24	3	5	4.21	.658
Valid N (listwise)	20				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.54: Empowerment

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q7a Formal community rules enable members to influence the organisational structure of the energy community	25	2	5	3.48	.714
Q7b I feel that our local government is supportive of the activities of our energy community	25	2	4	3.16	.554
Q7c I can influence financial decisions or investments in our energy community	25	3	5	3.72	.678
Q7d As a member of the energy community I feel I could influence the energy policy in my country	25	1	5	2.96	1.060
Q7e Since joining the energy community, I feel more connected with the people in my local community	25	2	5	3.92	.759
Q7f Since joining the energy community, I feel I can actually influence the transition to clean energy in our society	25	1	5	3.40	.913
Valid N (listwise)	25				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.55: Values

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q8a As a member of our energy community I feel like a trendsetter of a sustainable future	24	2	5	3.67	.761
Q8b I feel proud being a member of our energy community	23	3	5	4.35	.775
Q8c As a community member I get electricity for a better price	24	1	5	2.38	.970
Q8d As a community member I better understand the importance of clean energy for the environment	24	2	5	3.58	.929
Q8e As a community member I have received a lot of useful advice regarding energy consumption in my home	24	1	5	3.13	.850
Q8f Participation in our energy community helps me fulfil responsibilities for future generations	24	2	5	3.83	.702
Q8g Participation in our energy community allows me to express my environmental concern	24	2	5	3.58	.881
Q8h Participation in our energy community strengthens my social solidarity	24	3	5	4.00	.590
Q8i Our energy community improves the image of the municipality	24	3	5	3.58	.654
Q8j Participation in our energy community gives me a better chance to interact with like-minded people.	24	2	5	3.96	.908
Q8k People I care about would approve of my participation in our energy community	24	3	5	3.87	.797

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Valid N (listwise)	23

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 4.56: Motives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q9a important are the followin: To reduce electricity costs in the household	24	1	4	1.75	.944
Q9b To invest and earn money	24	1	3	1.13	.448
Q9c To reduce fossil fuels consumption	24	1	4	2.87	.947
Q9d To do things together with other community members	24	1	4	3.25	.897
Q9e To be part of a movement addressing climate change	24	1	4	3.08	.929
Q9f To engage with the new technologies	24	1	4	2.46	.977
Q9g To be independent from large power companies	24	1	4	2.25	.944
Q9h To contribute to my energy security	24	1	4	2.25	1.032
Valid N (listwise)	24				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.57: Incentives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q11a Opportunity to receive an energy subsidy	24	1	3	1.25	.608
Q11b Opportunity for energy tax deduction	24	1	3	1.25	.608
Q11c Encouragement from family or friends	24	1	4	1.83	1.007
Q11d Special offer from a company	24	1	3	1.21	.588
Q11e Positive experience of other members of this or other energy communities	24	1	4	2.13	1.116
Q11f Direct invitation to join the energy community	23	1	3	1.65	.885
Valid N (listwise)	23				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.58: Challenges

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q13a Need to learn how to use a new technology	20	1	4	1.65	.988
Q13b Problems installing equipment	20	1	4	1.75	1.070
Q13c Bureaucratic problems	20	1	4	1.75	.967
Q13d Uncertainty regarding liability and legal affairs	21	1	4	1.81	.814
Q13e Lack of support from other household members	21	1	4	1.67	1.155
Q13f Lack of cooperation of other community members	20	1	4	1.60	.940
Q13g Lack of information about the project	21	1	4	1.62	.921
Q13h Expenses related to the project	19	1	4	1.53	.905
Q13i Doubts over financial benefits	19	1	4	1.37	.761
Q13j Doubts about the performance of technology (solar panels or wind turbines)	20	1	4	1.45	.759
Valid N (listwise)	19				

Measured on the 4-point scale: 1 – not a challenge at all, 2 - a small challenge, 3 - a moderate challenge, 4 – a large challenge

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.59: Concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q14a Costs of maintaining the technology	21	1	4	1.48	.750
Q14b Toxicity of materials in solar panels	6	1	3	1.50	.837
Q14c Flammability of materials in solar panels	6	1	3	1.33	.816
Q14d Impact of materials used for solar energy production technology on ecosystem	6	1	4	1.83	1.169
Q14e Impact of materials used for wind energy production technology on ecosystem	8	1	2	1.50	.535
Q14f Visual impact of solar panels	6	1	1	1.00	.000
Q14g Visual impact of wind turbines	8	1	2	1.25	.463
Q14h Noise caused by wind turbines	8	1	3	1.50	.756
Q14i Problems with recycling solar panel materials	6	1	4	2.00	1.265
Valid N (listwise)	5				

Measured on the 4-point scale: 1 – not at all concerned, 2 - slightly concerned, 3 - quite concerned, 4 – very concerned

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.61: Social norms

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q16a Many of my peers use electricity generated from renewable energy sources	23	2	5	3.43	.662
Q16b It is our responsibility to move to renewable energy sources	23	3	5	4.61	.583
Q16c Public institutions should be a role model in switching to clean energy sources	23	4	5	4.70	.470
Q16d Clean energy communities are the future of energy provision	23	3	5	4.00	.674
Q16e Clean energy communities make energy more affordable for everyone	23	3	4	3.43	.507
Q16f Not everyone can afford to join a clean energy community	23	2	5	3.65	1.027
Valid N (listwise)	23				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.62: Attitudes toward clean energy – in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q17a Energy efficiency and conservation just isn't that important to me	23	1	5	2.13	1.140
Q17b When home, I take actions to conserve energy	23	2	5	4.13	.815
Q17c There is very little I can do personally to conserve energy in my home	23	1	5	2.35	.982
Q17d I am not willing to conserve energy at home if that comes at any cost to my comfort	23	1	4	2.13	.968
Q17e Energy efficiency is vital to our national economy	23	2	5	3.78	.736
Q17f The government has a strong role to play in our nation's energy efficiency and conservation policies	23	3	5	4.39	.656
Q17g Clean energy is more important than reliable and affordable energy	23	2	5	3.26	.864
Q17h Becoming an energy independent country is vital to our economic success and national security	23	3	5	3.78	.600
Valid N (listwise)	23				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.63: Attitudes toward clean energy - concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q18a That there may be power cuts in your country	23	1	4	2.43	.788
Q18b That energy might become too expensive for many people in your country	23	1	4	2.57	.662
Q18c Your country being too dependent on energy imports from other countries	23	2	4	3.00	.739
Q18d Your country being too dependent on using energy generated by fossil fuels such as oil, gas and coal?	23	2	5	3.74	.752
Q18e Your country being too dependent on using nuclear energy?	23	2	5	3.57	.896
Valid N (listwise)	23				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 4.64: Energy literacy in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q19 In general, how informed do you feel about energy issues?	23	1	3	2.13	.694
Valid N (listwise)	23				

Measured on the 4-point scale: 1 – very well informed, 2 - fairly well informed, 3 - not very well informed, 4 – not at all well informed

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.65: Trust

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q25a In general, you can trust people	22	1	4	3.14	.640
Q25b Nowadays you cannot rely on anyone	22	1	2	1.27	.456
Q25c When dealing with strangers, it is better to be careful before you trust them	22	1	3	2.23	.752
Valid N (listwise)	22				

Measured on the 4-point scale: 1-– strongly disagree, 2 - disagree, 3 - agree, 4 – strongly agree

Table 4.66: Individuality vs communality

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q28a I`d rather depend on myself than others	22	1	9	6.14	2.416
Q28b I rely on myself most of the time, and rarely rely on others	22	1	7	4.00	1.512
Q28c I often do “my own thing”	22	3	9	6.32	1.810
Q28d I feel good when I cooperate with others	22	5	9	7.77	1.541
Q28e If a coworker gets a prize, I would feel proud	21	6	9	7.71	1.007
Q28f The well-being of my coworkers is important to me	22	5	9	8.18	1.006
Q28g To me, pleasure is spending time with others	22	3	9	6.68	1.810
Q28h My personal identity, independent of others, is very important to me	22	1	9	5.36	2.421
Valid N (listwise)	21				

Measured on the 9-point scale: 1- do not agree at all, 9 – do fully agree

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.67: Age

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	20	31	77	54.50	15.275
Valid N (listwise)	20				

Table 4.68: Current dwelling

B1 Does your household own or rent the dwelling you are currently living in?

		Frequency	Percent
Missing	System	29	100.0

Measured on the 4-point scale: 1- me or another household 2 – I/we rent the dwelling, 3 – the dwelling is rent-free but not owned by me or another household member, 4 other, specify

Table 4.69: Type of building

B2 In what kind of building do you live?

		Frequency	Percent
Missing	System	29	100.0

Measured on the 3-point scale: 1- detached home 2 – semi-detached home, 3 – apartment building

Table 4.70: Type of area

B3 Which of the following best describes the area where you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A town or suburb	18	62.1	81.8	81.8
	Rural area	4	13.8	18.2	100.0
	Total	22	75.9	100.0	
Missing	Drop-out	7	24.1		
Total		29	100.0		

Measured on the 3-point scale: 1- a city 2 – a town or suburb, 3 – rural area

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.71: Number of people in household

B4a How many people live in your h

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	13.8	18.2	18.2
	2	8	27.6	36.4	54.5
	3	5	17.2	22.7	77.3
	4	4	13.8	18.2	95.5
	5	1	3.4	4.5	100.0
	Total	22	75.9	100.0	
Missing	Drop-out	7	24.1		
Total		29	100.0		

Table 4.72: Number of children under 18 years of age in household

B4b How many children under the ag

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.9	25.0	25.0
	2	5	17.2	62.5	87.5
	3	1	3.4	12.5	100.0
	Total	8	27.6	100.0	
Missing	None of the above	10	34.5		
	Drop-out	7	24.1		
	Skipped question (IF logic)	4	13.8		
	Total	21	72.4		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.73: Number of children - all

B4c How many children do you have,

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.3	15.8	15.8
	2	8	27.6	42.1	57.9
	3	6	20.7	31.6	89.5
	4	2	6.9	10.5	100.0
	Total	19	65.5	100.0	
Missing	None of the above	3	10.3		
	Drop-out	7	24.1		
	Total	10	34.5		
Total		29	100.0		

Table 4.74: Gender

B5 What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	7	24.1	33.3	33.3
	Female	14	48.3	66.7	100.0
	Total	21	72.4	100.0	
Missing	Drop-out	7	24.1		
	Unanswered question	1	3.4		
	Total	8	27.6		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.75: Education

B7 What is the highest level of education that you have attained?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Short-cycle tertiary education (ISCED 5)	4	13.8	18.2	18.2
	Bachelor's or equivalent level (ISCED 6)	7	24.1	31.8	50.0
	Master's or equivalent level (ISCED 7)	7	24.1	31.8	81.8
	Doctoral or equivalent level (ISCED 8)	4	13.8	18.2	100.0
	Total	22	75.9	100.0	
Missing	Drop-out	7	24.1		
Total		29	100.0		

Measured on the 7-point scale: 1- no formal education (ISCED 0) 2 – primary or lower secondary education (ISCED 1-2), 3 – upper secondary or post-secondary non-tertiary education (ISCED 3-4), 4 - short-cycle tertiary education (ISCED 5), 5 – Bachelor's or equivalent level (ISCED 6), 6 – Master's or equivalent level (ISCED 7), 7 – Doctoral or equivalent level (ISCED 8)

Table 4.76: Employment – type

B8 Which of the following best describes your employment situation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed or self-employed	16	55.2	72.7	72.7
	Retired	4	13.8	18.2	90.9
	Student or pupil	1	3.4	4.5	95.5
	Housework and caretaking responsibilities	1	3.4	4.5	100.0
	Total	22	75.9	100.0	
Missing	Drop-out	7	24.1		
Total		29	100.0		

Measured on the 6-point scale: 1- employed or self-employed 2 – unemployed, 3 – retired, 4 – student or pupil, 5 – housework and caretaking responsibilities, 6 - other

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.77: Employment - hours

B9 Are you...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Working full-time	12	41.4	75.0	75.0
	Working part-time, with at least 20 hours per week	4	13.8	25.0	100.0
	Total	16	55.2	100.0	
Missing	Drop-out	7	24.1		
	Skipped question (IF logic)	6	20.7		
	Total	13	44.8		
Total		29	100.0		

Measured on the 4-point scale: 1- working full-time 2 – working part-time, with at least 20 hours per week, 3 – working part-time or hourly with less than 20 hours per week, 4 – other, specify

Table 4.78: Job related to energy production or supply

B10 Is your current job related to the field of energy production or supply?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	55.2	100.0	100.0
Missing	Drop-out	7	24.1		
	Skipped question (IF logic)	6	20.7		
	Total	13	44.8		
Total		29	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 4.79: Household total net monthly income

B11 Finally, could you please indicate what range matches your household's total net monthly income? If you don't know this exactly, please give your best estimate (SEK).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10 000 to 14 999	2	6.9	9.5	9.5
	15 000 to 19 999	2	6.9	9.5	19.0
	20 000 to 24 999	1	3.4	4.8	23.8
	25 000 to 29 999	5	17.2	23.8	47.6
	30 000 to 34 999	2	6.9	9.5	57.1
	40 000 to 44 999	1	3.4	4.8	61.9
	50 000 to 54 999	2	6.9	9.5	71.4
	60 000 to 64 999	2	6.9	9.5	81.0
	65 000 to 69 999	3	10.3	14.3	95.2
	70 000 or more	1	3.4	4.8	100.0
	Total	21	72.4	100.0	
Missing	Refused	1	3.4		
	Drop-out	7	24.1		
	Total	8	27.6		
Total		29	100.0		

Measured on the 15-point scale: 1 – less than 5.000, 2- 5.000 to 9.999, 3 – 10.000 to 14.999, 4 – 15.000 to 19.999, 5 – 20.000 to 24.999, 6 – 25.000 to 29.999, 7 – 30.000 to 34.999, 8 – 35.000 to 39.999, 9 – 40.000 to 44.999, 10 – 45.000 to 49.999, 11 – 50.000 to 54.999, 12 – 55.000 to 59.999, 13 – 60.000 to 64.999, 14 – 65.000 to 69.999, 15 – 70.000 or more

5. GEN-I JESENICE, SLOVENIA

Table 5.1: Time of joining the CEC (month)

Q1a When did your household join Y (month:)

		Frequency	Percent
Missing	Drop-out	1	12.5
	Skipped question (IF logic)	7	87.5
	Total	8	100.0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.2: Time of joining the CEC (year)

Q1b When did your household join Y (year:)

		Frequency	Percent
Missing	Drop-out	1	12.5
	Skipped question (IF logic)	7	87.5
	Total	8	100.0

Table 5.3: Which technologies the CEC uses – own solar panels

Q2a Own solar panels to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	85.7	85.7
	selected	1	12.5	14.3	100.0
	Total	7	87.5	100.0	
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.4: Which technologies the CEC uses – solar panels shared by the CEC

Q2b Solar panels shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	1	12.5	14.3	14.3
	selected	6	75.0	85.7	100.0
	Total	7	87.5	100.0	
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.5: Which technologies the CEC uses – wind turbines shared by the CEC

Q2c Wind turbines shared by the community to generate electricity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	7	87.5	100.0	100.0
Missing	Drop-out	1	12.5		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.6: Which technologies the CEC uses – local hydroelectric power

Q2d Local hydroelectric power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	7	87.5	100.0	100.0
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.7: Which technologies the CEC uses – smart power meter

Q2e Smart power meter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	7	87.5	100.0	100.0
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.8: Which technologies the CEC uses – heat pump

Q2f Heat pump

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	2	25.0	28.6	28.6
	selected	5	62.5	71.4	100.0
	Total	7	87.5	100.0	
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.9: Which technologies the CEC uses – battery for energy storage

Q2g Battery for energy storage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	7	87.5	100.0	100.0
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.10: Which technologies the CEC uses – electric vehicle

Q2h Electric vehicle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	7	87.5	100.0	100.0
Missing	Drop-out	1	12.5		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.11: Which technologies the CEC uses – other electricity generation or management technology

Q2i Other electricity generation or management technology (please, specify):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	7	87.5	100.0	100.0
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.12: Have you ever done any of the following – invested money in a CEC project

Q3a Invested money in a project run by your energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	87.5	100.0	100.0
Missing	Drop-out	1	12.5		
Total		8	100.0		

Table 5.13: Have you ever done any of the following – attended a CEC meeting

Q3b Attended a community meeting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	50.0	66.7	66.7
	No	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	1	12.5		
	Unanswered question	1	12.5		
	Total	2	25.0		
Total		8	100.0		

Table 5.14: Have you ever done any of the following – shared your knowledge/experience with CEC members

Q3c Shared your knowledge or experience related to energy with other members of the energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	25.0	40.0	40.0
	No	3	37.5	60.0	100.0
	Total	5	62.5	100.0	
Missing	Drop-out	1	12.5		
	Unanswered question	2	25.0		
	Total	3	37.5		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.15: Have you ever done any of the following – promoted your CEC to other potential new members

Q3d Promoted your energy community to potential new energy community members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	62.5	83.3	83.3
	No	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	1	12.5		
	Unanswered question	1	12.5		
	Total	2	25.0		
Total		8	100.0		

Table 5.16: Have you ever done any of the following – participated your CEC with minor organizational responsibilities

Q3e Participated in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	50.0	66.7	66.7
	No	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	1	12.5		
	Unanswered question	1	12.5		
	Total	2	25.0		
Total		8	100.0		

Table 5.17: Have you ever done any of the following – participated steering your CEC

Q3f Participated in steering your energy community (like decision-making about investments or participation in community management board)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	37.5	50.0	50.0
	No	3	37.5	50.0	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	1	12.5		
	Unanswered question	1	12.5		
	Total	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.18: Personal involvement in deciding to join or not

Q10 Were you personally involved in making the decision to join the energy community or was this decision made by others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I was personally involved in deciding to join the energy community	4	50.0	66.7	66.7
	This decision was made entirely by others	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.19: Sources of information about energy issues – TV or radio

Q20a News or documentary programmes on TV or radio

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	1	12.5	16.7	16.7
	selected	5	62.5	83.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.20: Sources of information about energy issues – internet

Q20b Searching on the internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	1	12.5	16.7	16.7
	selected	5	62.5	83.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.21: Sources of information about energy issues – energy companies or providers

Q20c Energy companies or energy providers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	2	25.0	33.3	33.3
	selected	4	50.0	66.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Total	8	100.0	

Table 5.22: Sources of information about energy issues – newspapers

Q20d Newspapers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	3	37.5	50.0	50.0
	selected	3	37.5	50.0	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.23: Sources of information about energy issues – magazines

Q20e Magazines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	2	25.0	33.3	33.3
	selected	4	50.0	66.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.24: Sources of information about energy issues – national government or local council

Q20f Information from national government or my local council

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	3	37.5	50.0	50.0
	selected	3	37.5	50.0	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.25: Sources of information about energy issues – charities and NGOs

Q20g Charities and NGOs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.26: Sources of information about energy issues – CEC newsletters

Q20h Energy community newsletters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.27: Sources of information about energy issues – events organized by CECs

Q20i Workshop, webinars or other events organized by our energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	62.5	83.3	83.3
	selected	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.28: Sources of information about energy issues – my job

Q20j My job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	62.5	83.3	83.3
	selected	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.29: Sources of information about energy issues – other

Q20k Other:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.30: Potential sources of information about energy – a high school teacher

Q21a A high school teacher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	62.5	83.3	83.3
	selected	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.31: Potential sources of information about energy – textbooks

Q21b Textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.32: Potential sources of information about energy – friends or classmates

Q21c Friends or classmates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	62.5	83.3	83.3
	selected	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.33: Potential sources of information about energy – family

Q21d Family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.34: Potential sources of information about energy – search engines

Q21e Search engines (e.g. Google search)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	2	25.0	33.3	33.3
	selected	4	50.0	66.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.35: Potential sources of information about energy – scholarly research database

Q21f Scholarly research database

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	62.5	83.3	83.3
	selected	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.36: Potential sources of information about energy – encyclopaedias

Q21g Online or print encyclopaedias (e.g. Wikipedia)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	4	50.0	66.7	66.7
	selected	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.37: Potential sources of information about energy – social media, non-professional

Q21h Social media feed; non-professional online profile pages (e.g. friends, family, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	4	50.0	66.7	66.7
	selected	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.38: Potential sources of information about energy – social media, professional

Q21i Social media; professional online profile pages (e.g. industry, non-profit, or subject expert)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	62.5	83.3	83.3
	selected	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.39: Potential sources of information about energy – blogs or forums

Q21j Blogs or forums

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	4	50.0	66.7	66.7
	selected	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.40: Potential sources of information about energy – government websites

Q21k Government websites (e.g. Department of Energy)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	4	50.0	66.7	66.7
	selected	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.41: Potential sources of information about energy – industry websites

Q21l Industry websites (e.g., utility, gas, renewables, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	3	37.5	50.0	50.0
	selected	3	37.5	50.0	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.42: Potential sources of information about energy – non-profit agencies

Q21m Non-profit agencies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.43: Potential sources of information about energy – CEC

Q21n My energy community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	2	25.0	33.3	33.3
	selected	4	50.0	66.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.44: Potential sources of information about energy – consumer organizations

Q21o Consumer associations/organizations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	5	62.5	83.3	83.3
	selected	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.45: Potential sources of information about energy – other

Q21p Other, please specify:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not selected	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.46: Donations

Q22 First we have a question about donations. By donations we mean the charitable giving of money for social, ecclesiastical, cultural, or similar non-profit purposes without receiving any direct compensation in return. These can be larger amounts, but also sm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	37.5	60.0	60.0
	No	2	25.0	40.0	100.0
	Total	5	62.5	100.0	
Missing	Drop-out	2	25.0		
	Unanswered question	1	12.5		
	Total	3	37.5		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.47: Donations - amount

Q23 What was the total amount you (EUR)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	400	1	10.0	33.3	33.3
	500	1	10.0	33.3	66.7
	1400	1	10.0	33.3	100.0
	Total	3	30.0	100.0	
Missing	Drop-out	2	20.0		
	Skipped question (IF logic)	5	50.0		
	Total	7	70.0		
Total		10	100.0		

Table 5.48: Donations – non-financial

Q24 There are donations that are not financial, for example blood donations. Have you donated blood in the past 10 years?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	12.5	20.0	20.0
	No	4	50.0	80.0	100.0
	Total	5	62.5	100.0	
Missing	Drop-out	2	25.0		
	Unanswered question	1	12.5		
	Total	3	37.5		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.49: Trust – in general

Q26 Do you think most people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Would take advantage of you if they had the opportunity	4	50.0	66.7	66.7
	Or would try to be fair to you?	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.50: Helpfulness

Q27 Would you say that most of the time people…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Try to be helpful	3	37.5	50.0	50.0
	Or only pursue their own interests?	3	37.5	50.0	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.51: Active community involvement

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q4a Invest money in a project run by your energy community	5	3	5	4.40	.894
Q4b Attend community meetings	6	4	5	4.33	.516
Q4c Share your knowledge or experience related to energy with other members of the energy community	6	2	5	3.83	1.169
Q4d Promote your energy community to potential new energy community members	5	4	5	4.40	.548
Q4e Participate in your energy community with minor organizational responsibilities (like organising meetings or informing other members about community events)	5	3	5	4.20	.837
Q4f Participate in steering your energy community (like decision-making about investment or participation in community management board)	5	3	5	4.20	.837
Valid N (listwise)	5				

Measured on a 5-point scale: 1 - definitely not willing 2 - probably not willing 3 - maybe yes, maybe not 4 - probably willing, 5 – definitely willing

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.52: Identification with the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q5a I identify myself with our energy community	6	4	5	4.33	.516
Q5b I feel committed to our energy community	6	4	5	4.33	.516
Q5c I am proud to be a member of our energy community	6	4	5	4.50	.548
Q5d Being a member of our energy community is a central part of how I see myself	6	3	5	3.83	.753
Valid N (listwise)	6				

Measured on the 5-point (dis)agreement scale: 1— strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.53: Trust within the CEC

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q6a I can rely on the leaders of our energy community to handle important issues on behalf of the community	6	4	5	4.50	.548
Q6b I am confident that potential problems with the energy-related technology used in our energy community will be resolved efficiently	6	4	5	4.50	.548
Q6c Most members respect rules set out by our energy community	6	4	5	4.33	.516
Q6d Some members are part of our energy community for their personal benefits only	6	1	4	2.33	1.033
Q6e Some members are contributing much less to our energy community than I do	5	2	4	2.60	.894
Q6f Our energy community is transparently sharing information among its members	6	3	5	4.17	.753
Valid N (listwise)	5				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.54: Empowerment

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q7a Formal community rules enable members to influence the organisational structure of the energy community	6	3	4	3.50	.548
Q7b I feel that our local government is supportive of the activities of our energy community	6	2	4	3.00	.894
Q7c I can influence financial decisions or investments in our energy community	6	3	5	3.83	.753
Q7d As a member of the energy community I feel I could influence the energy policy in my country	6	2	4	3.17	.753
Q7e: Since joining the energy community, I feel more connected with the people in my local community	6	3	5	3.50	.837
Q7f Since joining the energy community, I feel I can actually influence the transition to clean energy in our society	6	3	5	3.67	.816
Valid N (listwise)	6				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.55: Values

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q8a As a member of our energy community I feel like a trendsetter of a sustainable future	5	3	5	4.00	.707
Q8b I feel proud being a member of our energy community	5	3	5	4.00	.707
Q8c As a community member I get electricity for a better price	5	3	5	4.00	.707
Q8d: As a community member I better understand the importance of clean energy for the environment	5	3	5	4.20	.837
Q8e As a community member I have received a lot of useful advice regarding energy consumption in my home	5	3	5	4.00	.707
Q8f Participation in our energy community helps me fulfil responsibilities for future generations	5	4	5	4.40	.548
Q8g Participation in our energy community allows me to express my environmental concern	5	4	5	4.20	.447
Q8h Participation in our energy community strengthens my social solidarity	5	3	5	3.80	.837
Q8i Our energy community improves the image of the municipality	5	3	5	4.00	1.000
Q8j Participation in our energy community gives me a better chance to interact with like-minded people.	5	3	5	3.80	.837
Q8k People I care about would approve of my participation in our energy community	5	3	5	4.00	.707

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Valid N (listwise)	5

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 5.56: Motives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q9a To reduce electricity costs in the household	6	3	4	3.33	.516
Q9b To invest and earn money	6	1	3	2.17	.753
Q9c To reduce fossil fuels consumption	6	3	4	3.50	.548
Q9d To do things together with other community members	6	3	4	3.17	.408
Q9e To be part of a movement addressing climate change	6	2	4	3.00	.632
Q9f To engage with the new technologies	6	3	4	3.33	.516
Q9g To be independent from large power companies	6	3	4	3.50	.548
Q9h To contribute to my energy security	6	3	4	3.50	.548
Valid N (listwise)	6				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.57: Incentives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q11a Opportunity to receive an energy subsidy	4	1	4	2.50	1.291
Q11b Opportunity for energy tax deduction	4	2	4	2.75	.957
Q11c Encouragement from family or friends	3	1	3	2.00	1.000
Q11d Special offer from a company	4	2	3	2.50	.577
Q11e Positive experience of other members of this or other energy communities	4	1	3	2.50	1.000
Q11f Direct invitation to join the energy community	4	1	3	2.25	.957
Valid N (listwise)	3				

Measured on the 4-point scale: 1 – not at all important, 2 - slightly important, 3 - quite important, 4 – very important

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.58: Challenges

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q13a Need to learn how to use a new technology	6	1	4	2.33	1.506
Q13b Problems installing equipment	5	1	3	2.00	1.000
Q13c Bureaucratic problems	5	3	3	3.00	.000
Q13d Uncertainty regarding liability and legal affairs	5	1	3	2.20	1.095
Q13e Lack of support from other household members	5	1	4	2.60	1.140
Q13f Lack of cooperation of other community members	5	1	4	2.60	1.140
Q13g Lack of information about the project	5	2	3	2.60	.548
Q13h Expenses related to the project	5	2	3	2.60	.548
Q13i Doubts over financial benefits	4	1	3	2.25	.957
Q13j Doubts about the performance of technology (solar panels or wind turbines)	6	1	4	2.00	1.265
Valid N (listwise)	4				

Measured on the 4-point scale: 1 – not a challenge at all, 2 - a small challenge, 3 - a moderate challenge, 4 – a large challenge

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.59: Concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q14a Costs of maintaining the technology	6	1	3	1.67	.816
Q14b Toxicity of materials in solar panels	6	1	2	1.33	.516
Q14c Flammability of materials in solar panels	6	1	3	1.83	.753
Q14d Impact of materials used for solar energy production technology on ecosystem	6	1	3	1.67	.816
Q14e Impact of materials used for wind energy production technology on ecosystem	0				
Q14f Visual impact of solar panels	6	1	2	1.33	.516
Q14g Visual impact of wind turbines	0				
Q14h Noise caused by wind turbines	0				
Q14i Problems with recycling solar panel materials	6	1	3	1.83	.753
Valid N (listwise)	0				

Measured on the 4-point scale: 1 – not at all concerned, 2 - slightly concerned, 3 - quite concerned, 4 – very concerned

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.61: Social norms

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q16a Many of my peers use electricity generated from renewable energy sources	6	2	4	3.17	.753
Q16b It is our responsibility to move to renewable energy sources	6	3	5	4.33	.816
Q16c Public institutions should be a role model in switching to clean energy sources	6	2	5	4.33	1.211
Q16d Clean energy communities are the future of energy provision	6	2	5	4.17	1.329
Q16e Clean energy communities make energy more affordable for everyone	6	3	5	4.50	.837
Q16f Not everyone can afford to join a clean energy community	6	1	3	2.50	.837
Valid N (listwise)	6				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.62: Attitudes toward clean energy – in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q17a Energy efficiency and conservation just isn't that important to me	6	1	4	2.33	1.033
Q17b When home, I take actions to conserve energy	6	3	5	4.17	.753
Q17c There is very little I can do personally to conserve energy in my home	6	1	4	2.50	1.049
Q17d I am not willing to conserve energy at home if that comes at any cost to my comfort	6	1	3	1.83	.753
Q17e Energy efficiency is vital to our national economy	6	3	5	4.00	.894
Q17f The government has a strong role to play in our nation's energy efficiency and conservation policies	6	3	4	3.33	.516
Q17g Clean energy is more important than reliable and affordable energy	6	3	5	3.67	.816
Q17h Becoming an energy independent country is vital to our economic success and national security	6	3	5	4.00	.894
Valid N (listwise)	6				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.63: Attitudes toward clean energy - concerns

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q18a That there may be power cuts your country	6	2	4	2.83	.753
Q18b That energy might become too expensive for many people in your country	6	2	4	2.83	.753
Q18c Your country being too dependent on energy imports from other countries	6	3	5	3.50	.837
Q18d Your country being too dependent on using energy generated by fossil fuels such as oil, gas and coal?	6	3	5	3.67	.816
Q18e Your country being too dependent on using nuclear energy?	6	3	5	3.67	.816
Valid N (listwise)	6				

Measured on the 5-point (dis)agreement scale: 1-– strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 – strongly agree

Table 5.64: Energy literacy in general

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q19 In general, how informed do you feel about energy issues?	6	1	3	2.00	.632
Valid N (listwise)	6				

Measured on the 4-point scale: 1 – very well informed, 2 - fairly well informed, 3 - not very well informed, 4 – not at all well informed

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.65: Trust

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q25a In general, you can trust people	6	2	3	2.33	.516
Q25b Nowadays you cannot rely on anyone	6	2	3	2.17	.408
Q25c When dealing with strangers, it is better to be careful before you trust them	6	1	4	2.83	.983
Valid N (listwise)	6				

Measured on the 4-point scale: 1-– strongly disagree, 2 - disagree, 3 - agree, 4 – strongly agree

Table 5.66: Individuality vs communality

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q28a I`d rather depend on myself than others	6	3	9	6.50	2.345
Q28b I rely on myself most of the time, and rarely rely on others	6	5	9	7.00	1.549
Q28c I often do “my own thing”	6	5	8	6.33	1.366
Q28d I feel good when I cooperate with others	6	5	9	7.50	1.761
Q28e If a coworker gets a prize, I would feel proud	6	5	9	7.83	1.835
Q28f The well-being of my coworkers is important to me	6	6	9	7.67	1.506
Q28g To me, pleasure is spending time with others	6	6	9	7.67	1.366
Q28h My personal identity, independent of others, is very important to me	6	5	9	7.83	1.602
Valid N (listwise)	6				

Measured on the 9-point scale: 1- do not agree at all, 9 – do fully agree

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.67: Age

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	5	40	69	50.80	12.357
Valid N (listwise)	5				

Table 5.68: Current dwelling

B1 Does your household own or rent the dwelling you are currently living in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Me or another household member own the dwelling	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

Measured on the 4-point scale: 1- me or another household 2 – I/we rent the dwelling, 3 – the dwelling is rent-free but not owned by me or another household member, 4 other, specify

Table 5.69: Type of building

B2 In what kind of building do you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Apartment building	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

Measured on the 3-point scale: 1- detached home 2 – semi-detached home, 3 – apartment building

Table 5.70: Type of area

B3 Which of the following best describes the area where you live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A city	6	75.0	100.0	100.0
Missing	Drop-out	2	25.0		
Total		8	100.0		

Measured on the 3-point scale: 1- a city 2 – a town or suburb, 3 – rural area

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.71: Number of people in household

B4a How many people live in your h

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	12.5	16.7	16.7
	3	2	25.0	33.3	50.0
	4	2	25.0	33.3	83.3
	5	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Table 5.72: Number of children under 18 years of age in household

B4b How many children under the ag

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	25.0	40.0	40.0
	2	2	25.0	40.0	80.0
	3	1	12.5	20.0	100.0
	Total	5	62.5	100.0	
Missing	None of the above	1	12.5		
	Drop-out	2	25.0		
	Total	3	37.5		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.73: Number of children - all

B4c How many children do you have,

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	12.5	20.0	20.0
	2	2	25.0	40.0	60.0
	3	2	25.0	40.0	100.0
	Total	5	62.5	100.0	
Missing	Drop-out	2	25.0		
	Unanswered question	1	12.5		
	Total	3	37.5		
Total		8	100.0		

Table 5.74: Gender

B5 What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	4	50.0	66.7	66.7
	Female	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.75: Education

B7 What is the highest level of education that you have attained?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upper secondary or post-secondary non-tertiary education (ISCED 3-4)	4	50.0	66.7	66.7
	Short-cycle tertiary education (ISCED 5)	1	12.5	16.7	83.3
	Master's or equivalent level (ISCED 7)	1	12.5	16.7	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Measured on the 7-point scale: 1- no formal education (ISCED 0) 2 – primary or lower secondary education (ISCED 1-2), 3 – upper secondary or post-secondary non-tertiary education (ISCED 3-4), 4 - short-cycle tertiary education (ISCED 5), 5 – Bachelor's or equivalent level (ISCED 6), 6 – Master's or equivalent level (ISCED 7), 7 – Doctoral or equivalent level (ISCED 8)

Table 5.76: Employment – type

B8 Which of the following best describes your employment situation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed or self-employed	4	50.0	66.7	66.7
	Retired	2	25.0	33.3	100.0
	Total	6	75.0	100.0	
Missing	Drop-out	2	25.0		
Total		8	100.0		

Measured on the 6-point scale: 1- employed or self-employed 2 – unemployed, 3 – retired, 4 – student or pupil, 5 – housework and caretaking responsibilities, 6 - other

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.77: Employment - hours

B9 Are you...

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Working full-time	4	50.0	100.0	100.0
Missing	Drop-out	2	25.0		
	Skipped question (IF logic)	2	25.0		
	Total	4	50.0		
Total		8	100.0		

Measured on the 4-point scale: 1- working full-time 2 – working part-time, with at least 20 hours per week, 3 – working part-time or hourly with less than 20 hours per week, 4 – other, specify

Table 5.78: Job related to energy production or supply

B10 Is your current job related to the field of energy production or supply?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	12.5	25.0	25.0
	No	3	37.5	75.0	100.0
	Total	4	50.0	100.0	
Missing	Drop-out	2	25.0		
	Skipped question (IF logic)	2	25.0		
	Total	4	50.0		
Total		8	100.0		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.

Table 5.79: Household total net monthly income

B11 Finally, could you please indicate what range matches your household's total net monthly income? If you don't know this exactly, please give your best estimate.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	500 to 999 €	3	30.0	42.9	42.9
	1.000 to 1.499 €	2	20.0	28.6	71.4
	1.500 to 1.999 €	1	10.0	14.3	85.7
	2.500 to 2.999 €	1	10.0	14.3	100.0
	Total	7	70.0	100.0	
Missing	Drop-out	3	30.0		
Total		10	100.0		

Measured on the 15-point scale: 1 – less than 500, 2- 500 to 999 3 – 1.000 to 1.499, 4 – 1.500 to 1.999, 5 – 2.000 to 2.499, 6 – 2.500 to 2.999, 7 – 3.000 to 3.499, 8 – 3.500 to 3.999, 9 – 4.000 to 4.499, 10 – 4.500 to 4.999, 11 – 5.000 to 5.499, 12 – 5.500 to 5.999, 13 – 6.000 to 6.499, 14 – 6.500 to 6.999, 15 – 7.000 or more

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.