

University of Groningen

## Involvement in bottom-up energy transitions

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DOI:  
[10.33612/diss.166748756](https://doi.org/10.33612/diss.166748756)

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*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2021

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*  
Goedkoop, F. (2021). *Involvement in bottom-up energy transitions: the role of local and contextual embeddedness*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.  
<https://doi.org/10.33612/diss.166748756>

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# 6

## CONCLUSION AND DISCUSSION

Many bottom-up community energy initiatives (CEIs) have been initiated in recent years. CEIs can be seen as a form of collective action, potentially generating collective benefits for the community and society at large next to private benefits. Successful collective action requires the cooperation of at least a substantial fraction of members. Thus, one of the main challenges of setting up a successful CEI is for the initiators to engage a sufficient number of community members to become involved, especially beyond the circle of other “green-minded enthusiasts” (Hoffman & High-Pippert, 2010; Seyfang & Haxeltine, 2012). Importantly, CEIs operate in local communities and are deemed promising for fostering participation since they can build on local social capital. Despite the emphasis on this promising “social dimension”, there is a lack of analytical scrutiny to support these statements and test the social mechanisms underlying them. In this thesis we therefore took a community-relational approach, scrutinizing the role local social embeddedness, such as the interpersonal relations within the community, community member’s social networks, and various forms of trust, plays for involvement in CEIs.

In addition, this thesis investigated shared ownership arrangements between local communities and commercial developers. While community initiatives are seen as promising in fostering the energy transition, they can be slow and ineffective exactly due to their localness and the relatively high organizational burden for community members. In response, there is increasing attention for hybrid arrangements connecting community actors with commercial parties outside of the community. Such arrangements presume that company and community actors have common goals, can form effective partnerships and negotiate fair outcomes. Yet, there is a dearth of research on such arrangements (Slee, 2015) and especially the role of trust and justice in shaping practice. Therefore, to complement the analysis on the role of community based social embeddedness and its potential for involvement, in this thesis we additionally investigated the potential of shared ownership arrangements.

In this thesis we shed light on both of these issues addressing the following research questions.

- I. To what extent is involvement in community energy initiatives by community members related to community-relational factors such as their involvement in the community, social networks, and various forms of trust?
- II. How are shared ownership arrangements perceived by communities, commercial developers, and intermediary actors and how does this potentially affect how such arrangements are formed?

This concluding chapter summarizes the answers this thesis has given to these questions. Section 6.1 presents the main findings from the four different empirical chapters. Section 6.2 provides the main conclusions and draws the theoretical and methodological implications. Section 6.3 suggests directions for future research. In section 6.4 the main practical implications are given for different stakeholders involved in community energy. Finally, in section 6.5 some concluding remarks are made.

## 6.1 Summary of the main findings

### 6.1.1 The role of community in understanding involvement in CEIs

In chapter 2 we examined whether people's perception of the environmental motivation of their community, and their involvement in the community (i.e., community identification and interpersonal contact) played a role in motivating people's initiative involvement (willingness to participate and attendance of an initiative meeting) next to people's personal motivation for sustainable energy. Results suggested that community factors play a role in explaining why people decide to become involved in CEIs. Yet, contrary to our theoretical reasoning, individuals' perception of the sustainable energy motivation of others in their community, did not increase initiative involvement when taking community involvement into account. We did find both identification with the community and interpersonal contact to be positively related to involvement in the CEI, when accounting for personal sustainable energy motivation. Finally, we did not find that identification with the community and interpersonal contact within the community enhance the effect of community sustainable energy motivation on initiative involvement.

### 6.1.2 A social network perspective: the role of social ties to initiators of CEIs

In Chapter 3 we investigated the role of social networks in influencing community members' decision whether to participate in a CEI, by incorporating different types of social contact between community members and CEI initiators. Results demonstrated that involvement in a CEI was positively associated with the existence and number of both strong and weak direct ties community members have to initiators. We found little evidence that extended ties are related to involvement in a CEI. While we found some support for complex contagion (Centola & Macy, 2007) based on the number of direct ties to initiators, contrary to our reasoning, having direct ties did not enhance the relation between extended ties and initiative involvement. Yet, results showed that community members with more associational memberships were more likely to get involved. This suggests that mere memberships of other associations within the community are more important than having extended ties via these associations with initiators.

### 6.1.3 Unpacking the role of interpersonal and institutional trust

Chapter 4 addressed the question of whether diverse forms of trust in different actors had differential effects on involvement in CEIs. A distinction was made between initiators and community members. First, for community members, we found little evidence that either institutional trust (both in the national government and the local municipality) or interpersonal trust in neighbors was associated with involvement. Our results did demonstrate that involvement in a CEI was positively associated with the perception that other community members were willing to participate in the initiative. Thus, it seems community members indeed cooperate conditionally on the expected cooperation of others (Ostrom, 1998). This is consistent with findings from game-theoretical research on cooperation showing that conditional cooperative strategies in a context of a "shadow of the future" (such as tit-for-tat strategies) can help solve cooperation problems. Yet, general trust in neighbors did not feed into a norm of reciprocity by raising the expectation that most people will cooperate (in line

with Dijkstra, 2013). For the initiators, findings indicated that that a lack of institutional trust and the (expected) lack of action in the community actually spurs them into action. However, a lack of trust in the local municipality is likely to be disruptive of the belief in the feasibility of the initiative. Thus, the working of trust might be more complex than highlighted in previous research on CEIs.

### **6.1.4 Trust and Justice in Shared Ownership Arrangements**

Chapter 5 broadened the perspective on community energy by looking at a hybrid model of community participation, namely shared ownership arrangements between local communities and commercial developers. A consistent finding was that shared ownership is undermined by a lack of trust, with negative expectations of the different parties involved of one another. Community actors viewed developers as instrumentally using the prospect of shared ownership to secure planning consent. Developers viewed community leaders as unrepresentative of the wider community, and being unable to live up to their part of the deal through a lack of knowledge and skills. These expectations in turn played a role in reducing the willingness to take risks and adopt new practices. This could then create a negative feedback loop, as proposed by Walker et al. (2014), where negative expectations of the other reduce willingness to engage in collaborative practice, which in turn increases a lack of trust in the other and so on. Yet, our findings indicated that there were heterogeneous views among both developers and communities.

## **6.2 General conclusions**

### **6.2.3 A community-relational approach to involvement in CEIs**

In this thesis a community-relational approach to studying involvement in CEIs was used, recognizing the social context in which individuals make their decisions, emphasizing the role of the local community and the social interactions that reside within it. The first overarching research question of this thesis therefore was *“To what extent is involvement in community energy initiatives by community members related to community-relational factors?”*.

The findings of chapters 2-4 demonstrate that indeed the local community and the social relations that reside within it matter for involvement in a CEI. First, community members seem to base their decisions to become involved in a CEI at least in part on the observed and expected behavior of other community members. While we found inconsistent results for the perceived motivations of other community members to engage in sustainable energy behavior more generally (chapter 2), the specific expectation regarding fellow community member’s participation in the CEI (chapter 4) and the connections to initiators of the CEI (chapter 3) were found to be related to involvement. Second, community involvement itself was found to be related to involvement in a CEI. Identifying with one’s local community, engaging in interpersonal contact with fellow community members (chapter 2), and being a member of other local associations (chapter 3 & 4), all were shown to be associated with involvement, over and above people’s sustainable energy motivations. These findings imply that people may not only become involved in a CEI because they are motivated by the environment but also because others in their local community are expected to do so or because they are more

generally involved in their community (either because they *feel* attached to their community or because they actually *engage* more in the community). This suggests that initiative involvement is inherently social and thus particularly influenced by the social context of the local community.

These results are generally in line with, and extend, earlier studies examining social factors in relation to involvement in CEIs, using different concepts and methodological strategies (Bauwens, 2019; Dóci & Vasileiadou, 2015; Haggett, Creamer, Harnmeijer, Parsons, & Bomberg, 2013; Hoffman & High-Pippert, 2010; Kalkbrenner & Roosen, 2016; Koirala, Araghi, Kroesen, Ghorbani, Hakvoort, & Herder, 2018; Sloom, Jans, & Steg, 2019; Warbroek, Hoppe, Bressers, & Coenen, 2019). We moved this field forward by disentangling the different aspects of social embeddedness deemed important for involvement. Crucially, we scrutinized the actual social relations within the community using a social network approach. This way, we made an important step towards understanding involvement in CEIs. More broadly, our findings strengthen the evidence base that taking social and contextual factors into account, as has been done over the years in for example social influence theories to explain household energy use and pro-environmental behavioral change processes more generally (Axsen & Kurani, 2012; Dunlap & Brulle, 2015; Jackson, 2005), seems promising for studying involvement in CEIs.

## 6.2.2 Investigating the community at large in understanding involvement in CEIs

Findings of this thesis highlight the importance of looking beyond the initiators of CEIs in order to study involvement of community members in such initiatives. First, within our sample, substantial socio-demographic differences between initiators and community members were found, which is in line with previous research indicating that CEIs are frequently led by small groups of highly committed and resourceful individuals (Aiken, 2012; Barr & Devine-Wright, 2012; DuPuis & Goodman, 2005) who tend to be highly educated males (Van Der Schoor & Scholtens, 2015; Van Veelen, 2018; Warbroek et al., 2019). Second, studying the community at large is important to validate some of the claims made regarding success factors for CEIs and effective recruitment strategies based on experiences of initiators only. For example, while our results support the notion that local social relations are important for involvement, trust in neighbors was not found to be associated with involvement. In addition, motives seem to differ between initiators and community members. While a prime motivator for initiators was a *lack of trust* in government, in the case of community members we did not find an association between institutional trust and involvement. And while the expectations regarding other community member's participation was found to be positively related to involvement for community members, for initiators the (expected) lack of action in the community seemed to spur them into action.

## 6.2.3 Community energy and shared ownership arrangements

There is an international trend towards more hybrid models like the shared ownership of renewable energy projects between community actors and private companies. The second research question of this thesis was *“How are shared ownership arrangements perceived*

*by communities, developers, and intermediary actors and how does this potentially affect how such arrangements are formed?'. Findings from chapter 5 showed that despite strong support for shared ownership in principle, a lack of trust and negative expectations between communities and developers undermined the possibilities for the development of such arrangements in practice. Thus, while initiators of CEIs seem to some extent motivated to take action due to their distrust in external actors (chapter 4), for successful collaboration in shared ownership projects trust between communities and external parties seems to play a crucial role (chapter 5). These findings represent an important step in better understanding the challenges involved in shared ownership arrangements.*

Importantly, while shared ownership has the potential to resolve some of the issues concerning community energy (e.g. risk distribution, technological knowledge and skills), this might come at the cost of decreased local legitimacy (chapter 5) and may undermine the local social conditions potentially contributing to involvement (chapter 2-4). Of course, as shown in chapter 5, there are different ways that community involvement in shared ownership is proposed, and different beliefs and norms underlying them. For example, some communities may be more financially or environmentally market oriented and some are more typical grassroots community energy initiatives who are more focused on the social aspects of these projects. However, many face the tension between gaining from engaging with external actors and fostering involvement within the community.

## **6.3 Possible Directions for Future research**

One of the strengths of this thesis is that we conducted our research in real-life local communities in which a CEI was being set up at the time of data collection and our findings thus have a high ecological validity. We extended previous research by examining community members who were actually facing the (future) choice to become involved in their local CEI, instead of looking at already involved members or interest in hypothetical community energy projects among the general public. Notwithstanding these contributions, our findings have to be put in the context of the data used. In this section we discuss both limitations of our research and possible avenues for future research.

### **6.3.1 Context of the field study**

While our findings entail more general behavioral insights, results may be merely generalizable to rather similar communities. For example, respondent's personal sustainable energy motivation was quite high on average, indicating that many respondents were interested in sustainable energy and energy saving measures. This is line with a more general trend among the Dutch population indicating that people are increasingly concerned about the climate and willing to invest in sustainable energy measures (Motivaction, 2017). Importantly, by focusing on early stages of project development, we circumvented a bias towards communities in which a successful project was already established. Yet, our results may not hold for some other types of communities, such as more deprived ones. However, preliminary findings looking at motivations to get involved in CEIs within such communities, seem to indicate remarkable similarities (Haggett et al., 2013). In addition, community energy comes in many different shapes and forms (Walker, 2011; Walker & Devine-Wright, 2008). In this dissertation

we mainly focused on communities of place limited to a certain geographically defined area such as a village or a neighborhood. Examining whether findings are generalizable to different types of communities is a fruitful avenue for future research.

Furthermore, most (research on) community energy initiatives has taken place in relatively small to medium-sized rural areas. Although this thesis also included two urban communities, more systematic research is needed within urban contexts, especially considering that more than 70% of the citizens within the EU live in cities generating a similar percentage of CO<sub>2</sub> emissions (JRC, 2019). Next to there being less (and more expensive) physical space available for the development of CEIs in urban areas (Oteman, Wiering, & Helderma, 2014), rural areas generally benefit from higher levels of interpersonal contact and social cohesion compared to urban areas, where community boundaries are more difficult to define (Völker, Flap, & Lindenberg, 2007). Exploratory findings from this thesis (chapter 3) also suggest that person-to-person social networks are sparser, and community involvement in terms of associational membership is lower in urban communities compared to rural ones. Network sparseness and low social connectivity render the spontaneous network diffusion of CEI-involvement less likely.

Related to this difference between urban and rural communities, there is an apparent bias towards home-owners versus tenants in (studies on) CEIs. Tenants might especially benefit from involvement in CEIs, since individual choice options are often limited regarding for example retrofitting their homes. Yet, they often do control which company delivers their energy. As Hardin (1968) argued, collective action is more likely when individuals with high interest in the collective good lack private alternatives (e.g. not having a roof available for solar panels). Different factors may play a role for tenants when it comes to involvement. For example, people invest more in relations when the shadow of the future is large (Axelrod, 1984). Due to higher residential mobility, tenants have a shorter shadow of the future and are generally less socially integrated in their communities (Völker et al., 2007), rendering factors related to the community potentially less relevant. Future research could investigate whether different mechanisms play a role for tenants compared to home-owners.

### 6.3.2 Taking time into account

We found factors related to the community to matter for involvement in CEIs in early stages of project development. Yet, at later stages, other motives and mechanisms could potentially play a role due to reduced (social) costs of involvement, such as reduced uncertainty regarding the success of the initiative and increased private financial gains, making the decision to get involved more cost-effective. It could be argued that it is exactly this potential heterogeneity amongst community members (both in interest and resources) that contributes to a successful diffusion of the initiative within the community over time (Marwell & Oliver, 1993; Rogers, 2003). At first, a group of highly motivated and resourceful individuals might take the lead, solving the start-up problem of an initiative and creating positive externalities for others, hereby making it increasingly attractive to become involved (Kim & Bearman, 1997; Marwell & Oliver, 1993). Indeed, preliminary research shows that as initiatives mature they attract people who are more profit oriented (Bauwens, 2019). Future research should include measurements at different stages of project development to further investigate such different motives in relation to patterns of diffusion.



Furthermore, since our insights are based on correlational evidence, they do not allow for causal conclusions. Using a longitudinal design could shed more light on the causal mechanisms at play, especially given the inconsistent findings regarding the proposed mechanisms in this thesis. For example, research suggests that interaction among group members is an important driver shaping group identity (Jans, Leach, Garcia, & Postmes, 2014; Jans, Postmes, & Van der Zee, 2011; Postmes, Haslam, & Swaab, 2005; Postmes, Spears, Lee, & Novak, 2005), in turn guiding behavior (for a review, see Postmes et al., 2005).

In addition, communities and their social networks are not static but dynamic and evolving over time. A promising avenue for future research would be to research the co-evolution of network dynamics and involvement in CEIs over time. Such a design could also aid in disentangling social influence from selection effects. For example, question remains whether community members are more likely to get involved due to their contact with initiators because they are influenced to do so or because of homophily tendencies in the formation of social relations (McPherson et al., 2001), or a combination of both. Collecting longitudinal data is a challenging endeavor. Nevertheless, such approach would be extremely fruitful in addressing some of these remaining research questions.

Moreover, we argued that involvement in CEIs involves collective action since CEIs usually aim at generating broader collective benefits within the community (Heiskanen, Johnson, Robinson, Vadovics, & Saastamoinen, 2010; Middlemiss, 2011). Yet, it is not evident that such benefits always accrue (Creamer, Aiken, Van Veelen, Walker, & Devine-Wright, 2019). In some instances, CEIs may even enlarge (existing) tensions within communities (Van Veelen, 2013). This could happen when social cohesion is strengthened in some parts of the community but not in others, increasing segmentation of the overall network of the community, for example between members and non-members. This can then lead to homogenization of information and knowledge within such different segments (Bodin & Crona, 2005) but not between them. Future research could examine such multidimensional outcomes, both intended and unintended, over time.

### **6.3.3 The role of community at the community level**

In this thesis we addressed an important gap in the literature by examining the actual social relations within the community, using a social network approach (chapter 3). By doing so, we showed that such an approach can contribute to our understanding of CEI involvement. However, social relations were measured as an individual feature. Future research could assess which network structures on the community level foster involvement in CEIs. Yet, the relative empirical neglect of such data in earlier research is mainly due to the fact that collecting complete social network data is prohibitively difficult in many real-life communities. We propose that using the local associational (affiliation) network, as collected for this thesis and used in chapter 3, is a fruitful starting point to gain insights in possible network mechanisms in cases where the collection of complete network data is out of range.

Furthermore, other community level factors could play a role for involvement. Although controlling for fixed community factors in chapter 2-4, the number of communities did not allow for statistically examining differences (in effects) between communities. A promising avenue for future research would thus be to take more and, as previously mentioned, different types of communities into account hereby allowing for statistical comparison within

communities and between communities simultaneously and test possible interaction effects between these levels. For example, it could be examined whether the effect of interpersonal contact between people, found to be related to involvement in CEIs in chapter 2, is enhanced by the overall level of social interaction within the community.

#### **6.3.4 Intentions vs. behavior**

Due to the fact that all initiatives were still in early stages of project development, we could not measure actual membership in the initiative, leaving it open to what extent our indicators of initiative involvement are predictive of actual and continuous initiative involvement.

We complemented our measurement of willingness to participate with initiative meeting attendance, reflecting an actual behavior. Our sample showed that willingness to participate was weakly but significantly related to initiative meeting attendance. However, initiative meeting attendance was less well explained by the examined factors in this thesis compared to willingness to participate. To be sure, this could be the result of people simply being unable to attend the meeting even though they were willing to participate. More generally, a previous meta-analysis on the intention-behavior gap in experiments showed that “a medium-to-large change in intention [...] engenders a small-to-medium change in behavior [...]” (Webb & Sheeran, 2006, p. 249). The question remains whether this also holds for a weak intention (indicated by for example “maybe” willing to participate). Future studies could address this “intention-behavior gap” by investigating to what extent these intentions also translate into the behavior of actually becoming a member of the initiative at a later point in time. Furthermore, when people actually become a member, other indicators might be of relevance such as the level of psychological involvement (identification with the initiative) (Sloot et al., 2019) and the size of eventual investments in the initiatives (Bauwens, 2019).

#### **6.3.5 Zooming out: a broader perspective on studying community energy**

CEIs often connect to a wider external network of stakeholders at different societal levels such as national governments, local municipalities energy companies, NGO's, intermediaries, and other energy cooperatives. Especially, CEIs are increasingly scaling up and engaging in hybrid models such as shared ownership arrangements. Thus, a two-level network approach is called for taking both internal and external embeddedness into account. In doing to, it would be fruitful to include the heterogeneous views among different parties to gain a more holistic picture, as was found to be of importance in chapter 5. Moreover, further research on CEIs and especially shared ownership arrangements is required in different institutional contexts. Comparative international research can help to clarify the role of macro level processes and how these interact with micro level processes presented in this thesis.

### **6.4 Practical Implications**

The use of cross-sectional data and relatively small-scale samples for this thesis implies that the findings presented should be interpreted carefully. In addition, we acknowledge that “there is a need to guard against too over simplistic prescriptions of what works” (Walker, Devine-Wright, Hunter, High, & Evans, 2010). Yet, we believe that based on the presented findings, several policy implications can be discussed which may be useful for (initiators of)

CEIs, project developers, policy makers, and other stakeholders involved. Future research could test whether these implications actually contribute to increased involvement.

### **6.4.1 Implications for initiators of CEIs**

An important challenge for CEIs is to reach segments of the population that are not already interested in and motivated for taking pro-environmental action. Results from this thesis show that people may not only become involved in CEIs because they are motivated by improving the environment but also because they are embedded in their community. This points to potential novel pathways to fostering initiative involvement. By effectively using the local social conditions and providing social incentives for involvement, CEIs may recruit people beyond the “usual suspects”.

To motivate involvement, it seems key to convey the importance of the CEI for the community and stress the social aspects of the initiative such as the ability to meet and connect with other community members, rather than merely appealing to people’s personal pro-environmental or financial motivations. Specifically, our findings suggest CEIs could emphasize people’s community-based identity as well as making use of interpersonal contacts among community members in order to promote initiative involvement. While some studies found economic return on investment to be a (self-reported) driver for involvement in CEIs at some stage (Bauwens, 2019; Dóci & Vasileiadou, 2015), and considerations about the upfront financial investments may be important, strategies merely focusing on such incentives may fail to harness and even “crowd out” social pathways for involvement (cf. Frey, 1997).

More specifically, as the expectation that other community members will participate was found to be related to involvement in CEIs, initiators could convey the interest of other community members in the CEI. This is of particular importance since people often believe others to behave less sustainable than themselves (Bouman & Steg, 2019; Chapter 2 this thesis). Yet, by doing so, initiators and policymakers should carefully align such messages with the actual interest in the community to avoid discrepancy between the conveyed expectations and this actual interest which can potentially undermine such an approach (Cialdini, 2003).

Furthermore, our results underscore the importance for initiators to use their personal social networks within the community to recruit fellow community members. However, by merely attracting community members within their close social networks, initiators might fail to have a wider impact, especially due to homophily tendencies in the formation of social relationships (McPherson et al., 2001). Therefore, attention should be paid to the possibility of recruitment from various different subgroups. Since our results showed how being a mere member of an association within the community increases initiative involvement, it is recommended to use the existing local associational network for recruiting community members. Yet, it may be hard for initiators to manipulate such networks within their community. A more cost-effective approach could be to look for diversity with regard to the potential recruit’s local social embeddedness when attracting new members, next to a diverse skill-set (such as technical knowledge and negotiating skills). However, previous research has also shown how cooperation is often more difficult to establish in more heterogeneous groups, because of coordination problems and the alignment of common goals (Ostrom & Walker, 2003). Thus, it seems important to find a balance between creating conditions for successful internal cooperation and external diffusion within the community at large.

### 6.4.2 Implications for policy makers

The policy domain is increasingly putting emphasis on citizen engagement in order to achieve more sustainable behavior. Policies are however still predominantly top-down, using financial incentives like taxes, subsidies and regulations, or providing information (Jackson, 2005) and focusing on more traditional large scale energy systems and individual consumers (e.g., Bauwens, Gotchev, & Holstenkamp, 2015; Magnani & Osti, 2016; Nolden, 2013; Oteman et al., 2014; Warbroek et al., 2019). Yet, our findings provide empirical support for the suggestion that a community approach may foster involvement among those people not necessarily motivated to engage in pro-environmental behavior.

While many CEIs emerge from discontent with public policy, they also operate within and rely on a wider institutional and regulatory environment. Recently, a more prominent role for communities has been emphasized within the EU to address climate change and reach its goals of greenhouse gas reduction with 40% and an increase in renewable energy of 32% by 2030 (REScoop.eu, 2019). Yet, while CEIs differ in the extent to which they rely on external support, there is a growing call to extend policy support. Support can take many forms such as funding but also expertise or training (Healey, 2015). More specifically, policy makers could play a role in easing the recruitment burden of CEIs by facilitating recruitment practices. For example, based on our findings, policy may be aimed at enhancing the embeddedness of CEIs within their local communities, for instance by facilitating the mapping of the local community structure. Policy-makers and intermediary actors may particularly engage in providing the necessary conditions for the self-organization of CEIs (cf. Bekkers, Edelenbos, Nederhand, Steijn, Tummers, & Voorberg, 2014). Importantly, stability in support is required since policy instability can erode trust and the willingness to engage in innovate practices (Oteman et al., 2017; chapter 4 & 5 this thesis).

Yet, the mere fact that CEIs are bottom-up endeavors does not guarantee that favorable social conditions for collective action exist. While targeting communities that can tap into their local social structure might be a promising strategy to increase involvement, this may lead to a so-called “Matthew effect” (a term first coined by Merton, 1968). Those communities may additionally secure policy support and as a result are more likely to successfully develop a project in turn generating additional resources while other communities are left behind. Also in the case of shared ownership arrangements, actors expressed concerns with the ability of smaller, poorer and less organized communities to take part. Policy makers could play a role in enhancing community engagement by providing suitable ‘matchmaking’ between communities and commercial developers, and enable communities to mobilize prior to developer approaches. This might help building trust between parties and could then go some way towards securing a ‘win-win’ situation for all parties involved.

## 6.5 Concluding remarks

This thesis has provided new insights into the role local social embeddedness plays for involvement of community members in CEIs and the potential of shared ownership arrangements between local communities and commercial developers, using an interdisciplinary, mixed-methods approach. Overall, the outcomes of this research support the notion that the local community and the social relations that reside within it can contribute

to involvement in CEIs, next to the specific sustainable goals and motivations individuals may personally have. This suggests that involvement in a CEI is inherently social and not merely a reflection of pro-environmental behaviors. Yet, this does not imply that favorable social conditions are always met. We additionally showed how a hybrid model of community participation, the shared ownership of renewable energy projects, while promising in theory, poses significant challenges in practice. Our findings indicated that a lack of trust was prevalent between involved actors and that it could be considered disruptive to the beliefs underlying both community energy as well as commercial energy.

Community energy is developing rapidly and more research is needed to address the social challenges and opportunities. We hope the field will continue developing and integrating different theoretical perspectives, using multiple methods, to come to a more comprehensive view. By doing so, it is key to include the interplay between both micro and macro phenomena. While micro phenomena reside within, are influenced by, and in turn influence a macro context, merely considering this macro context comes at the risk of neglecting the individuals who ultimately engage in sustainable energy behavior.

