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## Perspective

# Building communities in times of crisis - Impacts of the COVID-19 pandemic on the work of transition intermediaries in the energy sector

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## ABSTRACT

The ongoing COVID-19 pandemic affects people worldwide. The policies in response to the virus range from closure of national borders to curfews for entire metropolises, like Paris. While we can expect severe impacts on the world economy, the consequences of the pandemic for local sustainability transitions are entirely unclear. In this exploratory study, we investigate how the current situation affects the work of transition intermediaries in the energy sector. More concretely, we aim to analyse the impact of COVID-19 policies on community energy projects and the subsequent change of work practices of intermediaries in this situation. Our data consists of qualitative data we collected between January and October 2020. Our results show that transition intermediaries are affected in different ways. Most notably, the work on networking suffers during these times of crisis. We found that intermediaries are particularly challenged in their ability to build trust. This particularly affects new and complex community energy projects and intermediation activities needed for systemic change. We found that established projects with a strong trust base are least affected by these limitations. Intermediaries dependent on private funding face much bigger problems than publically funded organisations. Our results offer some novel and relevant insights in the role and work of transition intermediaries and the development of community energy projects in times of crisis. These findings can help governments, intermediary organizations and citizen groups to design future transition processes in ways that are more resilient to external shocks.

## 1. Introduction

The SARS-CoV19 virus has created a global pandemic (henceforth “COVID pandemic”) that is threatening the lives of millions of people while simultaneously pushing healthcare systems to their limits. By January 29th 2021, the World Health Organisation (WHO) reported more than 100 million confirmed infections and more than 2.1 million confirmed deaths [1]. While the crisis is predominantly a health crisis, individual and political responses have far-reaching consequences on nearly all aspects of our lives. So far, the responses by national governments ranged from weeklong curfews (Spain) to assembly bans (Germany), including the cancellation of the Bavarian Oktoberfest, the closure of restaurants and cafes (France) or extensive travel restrictions (USA). The full impact of this disruption on our economies and societies remains unclear at this point. It is also to a large degree unclear what the current situation entails for the ongoing transitions to a renewable

energy future, however, recent research points at a slowdown of the expansion of renewables [2]. Simultaneously, the incumbent fossil fuel industry suffered some spectacular losses and bankruptcies, which grants hope to the transition.

In the European Union (EU), this expected slowdown clashes with the goals of the 2018 Renewable Energy Directive, which aims to increase the share of renewables in our electricity mixes [3]. Nevertheless, plans to create green economic stimulus packages leave some space for cautious optimism [4,5] as they can potentially become a game changer in this critical moment [6,7] even though the current crisis has detrimental effects on national and private economies [8].

In recent decades, the EU has become the global hotspot for community energy (CE) projects [9] even though big regional differences remain [10]. The renewable energy directive recognises this leading role and defines community energy projects as one of the central pillars of the future energy systems in the EU [3]. Roughly defined, CE systems are

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renewable energy systems managed for and by local communities [11,12]. Previous research has associated CE with a number of benefits. As a rule of thumb, bigger and more complex projects produce more benefits for local communities [13]. Several authors mentioned economic benefits for local communities, e.g. new jobs or local tax income [12,14–17]. Other research highlights the positive effects on the environmental behaviour of people involved in CE projects [18–20] and the environmental benefits from replacing fossil with renewable energy systems [21–23]. Involvement in CE initiatives can also serve as a mechanism to strengthen local ties and democratic decision making processes [15,17,24–27].

A number of authors have identified intermediaries as key actors for sustainability transition processes in general [28,29] and CE initiatives in particular [30,31]. Intermediaries can help citizen groups to overcome challenges related to the setup and management of CE projects in many ways. While some intermediaries focus on intermediation between individual entities (individuals, actors or projects), others are so-called systemic intermediaries that intermediate between a larger number of entities or between networks of entities [32]. Previous research has not explored the impact of crises on intermediation in the energy sector in much detail. Against this backdrop, we use this exploratory study to research the impact of the current COVID crisis on the work of community energy intermediaries. We investigate which new challenges and opportunities arise and which responses the intermediaries develop when facilitating local energy transitions. This allows us to understand the impact of the pandemic on the nature of systemic change that intermediaries drive through their actions. We operationalise this aim through the following research questions:

- 1) How has the COVID pandemic affected the support functions provided by intermediaries for community energy project development?
- 2) How has the COVID pandemic affected the systemic and non-systemic intermediation activities of these intermediaries?

## 2. Transition Intermediaries

A number of authors have highlighted the important role of intermediaries in transition processes [33–38]. Transition intermediaries also play a key role in many local energy transitions [29–31]. Intermediaries are actors whose actions function as catalysts in transition processes [29]. Intermediaries bring together other actors involved in the transition, they help niche actors to access resources and they exert pressure onto the socio-technical regime [28,33,39]. The exact role of intermediaries can differ, often depending on the maturity of the transition process [40] or their institutional background [28], however, their role is always characterised by taking place in-between different actors involved in the transition process [32]. Intermediaries can be individual persons (in the context of community energy projects these are often referred to as local champions [30]) or organisations from the private, the public or the non-governmental sector [40]. They can range from public energy agencies [41] via private consultants [31] to internet fora [42]. Some intermediary organisations were founded with the clear goal to facilitate transitions [29]. In other cases they slip into the role without a clear initial intention [33]. While the typical roles of intermediaries are often associated with niche level activities, recent research has also highlighted the importance of incumbent intermediaries who were founded by regime actors [43]. The wide variety of backgrounds underlines a fundamental aspect of intermediaries, namely, that they become intermediaries by their actions in the transition process and not their institutional setup or affiliation.

In a recent contribution, Kanda and colleagues [32] introduce an important distinction between different forms of intermediation depending on who intermediaries intermediate between, the functions they perform, and who benefit from the intermediation efforts. *Non-systemic intermediation* is characterised by focusing on intermediation between individual entities, which provides these individual or

organisations access to knowledge or other resources. In contrast, *systemic intermediation* is concerned with intermediation between a network of entities or between networks of different entities. Systemic intermediation efforts are not exclusively focused on providing networks access to resources, but may also aim to instigate institutional change, thus, having a potentially larger influence on transition processes than non-systemic intermediation. In this paper, we also draw on the work of Glaa and Mignon [44] who present a fine-grained typology of different ways in which intermediaries support transition processes in the renewable energy sector. They base the framework on an empirical investigation of intermediary organisations in the RE sector in Sweden. As summarised in Table 1, the framework divides the different support mechanisms into three phase of the adoption process.

In order to understand the impact of the pandemic on intermediation, we combine the frameworks of Kanda et al. and Glaa and Mignon. First, we distinguish between (a) non-systemic intermediation between individual entities, (b) systemic intermediation between entities in a network or multiple networks<sup>1</sup>, and (c) systemic intermediation that also focuses on institutional change. Second, we attributed the different support mechanisms identified by Glaa and Mignon to the three different intermediation types. This allows us to classify intermediaries according to the activities they perform. While real-world intermediaries are often not exclusively focusing on one specific type of intermediation, they will nevertheless most often have a main emphasis in their activities.

## 3. Methods and material

We collected the data for this article in a two-step process. First, we conducted structured interviews with eight staff members from seven intermediary organisations from six different countries from the Baltic Sea Region (Denmark, Sweden, Poland, Finland, Estonia, and Germany). All intermediary organisations are involved in local energy transition processes, more specifically in the setup and management of community energy (CE) projects. The interview guide followed the 14 intermediary functions (see Table 2) as identified by Glaa and Mignon [44]. We first

**Table 1**  
support mechanisms by project phase, taken from Glaa and Mignon [44], p.4 in relation to level of systemic intermediation according to Kanda et al. [32].

Project phase	Support mechanism	Level of intermediation
Pre-decision	Facilitate networking and collaboration prior to decision	b
	Identify or create adoption opportunities	a
	Market or advocate for innovation	c
	Provide information	a
Decision	Facilitate networks and collaboration	b
	Provide business and investment advice	a
	Support technology evaluation and selection	a
Post-decision	Coordinate experts and subcontractors	b
	Mediate and handle contacts among various stakeholders	c
	Provide implementation expertise and services	a
	Help configure the innovation to adopters' specific needs	a
	Defend adopters' interests	c
	Provide and facilitate funding during implementation	a
	Facilitate the use of the innovation after implementation	b

<sup>1</sup> Kanda et al. characterize these as two different forms of systemic intermediation, however, for the purpose of this article we do not distinguish between them.

**Table 2**

Data from the quantitative part of the interviews. “Part of routine” shows how many of our interviewees engage in a specific support mechanism (0–2 low; 3–5 medium; 6–8 high). “Average importance” shows how important the intermediaries consider the mechanism in their daily pre-pandemic work with community energy projects (on a scale from 0 to 1.6 to 3.3 to 5). “Impact reported” refers to a perceived positive or negative impact of the pandemic situation on the work with this support function (here we only included the intermediaries who had mentioned that they work on this support function).

Project phase	Support mechanism	Part of routine	Average importance (1–5)	Impact reported
Pre-decision	Facilitate networking and collaboration prior to decision	high	high	high
	Identify or create adoption opportunities	high	high	medium
	Market or advocate for innovation	high	high	medium
	Provide information	high	high	high
Decision	Facilitate networks and collaboration	high	high	high
	Provide business and investment advice	medium	medium	medium
	Support technology evaluation and selection	high	medium	low
Post-decision	Coordinate experts and subcontractors	high	medium	low
	Mediate and handle contacts among various stakeholders	high	medium	medium
	Provide implementation expertise and services	high	medium	medium
	Help configure the innovation to adopters’ specific needs	medium	medium	low
	Defend adopters’ interests	high	high	medium
	Provide and facilitate funding during implementation	high	medium	low
	Facilitate the use of the innovation after implementation	low	low	low

asked about the impact of the pandemic setting on their engagement with each of the intermediary functions. Afterwards, we asked them to rank the importance of each of the functions in their regular work on a scale from 1 to 5. The purpose of the ranking exercise was to understand if the described impacts are actually severe or if they rather affect less important aspects of the daily work of the intermediaries.

We identified the respondents through the Co2mmunity project, a European INTERREG project located in the Baltic Sea Region. The project ran from October 2017 throughout September 2020 and brought together different actors from the Baltic Sea Region (4 academic actors and 12 practitioners involved in intermediation in the energy sector). The purpose of the project was to a) build a solid knowledge base on the status of community energy in the region and b) foster new community energy projects in the region. 11 of the 12 non-academic partners were responsible for setting up either citizen-driven community energy project or assembling a group of experts to pool expertise for new community energy projects in their respective locality. The INTERREG funding from the Co2mmunity project did not constitute a major share of any of the organisations’ budgets. This means that it did not redefine the work of the intermediary but worked rather as an add-on to support already existing work. We used our existing contacts from the project, which enabled us to skip the step of identifying unknown respondents. We applied this form of convenience sampling because of the urgency of the current situation created by the COVID pandemic. Through our own involvement in the project, we knew that all organisations we interviewed were working actively with the setup and management of CE projects. The respondents we interviewed are from different institutions, including municipal administrations, NGOs, regional and national energy agencies and consultancies. In a second step, we contacted some of these interviewees to gather follow-up information based on the interview results. We conducted all interviews several months into the pandemic in late June 2020, so that our informants had some time to gather experience with the situation and develop first responses. We complemented these data with participant observations and the analysis of protocols from weekly Skype meetings of the informants and additional intermediaries. We chose to include 23 Skype meetings between week 12 (March) and week 40 (September) of 2020. This marks the time from when the pandemic was first discussed in the meetings until the end of the INTERREG project. In addition, we discussed the impact of the pandemic with all our interviewees during two conferences: one in-person meeting in Tallinn in March 2020 and one online conference in September 2020.

We analysed the data as follows. In a first step, we categorised the intermediaries according to the prioritisation of support functions from interview data. Then, we verified this categorisation with a) our observations from working with these intermediaries in the last years and

b) the homepages of the intermediary organisations. In a second step we analysed the impact of the pandemic on the different support functions. For this step, we used the ranking by the interviewees. We then turned to the qualitative data from the interviews, the protocols and observations from the weekly Skype calls and two project meetings. These data helped us to flesh out our analysis and identify patterns and causal relationships.

Our approach to sampling brings about limitations for our study. Our data may harbour a certain bias because we recruited all respondents from the same project. However, we deem these limitations acceptable in relation to the ambitions of an exploratory study [45]. Nevertheless, the long period of continuous data collection (March to September) increases the validity of the data.

## 4. Results and discussion

In the following section, we present the findings from our study and discuss them in light of the theories on intermediaries and CE. We start with a categorisation of the intermediaries we investigated based on our data. Second, we then present the quantitative analysis before turning to the qualitative aspect of the study. Third, we explain how the impacts affect the lifecycles of community energy projects along Glaa and Mignon’s framework.

### 4.1. Who are the intermediaries?

Even though we recruited all intermediaries from the same project, our categorisation shows three different types of intermediary organisations. One intermediary focusses mainly (but not exclusively) on non-systemic type (a) interactions, so intermediation between single entities. We found that three of the organisations mainly focus on type (b) intermediation because they work more closely with (establishing) networks. The remaining three organisations also prioritise type (c) intermediation because they actively shape institutions around community energy through e.g. political lobbying.

The organisational nature of the intermediary organisations was found to have significant impact on the effect of the pandemic. In line with previous research [46], we found that private intermediaries such as consultancies or foundations dependent on private funding are much harder hit by the economic impacts of the pandemic and slowdown of business activities. This means that a lower cash flow endangers the survival of these private organisations. Public actors such as energy agencies are much more resilient due to their reliance on public funding and might gain easy access to additional public funding [28]. Countries such as Sweden and Denmark with a strong public sector might therefore experience less of an impact on the spread of the CE model than

countries like e.g. Poland where private organisations perform more of the intermediation work.

#### 4.2. What impacts occurred?

The quantitative analysis (Table 2) shows that all intermediary support mechanisms have some degree of importance for the group of interviewees. Two functions “Help configure...” (named three times) and “Facilitate the use...” (named twice) are less relevant to the daily work of the intermediaries. Both refer to direct work with renewable energy installations and constitute type a) intermediation. The fact that these have become outliers might be due to our sampling, as we e.g. did not include intermediaries that represent industry or engineering consultancies.

#### 4.3. Impact on community energy project lifecycles

Our data shows that CE projects predominantly feel the effects of the pandemic in the pre- and early phases of their development. These are also the phases that are deemed most important (see Table 2) and the interviewees explained that the vast majority of effects of the pandemic had a negative influence on their work. Consequently, we can expect a slump in the establishment of new community energy project, which we will probably only feel after some time has passed: rather than affecting work with community energy projects that are already established or under construction, the pandemic poses barriers to work on the early phases of community energy development. Thus, our results indicate that already established groups have good chances to continue their development with fewer difficulties compared to newer projects. This development is due to a number of problems CE initiatives and intermediaries encounter in the current situation.

Not surprisingly, all interviewees reported that they are struggling with the fact that direct in-person meetings, which previous research has established is particular important for the early phases of community energy projects [13,24], are not allowed or not advisable. Consequently, the intermediaries had to cancel all activities that involved personal contact.<sup>2</sup> Other actors also cancelled events, where the intermediaries would otherwise have attended. This affects a variety of activities (fairs, decision-making meetings by community energy groups, club meetings, excursions to community energy projects) by a wide range of actors (housing associations, industry, sports clubs, hunting associations, political meetings). According to our interviewees, in-person meetings have been particularly important for support mechanisms that relate to questions of trust. In addition, personal meetings are particularly beneficial for discussions that address complex issues and require creativity. This disproportionately affects activities in the early stages of community energy projects.

Second, several informants reported that the pandemic has led to a number of delays in nearly all phases of project development. This manifests in events being cancelled, delayed decision-making because of an unclear future. Delays also impact the post-decision phase, where e.g. installation of solar panels in a community energy project were put on hold as the electricians did not have permission to conduct their work.

#### 4.4. Impacts on intermediation

In the following, we present the impacts of the pandemic on intermediation. We structured the section according to the three categories we derived from Kanda et al. We start with the less complex a) type intermediation, continue with the middle level b) type intermediation

<sup>2</sup> Two informants flagged a further problem. According to them, there is generally a high share of older people involved in CE projects. This makes it even less recommendable to meet in person in times of the pandemic because of the higher health risks associated with increasing age.

before turning to the c) level intermediation that aims at systemic change through influencing institutions relevant to community energy projects. Summarising our data, we found that nearly two thirds (63%) of the support functions related to b) type intermediation are negatively affected. We found a moderate impact (43%) on c) type intermediation and the lowest impact on a) type activities (32%).

It hardly comes as a surprise that the main coping strategy is digitalisation of different support functions. The main tools here are online meeting platforms and an increased use of homepages and social media for dissemination (e.g. support function “market or advocate for innovation”). Our informants reported that the switch to digital work required some resources from the intermediaries, mostly time to learn the use of new software. Naturally, this switch brings about consequences for the different types of intermediation and the systemic change intermediaries can drive.

##### 4.4.1. Type a) – non-systemic intermediation

Non-systemic intermediation activities were generally affected the least by the pandemic. Reflecting this, the one intermediary that predominantly focuses on these activities was also the one reporting the lowest level of disturbance. Thus, rather than preventing these types of activities, the pandemic led to a change in the groups targeted by the intermediation activities and the tool by which intermediation took place. To exemplify, online communication requires that the target audience is willing to engage with technology, which is not always the case. One informant highlighted that the larger reliance on social media channels to provide information during the pandemic led to a greater focus on involving young and urban populations (rather than older, rural populations) in intermediation activities.

Changes in the public discourse also have an impact on the intermediation process. One interviewee pointed out that it is harder to catch people’s attention for climate mitigation issues during the pandemic because public attention as well as media coverage focusses on the impacts of the virus. Consequently, it is harder to motivate people to initiate new community energy projects. However, another informant reported the opposite. According to their experience the current crisis has highlighted the need for local self-sufficiency, underlined the local benefits that come from CE projects and led to a sense of empowerment for local communities.

##### 4.4.2. Type b) – systemic intermediation

The work on systemic intermediation was significantly impacted by the pandemic, as in-person meetings cannot take place. This particularly affects intermediary support mechanisms related to networking and initiating collaboration. One difficulty is that digital meeting technologies are riddled with disadvantages for the work of the intermediaries on community energy projects. Our research confirmed the known fact that trust serves as critical resource in the establishment of new CE initiatives [18,30,47]. Half of the intermediaries mentioned that building and maintaining trust among a larger group of stakeholders is much harder if people only meet through a digital filter. This filter, to a large degree, suppresses the informal interactions that occur at in-person meetings and create trust among heterogeneous actors, which is essential for CE projects [14]. One informant told us about their attempt to address this issue. Instead of a pure online meeting, they organised a hybrid meeting during which a small number of people sat together (in accordance with the respective hygiene regulations) while the remaining participants joined online. Another informant pointed out that projects that are more complex require higher levels of trust between the involved parties, while simple projects with few stakeholders can be facilitated remotely:

*“I mean, sending information of how to change an oil boiler to a heat pump, you can do this online. When you are trying to establish larger things which get more and more complex, you simply need more coffee to build the trust.”*



Several intermediaries also mentioned that online discussions often do not go as deep as in in-person meetings. In particular, it has proven to be difficult to be creative and develop new ideas during these meetings. One interviewee pointed out that there is just very little space to talk about “new things”, and not everybody feels comfortable to speak up in online meetings. The lack of feedback and questions following digital presentations (see also [48]) further limits the possibilities for detailed discussions during online meetings according to the informants. The interviewees suggested that this unwillingness increases when seminars are recorded. Thus, while online meetings may improve accountability and trust in decisions-making processes as sessions can be recorded (addressing the problem of lack of openness in transitions [49]), this comes at a cost regarding the ability of stakeholders to actually engage in discussions. These limitations make it difficult to establish ties and intermediate between different actors and networks.

Several informants reported that more communication also takes place via email. According to one, this can also lead to misunderstandings as email conversations do not permit for quick and efficient dialogue and discussions. Another informant mentioned that email exchanges make it impossible to rely on support tools that are available during in-person meetings such as whiteboards. Such tools are important when discussing complex and abstract issues such as the legal form of a CE project and practice effective intermediation. This, again, indicates that the pandemic affects the early phases of CE projects more directly than more mature projects.

Digital tools simplify intermediation between actors in different regions. One regional energy agency would usually hold seminars with attendants from the region, but the pandemic forced them to switch to webinars instead. They found that they now had attendants from across the country and not only their home region. It remains to be seen if this will indeed lead to an increase in community energy projects and new networks but this transregional focus might be helpful in instigating more systemic change because a wider audience can participate in discussions. In addition, several informants reported that digital meetings have proven to be easier to arrange and they often turn out to be more efficient than in-person meetings. This is particularly relevant in situations where personal meetings would have entailed travel.

The data shows that some intermediaries respond to the pandemic by shifting their efforts from type b systemic intermediation to type a non-systemic intermediation. For example, one interviewee told us that their organisation is now increasing efforts to support individual prosumers instead of community energy projects. Another example is a bus tour that one of the intermediary organisations had planned. The tour was designed to transport a group of interested citizens from one region to a city in a different region to visit community energy projects. Instead of having the regular bus tour, the team decided to conduct a “virtual bus tour” and shoot a video documenting the development of the community energy projects. This video now reaches a far wider audience, also in other regions of the country. However, it means that intermediation between different networks is replaced by a much more unidirectional flow of information.

#### 4.4.3. Type c) systemic intermediation focused on institutional change

Very similar to type (b) activities, type (c) intermediation suffers from the lack of in-person communication and the opportunity for trust building at meetings and event organised by the intermediaries. In addition, interviewees report that many of the events, which they attend as guests to interact with politicians (e.g. town hall meetings, citizen question time or fairs), have been cancelled in the last months. This further limits opportunities to lobby and intermediate between different networks. According to one respondent, this reduction in opportunities for defending the interests of early technology adopters such as CE groups may result in unfavourable legislations staying in place for longer time. On the upside, statements made by politicians during online events are often recorded potentially increasing the possibility to hold them accountable for their statements and promises.

A further problem is that the pandemic has dominated both public discourse and political arenas. One interviewee stated that it is very difficult to place the topic of community energy development on the political agenda in this situation. This makes it difficult to intermediate between politicians and networks in the community energy sector.

#### 4.4.4. Summarising the impacts

In summary, digitalisation has turned out to be the one central coping strategy of the intermediaries. This approach offers a number of advantages and a considerable list of disadvantages. Many of our informants were forced to learn how to handle new software and communication tools in a short time. Many expressed that these lessons will be beneficial in a post-COVID situation as well. Our interviewees considered digital communication helpful in some phases of CE development but not adequate for other phases. One respondent put it in a nutshell by stating:

*“Webinars and Skype meetings are absolutely wonderful and they expand the playing field, but you need to know the timing of when to use them to get max effect.”*

Beyond the question of digitalisation, we found that intermediaries can adapt to the current situation by shifting their focus from community energy project to less complex projects.

As mentioned above, we found that the biggest impact occurred for systemic intermediation activities. Supporting individual prosumer requires predominantly non-systemic intermediation activity as it focusses on unidirectional flow of information, only includes a very low level of in-betweenness and seldom involves network interaction. This shift then indicates that we can expect less systemic change instigated by the actions of intermediaries. Instead, their actions will probably lead to more incremental change in the energy transition through a rising number of prosumer projects.

#### 4.5. Potential Impact of Stimulus Package

Although recent publications underline their importance [4,6], we did not find a clear consensus amongst our informants in regards to the impact of the expected stimulus packages in response to the crisis. One informant explained that they can use these packages as arguments to push local administrations to support CE projects in the near future. As they put it:

*“If they do not get ambitious now, someone else will take the infrastructure for electric cars, building renovations, etc. etc. Because there will be a lot of subsidies, but there will not be subsidies for all.”*

They continued that the stimulus packages grant a generally positive outlook for the future of CE projects. Thus, they keep a close eye on the development to help citizen to benefit from the funding. Another informant was more cautious and stated that it is difficult to give good advice to people because “everything is under reconstruction” in terms of EU funding.

## 5. Conclusion

Research highlights the important role of intermediaries in driving the development of ce [29,30,50]. echoing previous research [32], we found significant variation in the work of intermediaries in the baltic sea region. depending on their organizational status and the needs in their region, they perform multiple different support functions. consequently, the character of their work differs in regards to the change they bring about. some intermediaries work more between individuals, other focus on the intermediation between networks and thus work at the system level. finally, some intermediaries even work towards instigating institutional change. these differences underline the importance of understanding how the ongoing pandemic affects different intermediaries. this

knowledge can help us predict some of the challenges ce development in the baltic sea region will face in the coming years. The important role of intermediaries in driving the development of CE [29,30,50]. Echoing previous research [32], we found significant variation in the work of intermediaries in the Baltic Sea Region. Depending on their organizational status and the needs in their region, they perform multiple different support functions. Consequently, the character of their work differs in regards to the change they bring about. Some intermediaries work more between individuals, other focus on the intermediation between networks and thus work at the system level. Finally, some intermediaries even work towards instigating institutional change. These differences underline the importance of understanding how the ongoing pandemic affects different intermediaries. This knowledge can help us predict some of the challenges CE development in the Baltic Sea Region will face in the coming years.

From our analysis, we derived four main findings. First, the pandemic particularly affects intermediation relevant to the early phases of CE projects. Second, non-public intermediaries are impacted most, as they cannot rely on public funding but rather must generate funding through project work or consultancy services. Third, non-systemic intermediation activities are the least disturbed by the pandemic. Intermediaries can compensate these minor impacts by using digital means and shifting target groups of their work. Fourth, the pandemic particularly affects systemic intermediation activities. Facilitating discussion on complex issues and building trust among (networks of) heterogeneous participants is very difficult in digital meetings. Furthermore, possibilities for lobbying and influencing policymakers are much more limited in the current situation.

The described impacts have consequences for community energy development in the Baltic Sea Region. First, our data indicate that we can expect a general delay in the establishment of new CE projects. However, as many already established groups can continue their work via digital means, we can expect that this slump will not become visible immediately. Rather, we expect that intermediaries now manage to plant fewer seeds, which would become CE projects only in a couple of years. Alas, additional funding for CE projects, for example from national and EU stimulus packages can only partly compensate this delay. This is because the crucial resource of trust can simply not be bought with more money. Here, intermediary organisations could serve as crucial trust-builders in a post-COVID energy transition and funders should consider strengthening these organisations. Second, due to the shift towards less systemic intermediation activities, we can expect that intermediation efforts will rather contribute to incremental change in the form of a higher number of less complex projects rather than institutional change. Policy makers can react to this by actively seeking out dialogue with intermediaries to gain insights into the needs of community energy projects.

This study indicates a number of relevant avenues for future research. One would be a longitudinal study to test the findings of this research. Second, following on previous work [33,42], a further investigation of the (possibly) increasing importance of digital non-human intermediaries during the pandemic warrants investigation. Finally, an analysis of different current and future national stimulus packages could produce interesting findings and indicate how CE projects in the region will develop.

Our research has shown that the pandemic has considerable effects on the work of intermediaries in the CE sector. At the same time, it has underlined that these actors can play a key role in building trust between stakeholders in a post-COVID energy transition. Whether the upcoming stimulus packages recognise and support this important role remains to be seen.

#### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence

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