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Community benefit funds for energy infrastructure: Paving the way for public engagement and sustainable development?

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A B S T R A C T

Considerable infrastructural changes are required within energy systems globally to meet the policy ambitions associated with the energy transition to a carbon neutral future. Engaging with citizens and communities and providing community benefit funding are emerging as key energy policy measures to support infrastructure development and to achieve an increase in public participation in transition processes. Such approaches raise interesting questions in relation to consent, procedural participation, and distributive justice. This paper addresses a key gap in the literature by asking the research question "how do different structured approaches to community benefit funding support community development and wider sustainability goals?". To answer this, we present an empirical analysis of three cases, in which different strategic approaches to community benefit funding are implemented for electricity network upgrades using Ireland as a case study. The results presented here apply not only to electricity grid infrastructure but also provide useful energy policy insights for other infrastructure developments that form part of the energy transition, in particular for wind energy and solar photovoltaic developments, where community benefit funding is increasingly implemented. Through an in-depth and rigorous methodological approach, the empirical data reveals community perspectives on the supports required for the utilisation of funds and suggestions for their effective management. Drawing on the results, the paper also makes policy recommendations to better enable communities to take advantage of opportunities provided by community benefit funding and the energy transition more broadly.

1. Introduction

Europe is continuing a pathway towards restructuring its energy system away from fossil fuels. To achieve public support for a sustainable transition, democratic processes must be developed where citizens are given a voice to shape developments. Engaging publics in energy infrastructure developments is recognised as a "key concern within both recent scholarship and energy policy" (Soutar et al., 2022, P. 113279). The role of citizens and communities in transition pathways is gaining increasing prominence as a central aspect of energy transitions as a democratic process (Correljé et al., 2024; Bellamy et al., 2022; Wahlund and Palm, 2022). However, the manner through which citizens are engaged in transition processes is not clearly defined, and the social and economic dimensions of such engagements are equally as complex as the technical aspects (Armstrong, 2021; Huttunen et al., 2022).

Three key reasons for the increased involvement of citizens in renewable energy infrastructure have been acknowledged within the literature. Firstly, due to the widespread nature of renewable energy and infrastructure developments- and the scale of change needed-there is a heightened chance of local areas being impacted by developments (Le Maitre, 2024; Rudolph et al., 2018). Consequently, 'community of locality' is a rationale increasingly used to consider in more detail the implications of energy infrastructure projects on those residing and working nearby (Devine-Wright and Sherry-Brennan, 2019). Secondly, environmental issues and renewable energy are increasingly discussed topics within the public sphere with increased scrutiny on how environmental 'goods' and 'bads' are distributed (Aitken et al. 2016, p.6). And finally, the institutional setting remains ill-equipped to deal with the social dimensions of infrastructure development (Tobiasson and Jamasb, 2016) Emerging literature highlights regional discrepancies in terms of engagement due to institutional deficits pointing to the fact that the institutional context plays a role in facilitating or hindering exchange between the various stakeholders (Cowell, 2006; Wolf-Powers, 2010; Slee, 2015). On from these reasons, we can look at rationales for engagement. These can be instrumental and, therefore, assist in the attainment of acceptance of infrastructural changes. They could be substantive, where citizen knowledge can improve the quality of decision making within a project. Finally, they can be normative, driven by

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values, and relate to moral obligations (Soutar et al., 2022).

In relation to renewable energy infrastructure, several different involvement mechanisms can be deployed. For policy makers, "one size does not necessarily fit all; selecting effective policy measures … requires a clear understanding of the situation on the ground" (Kerr et al., 2017, P.202). For example, compensation schemes have traditionally been used in the development of renewable energy projects to garner acceptance. These, however, can be criticised for not involving citizens in a meaningful way in the deliberative process around developments and have been shown to bring about negative implications at the local level (Jorgensen, 2020). As such, this paper follows the view that various energy technologies elicit complex gradations of support and opposition among different local groups, which point to the need for varied forms of communication (Ellis et al., 2007). For the energy transition to reach everyone, energy policies must consider the integrity of engagement and the power of citizen participation, acknowledging the significance of the human element in the decarbonization process. Socioeconomic participation in energy transitions can take several forms, either voluntary or in compliance with policy mechanisms, as described in the literature (See: Santos et al., 2025; Tobiasson and Jamasb, 2016; Le Maitre, 2024). These include national strategies (like sovereign wealth funds), community-level strategies (like joint ventures), and individualist strategies (like tax cuts). Community payments or benefits, as discussed here, are a mechanism through which engagement can occur. As an instrumental tool, community benefit payments have been critiqued, with them instead suggested as a mechanism to address distributional asymmetries related to the impacts of infrastructural developments (Cowell et al., 2012).

While a focus is given to community energy across much of the literature, there is a broader emergent discussion of community wealth building, which in concert with the established tradition of corporate social responsibility offers a space through which this question of community capacity can be explored (Slee, 2015; Breakey et al., 2025). Community wealth building had emerged across western neoliberal contexts (Kohn, 2020; Hanna and Kelly, 2021; Guinan and O'Neill, 2019) in response to the disempowering forces felt at the local level, imposed by private financial and commercial interests. Community wealth building has been defined as an approach to "local economic development strategy focused on building collaborative, inclusive, sustainable, and democratically controlled local economies" (Guinan & O'Neill, 2020; P.13). The net-zero transition has been acknowledged as a key opportunity to further expand upon the scope and application of community wealth building, enabling more democratic forms of local economic development (Lacey-Barnacle et al., 2023). The potential is vast, ranging from decentralised energy markets to technical net-zero innovations such as energy storage and vehicle to grid markets. Within this work, we expand upon community benefit funding to play a function within a community wealth building agenda. Focusing on the potential of added benefits which might have not been available otherwise (Rudolph et al., 2018) we further explore the 'productive effects' of community benefits, and their instrumental role in deepening participation with energy and sustainability; drawing out in this instance emergent meanings and practices from the perspective of multiple community groups and stakeholders (Chilvers and Kearnes, 2020).

This paper adds to the growing body of literature on community benefit funding as a strengthening energy policy mechanism to support the energy transition. Much of the focus in the literature to date focuses on renewable energy technologies and we add to this with a specific focus on the necessary electricity grid infrastructure developments required to enable the energy transition. Thus, this paper contributes to the existing body of knowledge by examining community benefit funding within the framework of grid technology and infrastructure, which entails distinct socio-technical dynamics (Walker and Cass, 2007). Indeed, while grid infrastructure is notoriously controversial and faces many implementation challenges, it has received comparatively less attention in terms of public acceptance and engagement research (Devine-Wright and Devine-Wright, 2009; Flachsbarth et al., 2021). This is concerning because some research suggests that acceptance of transmission grid developments tends to be lower than that of other large energy projects, such as wind energy (Hyland and Bertsch, 2018).

Ireland is selected as a useful case study, given firstly the relatively low levels of public acceptance of new transmission lines according to Koecklin et al. (2021) and secondly, the recent new practices (Boyle et al., 2024) adopted by Ireland's transmissions system grid operator (EirGrid) in how engagement with citizens and communities on grid infrastructure takes place (Boyle et al., 2025). In this paper we investigate the implementation by EirGrid of different community benefit funds, following three different approaches, asking: how do differently structured approaches to community benefit funding support community development and wider sustainability goals?

The research developed through this paper was co-funded by EirGrid, who acted to support it through providing interviews and networking functions to fund administrators, chairs and community groups where necessary. The work is part of the larger STEPS project which looks at public engagement for energy infrastructure delivery. Lessons from this paper will be made available to EirGrid. This work builds upon earlier research on community engagement across a range of organisations (Boyle et al., 2022), from which a research proposal was prepared to further investigate EirGrid as innovative in this space. Although acting with academic independence throughout the process, our positionality must be acknowledged regarding our relationships with the TSO as co-funder of the project within which this research paper is situated.

The paper is structured as follows: Section 2 engages with evolving meaning and practices around community benefit, including emerging implications for public engagement within existing literature. Section 3 provides more information on the focus of the case study investigated. Section 4 presents the methods used and the two-phase approach deployed. Section 5 provides the results from across the three cases examined, namely grid upgrades at Clashavoon- Dunmanway and Laois-Kilkenny along with the Celtic Interconnector. Section 5 discusses the significance of the results and Section 6 provides conclusions and policy recommendations.

2. Defining and implementing community benefit schemes: an overview of evolving themes

With the publication of *Silent Spring*, the dangers of industrial pollution become commonly understood within the public sphere. Following on from disasters such as Three Mile Island (1979) and Chernobyl (1986), heightened pressures and scrutiny were placed on developers to consider their impact when delivering projects in relation to local communities and economies, biodiversity and the environment. Since this time, corporate social responsibility (CSR) has been mainstreamed across energy companies globally, becoming synonymous with Environmental, Social, Governance (ESG) factors in more recent times. Evolving standards relative to the environmental and social impacts of local industrial development help legitimise the idea that ESG initiatives are, in fact, what should be expected of responsible economic actors (Breakey et al., 2025). Community benefit arrangements can be defined in this context as an ethical and social imperative that communities should reasonably expect from developers (ibid). The appropriateness and desirability of 'doing good' actions by corporate entities, as such, add legitimacy to CBFs and align in many instances with societal expectations of CSR (Jeong and Kim, 2019).

Community benefit funding in relation to energy infrastructure developments can be seen to respond to CSR and ESG requirements whilst also being a means to democratize planning processes or, as traditionally enacted, a means to achieve social acceptance and a 'social licence to operate.' Furthermore, research has also shown that making more explicit the key distinctions between risk mitigation within projects,

provision of compensation, provision of benefits, and power dynamics between actors is essential, as it has implications for how benefits ultimately are distributed and delivered (Kerr et al., 2017). Thus, while in principle, financial benefits are in the first instance perceived positively by communities, they can also become conflictual and challenging processes (Clausen and Rudolph, 2020; Le Maitre, 2024).

In investigating community benefit as a key energy policy strategy for renewable energy, Määttä (2024) highlights the impact that such approaches can have on developer-community relationships, with both positive and negative implications indicated depending upon several criteria for effective collaboration between parties. The balance of power, levels and perceptions of fairness, trust in the process and relationship, and inclusion in consultation processes of those not considered as the "community" are key factors influencing the success potential of a community benefit process. Alongside these, the incentive to collaborate, the institutional design, and facilitative leadership are also key (Määttä, 2024). Reimagining such processes is suggested to ensure that public trust in energy transition processes is not jeopardised. In the Scottish context of Määttä's study concerning renewables, mandatory but smaller fund amounts, shared ownership of benefits, innovative public funding mechanisms to benefit host communities, and the removal of community benefit requirements are all suggested as different reimagining options. Further work in the Irish context in relation to onshore wind farms, finds that fairness and transparency are perceived as central to the management of community benefit funds, with proposals needing to be assessed with regard to their value to the community (Le Maitre, 2023).

Community benefits are increasingly common in the delivery of large energy projects. It's therefore not surprising that definitions and themes associated with community benefits have evolved. Unfolding research explorations reveal interesting new areas of concern and have enabled the emergence of counter-discourses on CBF appraisal, namely by redirecting more attention toward energy justice (Cowell et al., 2011, 2012; Morgera, 2014; Rudolph et al., 2018).

Community benefit schemes can be defined as arrangements between various stakeholders involved in energy projects, including typically local communities and project developers, whereby developers provide a range of monetary or non-monetary benefits, which may include paying a fixed amount to communities, delivering empowerment measures, and new infrastructure (Glasson, 2021). The 'spatiality' of benefit provision, associated typically with pre-set boundaries around local host communities is an enduring theme (Devine-Wright and Sherry-Brennan, 2019). Emergent interpretations of communities in the context of both offshore wind projects and energy justice frames have led to increased calls for greater flexibility in the way local and proximity boundaries are defined (Rudolph et al. 2017; Le Maitre, 2024).

The benefits vary substantially and can take the form of individual household payments to community members, or payments to a local community fund which can be used for collective endeavours. They can be mandatory or voluntary arrangements. Some definitions highlight the critical distinction between benefit as compensation or risk mitigation and benefit as reward, with the former being the main category of understanding in terms of good practice (Kojo and Richardson, 2014). Other definitions include that proposed by Wynberg and Hauck (2014) whereby benefit-sharing is advanced as 'a new way of approaching natural resource management and spreading the costs and benefits of using and conserving eco-systems and their resources across actors' (p.6).

The work of Hyland and Bertsch (2018), in investigating not only community benefit schemes, but also equity involvements, joint ventures, and energy cooperatives, find that there is no singularly favourable mechanism demographically but rather that different groups in the population prefer different schemes, adding further nuance to the different suitability across technologies. Here, it is noted that not only does the topic concern distributional justice, but the evidence suggests that involvement in the procedural aspects of renewable energy infrastructure developments is equally important. Across the various involvement mechanisms investigated, community benefit schemes correlated to the highest level of acceptance for grid developments when compared with "no compensation" or "equity involvement". The findings represented through this study are not given to be universal, but rather are context specific to the Irish case. The work of Curtin et al. (2018, 2019) provides further insight on financial incentives for mobilizing citizen investment in renewables from both an Irish and International perspective. As supported by this work (Curtin et al., 2018), policymakers should be cautious in assuming that different countries and contexts will yield similar results, returning to the nuance of cases referenced above (Kerr et al., 2017).

A 2010 study (Cass et al., 2010), found that the normative case for community benefit is accepted by different relevant stakeholders, yet the mechanisms for doing it remain complex. Through investigating local benefit provision in relation to renewable energy technologies (wave, tidal, wind, biomass) in the U.K., the authors find government advice to suggest that community benefits should be incorporated into projects at an early stage. However, this does not lead to a unified approach, with industry respondents to the study stating that they still are met with public perceptions of benefit as 'bribery' regardless of the time of its implementation. Experimental studies have highlighted participant responses to hypothetical projects as negatively impacted when framed as 'bribery' (Walker et al., 2014). This gives further weight to calls for approaches to engagement which use community benefit schemes as only one amongst a number of interventions culminating in a broader community consultation approach (Devine-Wright and Sherry-Brennan, 2019).

The timing of implementation may not fully address urgent concerns regarding bribery. However, Breakey et al. (2025) argue that strategically designed CBFs should help reduce ethical considerations related to the perception of community benefits as a moral hazard. In other words, that CBF design should be defined and operationalised in a way that does not harmfully impact local decision-making and that it enables rather than undermines people's civic engagement (and duty) toward local socio-environmental welfare issues (ibid) and the use of local natural resources (Barritt, 2014). Thus, the 'ethical' way forward as proposed by Breakey et al. (2025) is for the advancement of policies that ensure that 'civic and custodian responsibilities' are protected (p.6). The engagement dimension of community benefit funding has received little attention; indeed, community benefits remain a 'fuzzy area' with often overlapping rationales (Glasson, 2021); as argued by Cowell et al. (2011) there is a degree of 'constructive ambiguity' in this so that 'fluidity of meaning allows the concept to hold together a range of interests' (p.549). This sense of openness unfolds various possibilities for leveraging the benefit of CBFs in terms of engagement and community vibrancy. Speaking of Community Benefit Agreements (CBA), Baxamusa (2008) considers the empowerment and coalition-building possibilities of these projects and suggests that they have the potential to bring together otherwise unconnected groups which in turn promotes more coherent and more ambitious development proposals. Aitken (2010) emphasises the role of participation in building trust and construing CBF processes that are considered fair. This idea is reiterated by Cowell et al. (2011), whereby financial advantage is positioned alongside engagement and participation as necessary to shaping people's acceptance of energy projects.

3. Case study focus

3.1. Community payments and benefit schemes in electricity grid developments in Europe

It has become increasingly common practice in a European context for transmission system operators (TSOs) to make payments to communities who are situated within the location of new grid infrastructure and grid infrastructure updates which impact in some way upon those

communities. The publication of the European Commissions Grid Action Plan in 2023 outlined the need for public engagement to facilitate "accelerated deployment" of new grid infrastructure across the union. Community payments can be situated within a wider suite of public engagement approaches and are referred to under a number of names, e.g. compensation, gain, benefit. Fitting within the work of Hyland and Bertsch (2018) and Cass et al., 2010, the approaches used to both design and administer payments to communities are broad and take different forms when looking specifically at the electricity grid. With relation to transmission power lines, there is a lack of policy guidelines to assist TSOs in delivering community payments, and from this, there has been, to date, a lack of in-depth investigations into how such payments or benefits are administered (Devine-Wright and Sherry-Brennan, 2019).

As with the discussion on renewable energy infrastructure more broadly, community payment methods and benefit schemes, when applied to electricity transmission infrastructure, have been criticized as a potential representation of the developer trying to purchase consent (RGI, 2018). While attempting to increase local acceptance of a project, a perceived "buying" of consent is negatively impacted by the diverse range of methods used in the design and delivery of the schemes. The need for case studies which highlight different mechanisms is warranted to build good practice in this area.

In 2018, Renewable Grids Initiative published 'Community Payments-case studies from across Europe', which outlined four European examples of community payments related to grid infrastructure from TSOs (RGI, 2018). The countries included were Germany, Ireland, Italy, and France. Some core characteristics of community payments, applicable across all four cases, were outlined. Community payments fund projects within a geographical community context leading to local benefit. They are set for a pre-determined contribution, be that yearly or on a one-off basis. Local and regional authorities are involved in the processes either through controlling the funds or assisting in the management and dissemination of funds. The amount made available is related to specific project characteristics, e.g. length of line, project cost, etc. Finally, funds are restricted to a pre-defined geographic area upon which the project impacts. How such geographic boundaries are defined, communicated, and justified has been found to be imperfect yet often accepted in its pragmatic framing (Devine-Wright and Sherry-Brennan, 2019).

The four case studies from 50 Hz (German TSO), EirGrid (Irish TSO), RTE (French TSO), and Terna (Italian TSO) in 2018 highlight the different forms which community payments can take. They can involve payments to affected authorities, selected projects, or individuals. They can also use investment mechanisms like crowdfunding. These diverse approaches have trade-offs in terms of advantages and disadvantages. Some are more flexible, and some are more transparent. Some are more complex to design while others don't consider public interest.

3.2. EirGrid, public engagement, and community benefit funds

Building upon insights previously provided on community benefit approaches related to transmission grid developments, our study investigates the implementation of three community benefit schemes in Ireland, with each developing from the previous iteration to enable procedural and distributional participation of geographically defined communities. The first involves one-time payment of funding with an open thematic format, the second is multi-year funding in an open thematic format, and finally the third is multi-year funding with a thematic structure across the strands of sustainability, biodiversity and community.

Since its establishment in 2006, EirGrid has worked to develop its approach to public engagement due to both public opposition and the considerable need for grid infrastructure development to meet national energy objectives (Boyle et al., 2024). In recent times, EirGrid has implemented a six-step process for public engagement (See: Fig. 3) which supports their engagements with citizens and communities in the development of projects. Within this approach, community forums play an important role as a type of public participation approach that includes local stakeholders, such as corporations, authorities, volunteer organisations, and community councils. Its responsibilities include representing the opinions of the community, offering advice on regional requirements, identifying chances for cooperation, resolving conflicts, giving project input, participating in community benefit plans, and disseminating information to a wider audience.

It's important to note EirGrid's legal obligation to connect electricity generators. As the national electricity transmission system operator for Ireland, they have a statutory function. Subject to direction from the regulator, this statute requires them to offer a connection to the grid for those who request it. They are legally required to develop the grid in response to plans for new electricity generation, such as wind farms. As part of EirGrid's approach to establishing a community benefit fund, they appoint a community benefit fund administrator. There are four organisations that are listed on the tender framework to apply to provide community benefit fund administration services. These are Groundworks Northern Ireland, SECAD, M-CO, and WSP UK Ltd. The community forums established for grid infrastructure projects are independently chaired.

Within this study we have focused on applying the methodology (Fig. 2) across three case studies. Clashavoon-Dunmanway (Case 1-CD), Laois-Kilkenny (Case 2- LK), and the Celtic Interconnector (Case 3- CI).

4. Methods

As noted, to investigate the implementation of community benefit funding we followed three different fund implementations across three distinct geographic regions (Fig. 1). The research process followed a two-phase approach. Firstly, we conducted interviews with EirGrid, the forum chairs for each case (M-CO and Irish Rural Link), and the fund administrators (SECAD and M-CO). This provided a contextual outline of the specific characteristics of each. This phase informs the case outline within the results. Secondly, we conducted surveys, focus groups, and fund-route analysis for each of the projects under investigation. This informs the 'community feedback' within the results.

4.1. Interviews

In the first instance, we conducted interviews with EirGrid employees working on each of the three projects. The community liaison officers for each of these were interviewed early on in the research process. Following this, we interviewed the forum chairs, and the fund administrators. This work was completed to build the cases concerning each of the three areas, as outlined in the results, informed by previous research (Boyle et al., 2024, 2025). Due to its adaptability, a semi-structured interview method has been used. Before the interviews, questions were further developed using an interview guide that was prepared and tested internally. While some specific questions were required for each of the three interviewee types (EirGrid, Forum Chair, and Fund Administrator), the general interview guide provided broad questions that applied to all involved. Reflections on their role in the case, the history of the consultation process, the purpose and dynamics of the related community forum, and the dynamics of the benefit fund procedure and its execution were all requested of the participants. New codes were developed inside the transcriptions through thematic analysis of the data (Castleberry and Nolen, 2018), and these codes guided the iterative process of generating pertinent emergent themes. The relation of specific quotes to interviewee responses has been given a designation within the results (i.e. Interview 1 = I1, etc.).

4.2. Surveys

In the Case 1- CD funding was provided in over a single round. Due to this, there was no continued relationship between EirGrid and the

	Case 1- CD	Case 2- LK	Case 3- CI
Technology	110kV electricity line	400/110kV substation. 110/38kV substation. New 110kV line. Further upgrades to lines and substations	700 MW high-voltage direct current (HVDC) submarine power cable to France
Geography	West Co. Cork	Co. Kilkenny and Co. Laois	East Co. Cork
Fund approach	One round of funding, no thematic focus	Three founds of funding, no thematic focus	Three rounds of funding, three thematic categories
Fund amount available during phase of study	€600,000	€204,600 (of €511,500)	€960,000 (of €2.4 million)
Projects funded during phase of study	36		29

Fig. 1. Outline of case studies.

	Case 1- CD	Case 2- LK	Case 3- CI
EirGrid Interviews	Community Liaison Officer Interview (I1)	Community Liaison Officer Interview (I3)	Community Liaison Officer Interview (I6)
Forum Chairs	n/a	Irish Rural Link Interview (I4)	Irish Rural Link Interview (I7)
Fund Administrators	M-CO Interview (I2)	M-CO Interview (I5)	SECAD Interview (I8)
Community	Survey, Fund- Route Mapping	Survey and Focus Group, Fund-Route Mapping	Survey and Focus Group, Fund-Route Mapping

Fig. 2. Methods outline for three community cases.

communities. A community 'recognition day' was organised by EirGrid to highlight the different initiatives funded through the programme. The research team prepared a survey which could be administered both online and in person during this event and after it had taken place. A pre-structured deductive qualitative survey style was deployed (Jansen, 2010) with 13 respondents completing the survey during and after the community recognition day. Codes and themes were developed from the survey using thematic analysis of the data. The survey questions are included (alongside response) in appendix 2. Online qualitative surveys were also used in the focus groups for the other two cases as outlined below.

4.3. Focus groups

For Case 2- LK and Case 3- CI we investigated the first round of funding in a three round process. Due to this, an ongoing relationship between the community forums, the fund administrators, and EirGrid was in place. Relationships building with these communities took place firstly through attending forum meetings to introduce our research project followed by the organisation of two online focus groups, one for each case. The focus group structure was organized around the completion of three short online surveys shared during the online workshop. The research team compiled responses to the surveys in real time, presented them back to the participants, and facilitated a discussion on the topics raised. The surveys focused on 1) reflecting on the community benefit fund process, 2) building on the process moving forward, and 3) recommendations for community groups leveraging opportunities for development. There were 25 respondents across the two focus groups (13 Case 2- LK, 12 Case 3-CI). A total of 38 community participants were involved in this part of the investigation. Codes and themes were developed from the surveys using thematic analysis, and visualisations were created using word clouds to highlight responses. The detailed empirical information from the surveys in contained within Appendix 3. The recommendations brought forward through the two focus groups were compiled and voted on by participants using online voting software.

4.4. Fund-route mapping

The routes of three EirGrid projects were recreated by georeferencing publicly available jpeg images of the infrastructure projects. This was done to visualise the routes, projects funded, and forum membership. Georeferencing is a process of adding spatial reference information to raster data (Hill, 2006). Scanned images, some aerial photography and historical data do not contain spatial reference information but images, i.e.jpeg or.png, can be imported into several GIS applications and be georeferenced to align with other spatial information (e.g. a county boundary). In this case, the publicly available infrastructure project maps from EirGrid were imported into ArcGIS Pro via the georeferencing tool (ESRI, 2023). The image was aligned with real world features such as road junctions using control points in ArcGIS Pro. Once the images were reasonably aligned across its breadth, RMS error of less than 3000m, the routes of the three EirGrid projects were traced as line shapefiles. The community groups under consideration were those in receipt of funding as members and non-members of associated community forums, as investigated through the surveys and focus groups (See: Appendix 1 for a full outline of groups), and forum members not in receipt of funding. Blue dots represent fund beneficiaries who are not members of a project community forum, green dots represent fund beneficiaries who are members of a project community forum, and red dots represent forum members not associated with a funding project. Spatial data for the community groups was sourced using publicly

available information from Cork County PPN, Laois PPN, Kilkenny PPN, social media pages/profiles and Google Maps. Latitude and longitude coordinates were approximated for each group using this process. Three groups had no exact address or fixed location (Youghal Fishermen's Association, Carrigtwohill Flower and Garden Club & Carrigtwohill Girl Guides) and were assigned a set of coordinates within that townland.

5. Results

The results are presented here across the three cases. We provide outlines of each individual case using reference to the interviews conducted with those working on the projects and the communities in receipt of funding as gathered through the surveys and focus groups. Firstly, Case 1- CD is outlined as following EirGrid's previous strategy for community benefit funding and, as such, is a different methodological approach using only surveys. Case 2- LK and Case 3-CI use surveys and focus groups alongside voting on recommendations to shape the results. Fund-route analysis is provided for each of the cases. More detailed results are provided for the latter two cases due to the approach taken and access to the cases. Each of the three cases is presented as a case outline' informed by the interviews and 'community feedback' informed by the surveys and focus groups.

Fig. 3 below was prepared to highlight EirGrid's strategic approach to community benefit funding and its development over time. It is situated within the historical context of EirGrid's development of public engagement (See: Boyle et al., 2024) and their six-step strategy (See: Boyle et al., 2025). We highlight both the old scheme (which applied to Case 1-CD among others) and the new strategy (which applies Case 3-CI). Case 2- LK acts as a hybrid bridging approach, which releases funding in three stages as per the new scheme but does not explicitly relate to thematic streams as per the old scheme.

5.1. Case 1-CD

5.1.1. Case outline

A 110 kV electricity line connecting a substation in Clashavoon near Macroom, Co. Cork, with the outskirts of Dunmanway, Co. Cork, using overhead cables was prepared to enable new sources of renewable energy to the grid, particularly the wind resources available in South-west Cork (Fig. 4). The construction of the line began in 2016 and was energized in 2020. The community fund was announced in 2021, and online (Covid-19) information sessions were held to input stakeholder and community views into the implantation of the fund. A total of €600,000 was awarded by EirGrid to community groups and not-for profit organisations near the Clashavoon-Dunmanway area, funding 36 projects for the development of community and sports facilities, youth facilities, heritage projects, older person initiatives, and enterprise activities. There were approximately 50 applications to the fund. Priority was given to applicants within 3 km of the transmission line, however, if applications clearly outlined the benefit provided to the communities in question, they were eligible to submit an application.

An independent fund support and administration body was established to assist groups through the process. Applicants were assessed by representatives of EirGrid, the fund administrator (M-CO), and an independent evaluator. The panel sought to ensure that benefit was spread amongst communities.

Within this case, the new six-step strategy was not integrated into the approach. Due to this, the community forum was not set up early in the overall process and was not involved in shaping the community benefit fund strategy. The new approach also gives funding over three phases, and the amount given is three times greater. This was recognised as an influence on the ability of communities to maximise the potential for development;

> "Giving funds out over the three phases, allows community groups to have time. It allows them to build their business plans or community development plans … It allows them to leverage other funding and we have that opportunity to do that more capacity building" (I1)

Despite this, however, the general response to the rollout of the community benefit funding was perceived as positive by the fund administrator;

> "They're all just delighted to get the money … And then as the time has gone on, it's just been very positive" (I2)

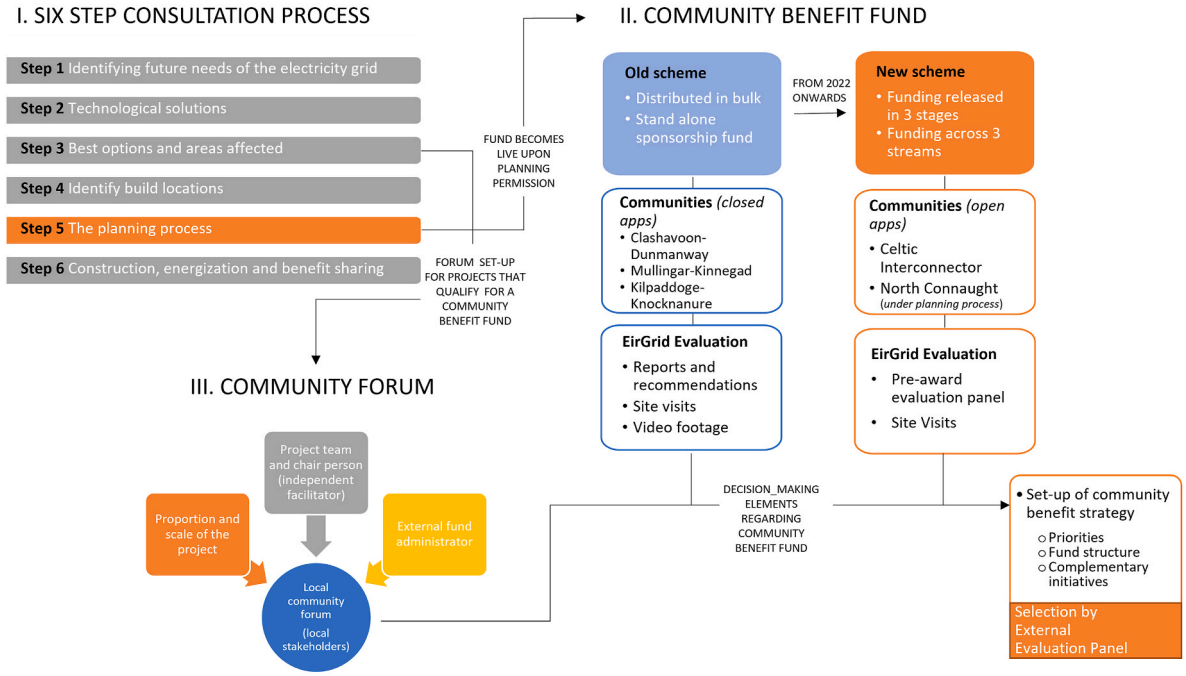

Fig. 3. Outline of strategy development for community benefit funding and six-step strategy.

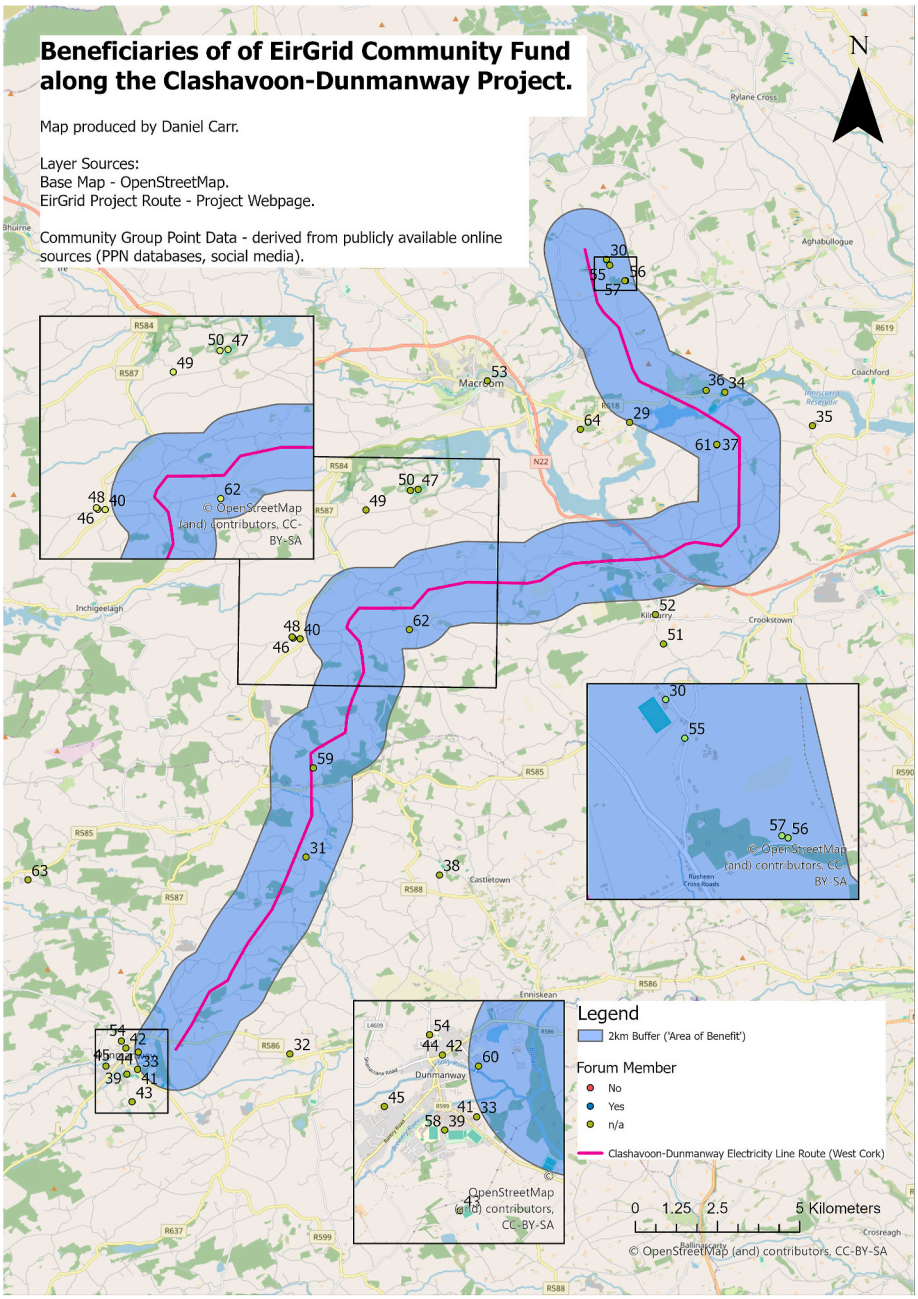

Fig. 4. Beneficiaries of case 1-CD community benefit fund.

5.1.2. *Community feedback*

A member of our research team attended the EirGrid Community Recognition Day held in Dunmanway in 2022. At this event, the survey was administered with 11 people completing it using physical copies and 2 people completing it online after the event. The overall responses to the questions posed (see: Appendix 2) were positive. In describing the community benefit fund, all 13 responses were positive; "*the cynical view would be that the Community Benefit* Fund *is only 'buying' local people, but you could say that it's extending the hand of friendship, that it's a gesture of good will*". In relation to working with both M-CO and EirGrid, all respondents reflected positively, with most viewing M-CO as having a more central role in the process. Interestingly, in reflecting upon learnings and skills developed through the process, most respondents felt they relied on their previous experiences and expertise in this space. Of the few that had learnings these related to becoming more comfortable applying for such opportunities and working more closely with volunteers.

Ten of the respondents felt that the introduction of the SDGs into the process had informed their community missions. This related to well-being, energy efficiency, biodiversity, and sustainable consumption. Most participants felt they would be interested in working in partnership with organisations on similar opportunities in the future. No one was against this potential, but a couple were unsure of their group's plans to move forward. In terms of improving the community fund process there were no suggestions with it viewed as straightforward, flexible and simple.

5.2. *Case 2-LK*

5.2.1. *Case outline*

The project consists of a 400/110 kV substation location at Coolnabacky, to the south-east of Portlaoise, Co. Laois, to connect two

existing overhead lines; a 400 kV line between Moneypoint and Dunstown and a 110 kV line between Athy and Portlaoise (Fig. 5). Alongside this, a new smaller 110/38 kV substation at Ballyragget, Co.Kilkenny with two new 110 kV lines connecting the two substations has also been developed. Upgrades to the Ballyragget-Kilkenny line and the Athy-Portloaise line are also included within the work. Considerable opposition to the project within affected communities was mobilized in the years prior to our investigation. Although not within the timeframe or scope of this research, this opposition warrants further investigation and research. Some of the main reasons for opposition related to concerned the substations potential to facilitate further industrial development of the area, considered by protestors as unsustainable for the region (Mooney, 2020; Ganly, 2018). The emergence of opposition may have emanated from poor engagement practices as delivered through EirGrid's previous engagement strategy (Boyle et al., 2024).

In 2020, EirGrid and ESB Networks announced that a voluntary community forum would be established. A project community fund was launched in 2021, with the community forum (consisting of civic, social, and political representatives) providing input into the administration of the fund. The community forum was outlined as a recommendation by Irish Rural Link in an independent assessment of the project (Boland and Dooley, 2020), considering the distrust which emerged at an early stage whereby;

> "the engagement at the very beginning and by the entity (EirGrid) was really poor and it didn't really answer questions and it allowed a system to develop or a situation to develop whereby massive trust was being broken". (I4)

Information sessions and public meetings were held, followed by an expression of interest period and the establishment of the community forum. Through this process trust began to be re-established, yet still remained a challenge;

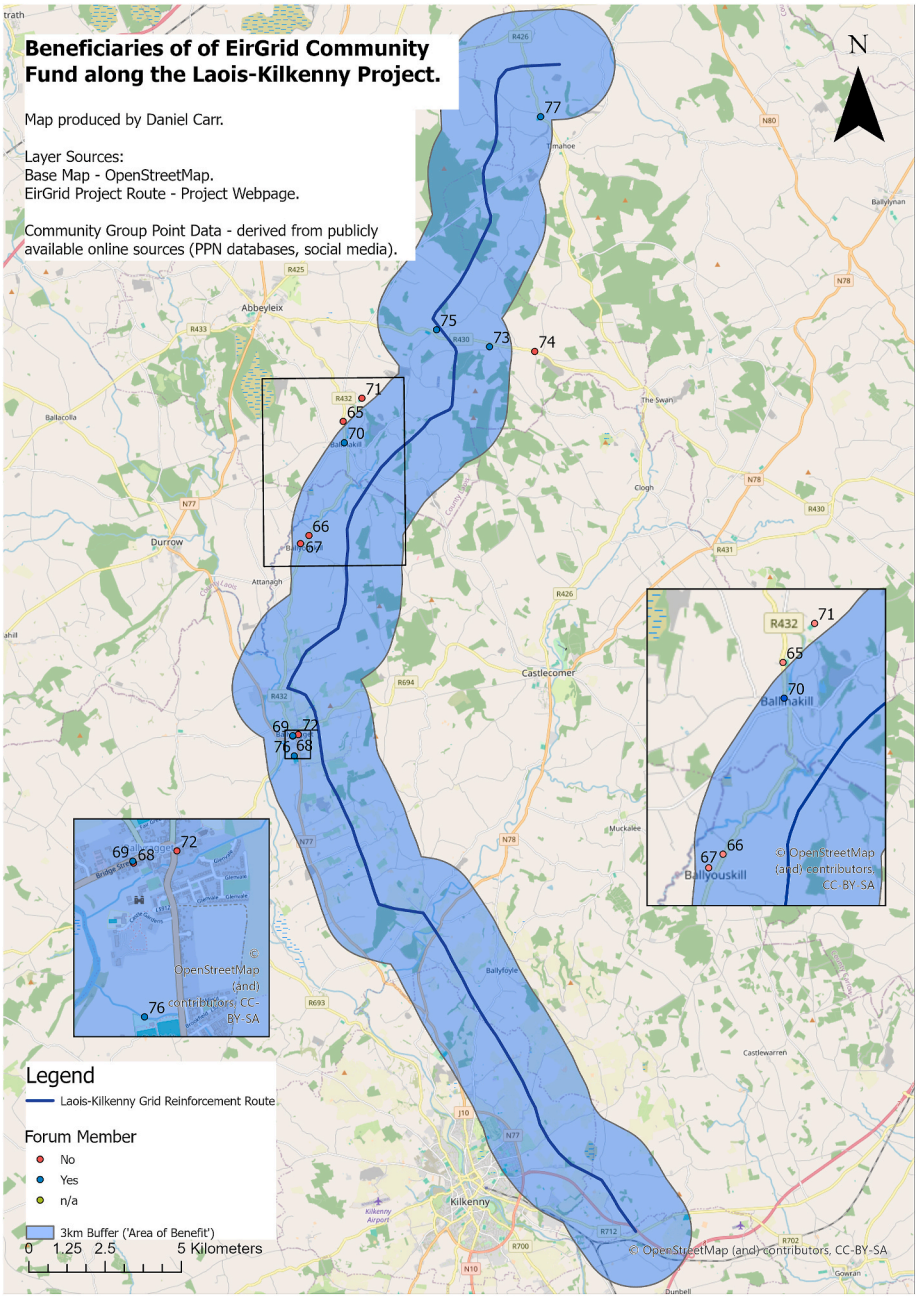

Fig. 5. Beneficiaries of case 2-LK community benefit fund.

> "I think it will take a little bit of time before you could confidently say that there is now a full trust there … I think the community there is still very much affected … I don't know if that will change a great deal and so I think it'll take a lot of time". (I4)

In late 2021 the community benefit fund became open for applications, following the development of a community fund strategy with Laois-Kilkenny Community Forum. €204,600, 40% of the total fund value, was made available in this first phase of the fund roll-out. Priority was given to applications in areas within 3 km of the works. Of the total €511,500, the first 40% was awarded to successful applicants in April 2022. The fund administrator played a central role in preparing applicants through this process, ensuring they understood all aspects and requirements;

> "the more prepared the groups are and the more aware they are … you don't want to frighten them away, but you want them to be fully prepared with everything that they need on their side in terms of documentation, things like tax clearance, having your own bank account" (I5)

5.2.2. Community feedback

During the focus groups, surveys were disseminated as outlined in the methods section above. Responses to the survey were visualised as a word cloud and presented in real-time to participants for group discussion during the focus group. The sentiment expressed regarding the community benefit fund was mainly focused on an appraisal of its value over its function and procedural structure. In this regard, it was viewed favourably as an opportunity for community enhancement which was accessible and could be leveraged to develop projects locally. Similarly, to the experiences of working with M-CO, the respondents viewed the experience of working with EirGrid positively with no negative sentiment. Neither group was specifically referenced by respondents so there was no delineation between the experience of working with either group. Learnings and skills development in relation to new means through which to engage with different local groups and the development of project management skills were noted by respondents. On from this, it was recognised that further training for members of community organisations would be beneficial. Most participants found the introduction of the SDGs helpful to their ongoing community work. A few were unsure of its benefit or left the question blank. Awareness raising with regards to the SDGs coupled with using them as a means through which to make decisions about community development were highlighted as important considerations.

Some core structural aspects of how the community benefit fund was designed were outlined as areas for improvement by participants. The cost of finance, whereby groups must pay for their projects upfront before claiming back through the fund, was viewed as onerous on groups. As a solution, direct payments to groups were suggested alongside interest-free loans. The potential for joint submissions was seen as a potentially beneficial avenue to increase the impact of funds, whilst also potentially minimising administrative burdens. With regards to developing further new skills, some group specific points were raised such as media and marketing skills and first aid to support outdoor activities. More strategically focused skills were mentioned in relation to sustainable energy production and energy efficiency, highlighting the potential of match funding through other bodies to enable energy related activities and the need for more direct capacity building at the local level for the energy transition to be undertaken across society.

The community benefit fund was viewed as supporting the communities to develop projects but had not changed their primary objectives moving forward. While this is not the aim of EirGrid, deeper consideration at a national level is needed regarding building capacity for groups to work more closely on climate action, adaptation, and the energy transition. All groups responded favourably towards further opportunities to work with similar agencies and bodies moving forward (See: Appendix 2; Tables 1–4 for further details on community feedback from Case 2-LK).

5.3. Case 3-CI

5.3.1. Case outline

The Celtic Interconnector is a subsea link to allow the exchange of electricity between Ireland and France (Fig. 6). The interconnector is co-funded by EirGrid and RTE with co-financing from the EU. In 2019, €530.7 million was awarded to the project from the European Commission's Connecting Europe Facility for the design and delivery of the project. After following their established six-step strategy for public engagement (Boyle et al., 2025) ensuring community involvement in the development of the project, An Bord Pleanála granted planning permission to EirGrid for the Celtic Interconnector Project in May 2022. SECAD, appointed fund administrator in June of 2021, overtook the development of the community benefit fund strategy with the established community forum and the wider community through information sessions, surveys and media notices. The fund is to a total of €2.4 million, split over three phases and equally proportioned across three categories: Community, Sustainability, and Biodiversity. In late 2022, SECAD circulated a survey within the area and ran six information sessions in community centres across the cable route. From this, close to 500 submissions were received. The data from these surveys were combined with input from forum members, workshop discussions of the community forum, and stakeholder interviews to develop the community benefit fund strategy, which was then presented to and ratified by the community forum.

> "The strategy wasn't around projects, it was around teams and priorities and users and community needs … through the strategy we were able to work with EirGrid quite closely to shape it so that there weren't communities being left behind in terms of their needs" (I8)

Following evaluation on Phase 1 (2023), 29 successful applicants were announced. €320,000 was allocated to community stream, applications. The €960,000 available in Phase 1 represents 40 percent of the total €2.4 million Celtic Interconnector Community Benefit Fund.

Speaking prior to the fund being launched, this was acknowledged as a potential challenge;

> "To submit for funding requests under the three headings may be a bit difficult and may result in communities fragmenting their requests or forcing their request under certain headings that don't necessarily correspond to what those headings are" (I6)

5.3.2. Community feedback

The format of results follows the same approach as Case 2-LK. Interestingly, as the level of depth to the process increases, the number of recommendations for its improvement follows. The further engaged with groups are, the more recommendations they have towards the improvement of the process highlighting an increased capacity in the space of funding. Similar to earlier respondents within the previous cases, the experience of working alongside EirGrid and the fund administrator (SECAD) was viewed favourably. Some participants noted their more direct engagement with SECAD, as fund administrator while another highlighted the early engagement of EirGrid, relating back to the six-step strategy as praiseworthy. In describing the fund, an effort for community buy-in was suggested alongside an opportunity for project development to benefit communities. The three streams, unique to this case, were also highlighted. Managing the complexity of the process through regular meetings and engagement was commended.

The importance of sustainability as a framing for community development was highlighted as a key learning point by several participants. The standard of required submission coupled with the onerous nature of form filling were highlighted, while another respondent had previously developed skills in this space. In relation to the SDGs, most

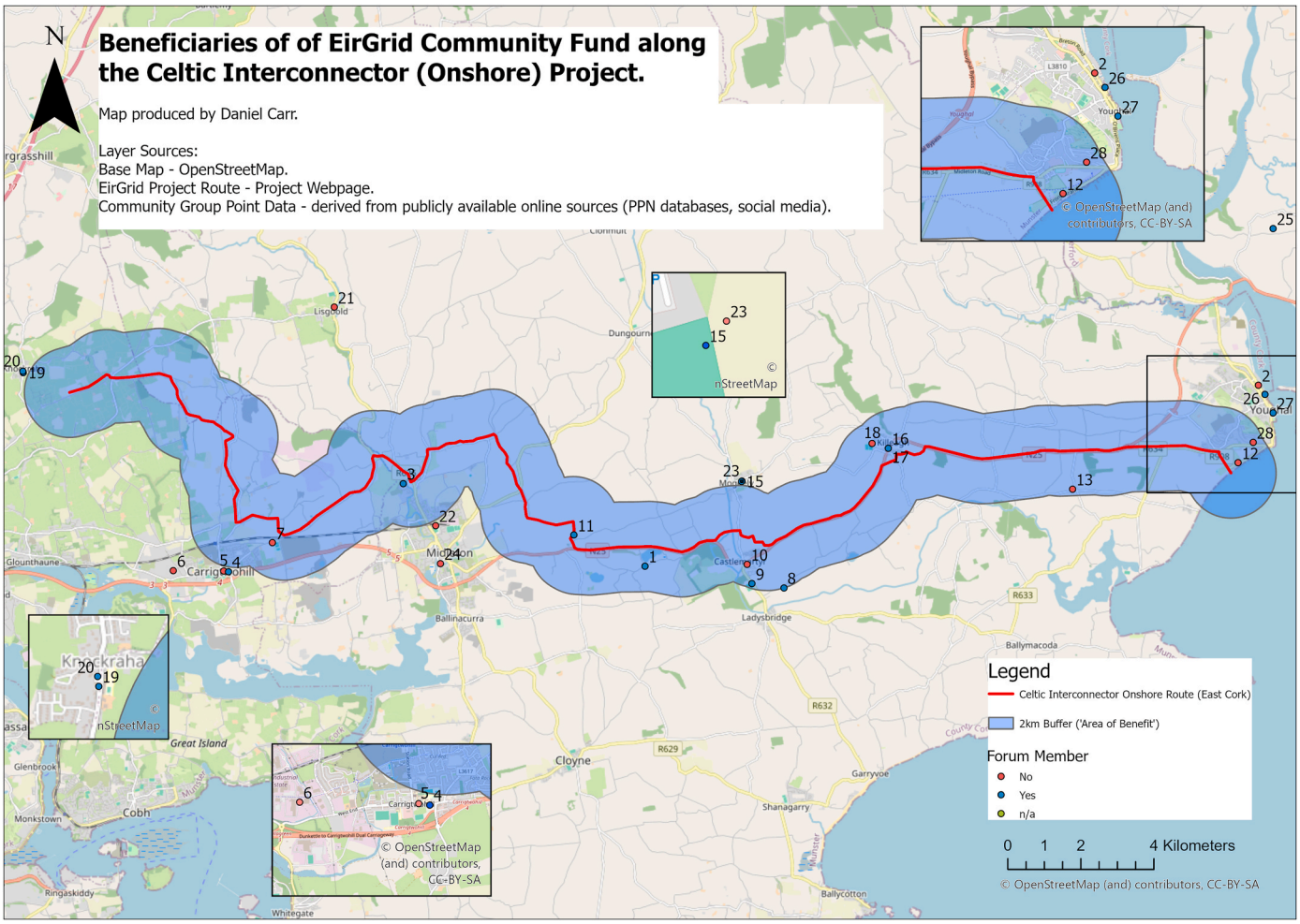

Fig. 6. Beneficiaries of case 3-CI community benefit fund.

found them to be a useful framing through which their group's mission could be developed. One deemed it to not be of value whilst 2 respondents considered it "not applicable". Repeat responses have been grouped together.

The three-strand approach across the thematic areas of biodiversity, sustainability, community were called into question in some responses with a need for more capital projects outlined. Second to this, the application process and the online system of reporting provided minor challenges to some respondents. The importance of small-scale projects receiving full funding was noted, as *"a community project does not have to be a large project"*. Regarding new skills, more knowledge on grants and how to *"tap into"* this funding infrastructure were noted by several participants. More information on biodiversity was also seen as a potential area of capacity building, as represented through the underprescribed associated stream. The participants in the focus group saw the fundings as important to achieving their objectives moving forward and provided an opportunity to increase the scale of work undertaken. Across all respondents, similar opportunities in the future would be sought to work with other state agencies and bodies highlighting the favourable perception of the process across the focus group participants. (See: Appendix 2; Tables 5–8 for further details on community feedback from Case 2-LK).

5.4. Recommendations from communities for community benefit funding approaches

Here, we outline the main recommendations across the two focus groups. The recommendations were grouped and compiled over the areas of suggestions for support and suggestions for fund management. A voting exercise was conducted online with participants ranking importance on a scale of 1–5. The aggregated score out of 5 is provided for each. 13 of the 25 participants completed the exercise. Case 1-CD was not part of the exercise due to limitations on our research engagement with the community groups. Due to limited sample size/completion rate, the ranked results are not suggested as absolute but rather indicative of sentiment. These recommendations prove useful in relation to emergent policy for community benefit funding in the development of not only grid infrastructure, but also renewable energy production (Table 1).

6. Discussion

6.1. A structured approach to community benefit funding

It is useful to reflect on the results in the context of the research question, "how do different structured approaches to community benefit funding support community development and wider sustainability goals?" In Case 1-CD, whereby the community benefit fund was given over in a single round and placed little importance on specific thematic funding, the participants were strongly supportive of the approach taken by the TSO but offered little guidance to its improvement moving forward. While this positively represents the role of the fund administration and community liaison officers within EirGrid, it has limited scope with relation to building capacity for wider sustainability, the energy transition, or climate action.

Table 1
Ranked reflections on Community Benefit Fund from community representatives of Case 2-LK and Case 3-CI.

Suggestions for support	Suggestions for fund management
Gain feedback on unsuccessful applications. 4.46	Funding should focus on community involvement and inclusion. 4.46
Access to training/supports on sustainability and energy related topics 4.31	Upfront or bridge funding to overcome incurred costs of financing. 4.31
Sharing experiences from other communities to help build community capacity and building networks of community groups to maximise impact of projects. 4.31	Direct communication with funding sources to limit consultation costs. Professional expertise within fund providers and fund administrators should be retained and made available to community groups. 4.08
A list of recommended service providers and trade people for project areas 4.15	Simplifying the forms would help support community groups. 4.00
Identification of long-term needs for different communities. On-site support in building funding applications informed by local site/location. 4.08	Smaller applications should receive 100 % funding if successful. 3.77
A "cheat sheet" for community groups on funding opportunities and supports 4.08	More flexibility needed on project timelines. 3.62
Talks and workshops to build capacity including capacity building on measuring social, economic, and environmental impact of projects and further guidance and training on project funding. 4.08	Capital projects should be given a greater share of funding. 3.54
Continuous assessment of community needs as they develop and change over time. E.g. a document outline priority areas for community development. 4.00	The design of reporting procedures could be improved. 3.17
Support in defining project ambition. 3.85	Funding should be allocated through geography to take out competitive aspect which can be divisive. 3.15
Core funding for employment of staff 3.46	

In the third case, Case 3-CI, where more structure was placed on the funding, some participants struggled to accept equal weighting across the strands of sustainability, biodiversity, and community. Instead, they viewed community as their core focus. In dealing with volunteerism, this is a balanced reflection. The challenges of a reliance on community volunteerism within the energy transition has been previously discussed (Horstink et al., 2020; Sterling Gregg et al., 2020; Brummer, 2018). However, alongside this, the positive sentiment of volunteers to work on local issues should not be understated. More work is needed on building capacity in local areas so that volunteers can see the opportunities to leverage funding for sustainability and climate action whilst also meeting local objectives. EirGrid has begun developing this capacity by introducing training on the sustainable development goals.

Much of the literature on community capacity within the energy transition is more specifically focused on community energy (Haggett and Aitken, 2015; Leonhardt et al., 2022; Seyfang and Haxeltine, 2012). From our investigation, we show that more work is needed to develop community capacity to develop their projects which are firstly of their own desire and secondly can be aligned with emergent sustainability considerations such as biodiversity and energy. This community capacity is at one time general and applied to the processes in place to access funding, manage funding processes, and deliver impactful projects for their own contexts and, secondly, builds knowledge and skills in relation to aspects of the transition and biodiversity agenda and the associated opportunities it presents. The latter should prevent the former and instead support community development. More work is needed for envisaging such capacity building work and the policy and expertise context in which it can be delivered. The wider potential for community wealth building is aligned with community benefit funding related to infrastructure but also must acknowledge the need to enable the citizenry to enact a role within such processes when met with increasing pressures on capacity borne out of neo-liberal processes. In a European context, continuing on from 20th Century diagnoses, civil society participation is in increased decline (Del Monte and Steinhilper, 2022). The opportunities presented by the energy transition can provide means through which community wealth building can be achieved across a range of activities and innovations (Lacey-Barnacle et al., 2023). Despite this, however, it must be clearly acknowledged that further thought and effort is needed regarding how communities and citizens can be empowered to participate and take advantage of these opportunities. The broader field of deliberative democracy can also offer assertive insights on theory and practice in this space (Curato et al., 2021).

6.2. *Who in the community benefits from funding?*

For Case 2-LK and Case 3-CI, the procedural and distributional aspects of how the fund is used in the community are important to note. In both cases, community forum members were also participants in the fund. When applied as a mechanism for undertaking public engagement, the community forum structure has the potential to represent a conflict of interest in firstly acting as a representative of the wider community, and by being involved in shaping the community benefit fund strategy. EirGrid mitigated this risk by setting up the establishment of terms of reference (TOR) for forum members which are reviewed annually. Within the TOR, the forum members' roles as representing their community groups and wider community are outlined. A rigorous and transparent approach to the funding application process was also applied. In the cases shown here, 54 % and 48 % of funded projects were associated with organisations and groups participating in the community forum (See: Figs. 5 and 6). As the maps show, the benefit from projects (see: Appendix 1-3 for detail) is well spread across the boundaries. The distributional impact of the fund across the host communities could be studied through longitudinal analysis. In relation to the participatory considerations, difficulties exist regarding how to engage beyond the established community actors. As previously noted, a "community" is often created when a project emerges rather than is established and responds to said project opportunity (Bristow et al., 2021). While the role of the forum chairs and fund administrators have taken steps to ensure a fair and balanced representation of the communities in question, this still represents potential challenges that must be considered when administering funding.

EirGrid's implementation of community benefit funds offer valuable opportunities to explore emerging strategies for engaging frontline communities in the sustainable transition of energy systems. The role of community benefit funds as tools for fostering greater public acceptance of energy infrastructure and facilitating local collaborative opportunities with grid technologies is particularly relevant in this context. This undoubtedly is closely tied to local perceptions regarding the benefits and impacts of these funds for communities, including their potential value in mitigating the disruptive effects associated with energy infrastructure development. However, there are complexities in interrogating perceptions over the merits of community benefit funds. Questions remain about procedural processes, namely how local voice and input are experienced from a community perspective. Equally important is the distributional aspect of the community benefit fund regarding inclusive access to the funds. Additionally, local communities' perceptions of the developers and other stakeholders greatly inform how impact is perceived on the ground. Finally, 'community benefits' can be construed or prioritised in various ways, and local environmental sustainability is one of many local benefits and often competes with other local socio-economic variables.

6.3. *Conclusion and policy implications*

With community benefit funds becoming more common, Glasson

(2021) has argued that there is an evolving convergence and divergence in practices associated with CBFs. For instance, the annual community benefit approach, as opposed to lump-sum payments, is becoming the norm, as is the use of independent fund administrators. Variations are plentiful, however, and include differences in criteria for the allocation of funding, fund delivery processes and target beneficiaries of funding. The implications of this for future schemes are very relevant. One key question emerges here: should we move toward more standardised practices, or should developers and communities be allowed to define the parameters of CBF design and delivery wholly? Rudolf et al. (2014) offer a halfway solution to this quandary by recommending that non-restrictive guidance should be given to retain needed flexibility for communities. Walker et al. (2017), on the other hand, argue that more formalised provision of benefits can be regarded as 'complying with policy rather than purposely trying to buy local acceptability' (p.6). As such, more formalised processes could add credence to CBF across different communities.

Bearing in mind the debates and by way of providing policy recommendations and suggestions for future research, we stress that from a policy perspective, it would be advantageous to establish a set of principles and guidance notes that set out and frame the community benefit schemes as a foundational part of implementing energy projects locally and, as such, provide more transparency over the funds.

Helping frame these as a matter of energy policy rather than a tool for developers to 'buy' local permission for the new developments is relevant for adding legitimacy to the scheme (Aitken, 2010). Equally important is the design of a scheme that responds proactively to the needs and capacities within a community. The development of grant proposals and the delivery of community projects requires time, skills and money. Support in this area would ensure that more vulnerable or less equipped community groups could benefit equally from these funds. Reporting and evaluating the scheme based on such criteria would also be a step toward reducing inequalities in access to these funds. Specific recommendations emerging from community reflections (See: Table 1) are outlined below:

- Aligning community benefit funding with wider sustainability objectives represents an opportunity for co-benefits, however, capacity building is needed which should not be led by individual developers alone.
- The establishment of long-term needs analyses for communities located close to infrastructure may support alignment of CBF and wider objectives.
- The development of a network of communities at different stages of accessing and implementing funding can support capacity building.
- Developers should be supported through guidance in relation to best practice on community benefit funding and encouraged to work cross-organisationally to maximise the impact of funds.
- Fund administration has a major role to play in the administration of funds in developing infrastructure needed for the energy transition. Best practice informed approaches should be implemented and support provided to create more service providers.
- If capacity is not built in relation to sustainability and biodiversity at the community level, funding should not be ringfenced for such initiatives and instead remain open to community objectives.

We investigated EirGrid's implementation of community benefit funds through three distinct contexts and approaches, paying close attention to their various processes, including community forum representation, fund eligibility criteria, engagement with other stakeholders and links to sustainability. In asking "how do different structured approaches to community benefit funding support community development and wider sustainability goals?", we have found that the varied approaches to funding demonstrate that while immediate community support is essential, additional efforts are required to build local capacity for broader sustainability initiatives, energy transition, and climate action. Going forward, EirGrid should continue to enhance its capacity-building efforts by providing training and resources focused on sustainable development goals. Engaging diverse community members beyond established actors will strengthen participation and optimize the impact of community benefit funds. As such, a balanced approach that prioritizes both community needs and sustainability objectives is vital for successfully integrating community funding within energy transition strategies.

Overall, the findings reveal that communities were largely optimistic and positive about their perceptions of the fund and its impact locally. The premise of the community benefit fund as a new feature in the delivery of local energy infrastructure can be very valuable. Discarding these monetary mechanisms as potentially unethical, exploitative, and undesirable can be problematic. Mainly if the resultant corollary leads to abandoning this form of involvement scheme. Our research shows that community benefit funds can provide tangible mechanisms for moderating and compensating frontline communities impacted by energy infrastructural developments. However, this does negate the value of considering the nature of the relationships between a given frontline community, developers and other stakeholders. Community Benefit funds are arguably at a crossroads; they are no longer fringe arrangements between developers and communities (Slee, 2015), but are becoming dominant tools within the community engagement portfolio to support and empower communities. The potential for CBFs to channel sustainable local development is significant and complements the narrower notion that CBFs are tools for obtaining community acceptance of energy projects.

CRediT authorship contribution statement

Evan Boyle: Writing – original draft, Investigation, Formal analysis, Data curation, Conceptualization. **Alexandra Revez:** Writing – review & editing, Writing – original draft, Validation, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Daniel Carr:** Visualization, Software, Methodology. **Catriona Iulia Reid:** Methodology. **Aoife Deane:** Project administration, Methodology, Conceptualization. **Brian Ó Gallachóir:** Supervision, Project administration, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Evan Boyle reports financial support was provided by EirGrid Plc. Evan Boyle reports a relationship with EirGrid Plc that includes: funding grants. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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Data availability

Data will be made available on request.

References

Aitken, M., 2010. Wind power and community benefits: challenges and opportunities. Energy Policy 38 (10), 6066–6075.

Aitken, M., Christman, B., Bonaventura, M., Horst, D.v. d., Holbrook, J., 2016. Climate justice begins at home: conceptual, pragmatic and transformative approaches to climate justice in Scotland. Scott. Aff. 25 (2), 225–252.

Armstrong, J.H., 2021. People and power: expanding the role and scale of public engagement in energy transitions. Energy Res. Social Sci. 78, 102136.

Barritt, E., 2014. Conceptualising stewardship in environmental law. J. Environ. Law 26 (1), 1–23.

Baxamusa, M.H., 2008. Empowering communities through deliberation the model of community benefits agreements. J. Plann. Educ. Res. 27 (3), 261–276. https://doi.org/10.1177/0739456x07308448.

Bellamy, R., Chilvers, J., Pallett, H., Hargreaves, T., 2022. Appraising sociotechnical visions of sustainable energy futures: a distributed deliberative mapping approach. Energy Res. Social Sci. 85, 102414.

Boyle, E., Revez, A., Deane, A., Gallachóir, B.Ó., 2024. Levers and obstacles for implementing public engagement practices in electricity grid development. Heliyon 10 (15).

Boyle, E., Revez, A., Duffy, G., Farrell, A., Deane, A., Gallachóir, B.Ó., Wittmayer, J.M., 2025. Public participation in the development of electricity grid infrastructure: early engagements and community forums. Energy Res. Social Sci. 120, 103878.

Breakey, H., Bossi, L., Marshallsay, R., Sampford, C., 2025. Benefits or bribes? Ethical concerns with the potential corruption of civic obligations through community benefits schemes for wind farms. Energy Res. Social Sci. 127, 104154. https://doi.org/10.1016/j.erss.2025.104154.

Bristow, G., Cowell, R., Munday, M., 2012. Windfalls for whom? The evolving notion of 'community' in community benefit provisions from wind farms. Geoforum 43 (6), 1108–1120.

Cass, N., Walker, G., Devine-Wright, P., 2010a. Good neighbours, public relations and bribes: the politics and perceptions of community benefit provision in renewable energy development inthe UK. J. Environ. Pol. Plann. 12 (3), 255–275.

Cass, N., Walker, G., Devine-Wright, P., 2010b. Good neighbours, public relations and bribes: the politics and perceptions of community benefit provision in renewable energy development in the UK. J. Environ. Pol. Plann. 12 (3), 255–275.

Castleberry, A., Nolen, A., 2018. Thematic analysis of qualitative research data: is it as easy as it sounds? Currents in Pharm. Teaching Learn. 10 (6), 807–815.

Chilvers, J., Kearnes, M., 2020. Remaking participation in science and democracy. Sci. Technol. Hum. Val. 45 (3), 347–380.

Correljé, A., Hoppe, T., Künneke, R., 2024. Guest editorial: special issue on "Sustainable urban energy systems–Governance and citizen involvement". Energy Policy 192, 114237.

Cowell, R., Devine-Wright, P., 2018. A 'delivery-democracy dilemma'? Mapping and explaining policy change for public engagement with energy infrastructure. J. Environ. Pol. Plann. 20 (4), 499–517.

Cowell, R., Bristow, G., Munday, M., 2011. Acceptance, acceptability and environmental justice: the role of community benefits in wind energy development. J. Environ. Plann. Manag. 54 (4), 539–557.

Cowell, R., Bristow, G., Munday, M., 2012. In: Wind Energy and Justice for Disadvantaged Communities. Joseph Rowntree Foundation York.

Curtin, J., McInerney, C., Johannsdottir, L., 2018. How can financial incentives promote local ownership of onshore wind and solar projects? Case study evidence from Germany, Denmark, the UK and Ontario. Local Econ. 33 (1), 40–62.

Curtin, J., McInerney, C., Gallachóir, B.Ó., Salm, S., 2019. Energizing local Communities—What motivates Irish citizens to invest in distributed renewables? Energy Res. Social Sci. 48, 177–188.

Devine-Wright, P., Sherry-Brennan, F., 2019. Where do you draw the line? Legitimacy and fairness in constructing community benefit fund boundaries for energy infrastructure projects. Energy Res. Social Sci. 54, 166–175.

Devine-Wright, H., Devine-Wright, P., 2009. Social representations of electricity network technologies: exploring processes of anchoring and objectification through the use of visual research methods. Br. J. Soc. Psychol. 48 (2), 357–373.

Ellis, G., Barry, J., Robinson, C., 2007. Many ways to say 'no', different ways to say 'yes': applying Q-methodology to understand public acceptance of wind farm proposals. J. Environ. Plann. Manag. 50 (4), 517–551.

ESRI, 2023. Overview of georeferencing. https://pro.arcgis.com/en/pro-app/latest/help/data/imagery/overview-of-georeferencing.htm. (Accessed 16 January 2025).

Flachsbarth, F., Wingenbach, M., Koch, M., 2021. Addressing the effect of social acceptance on the distribution of wind energy plants and the transmission grid in Germany. Energies 14 (16), 4824.

Glasson, J., 2021. Community benefits and UK offshore wind farms: evolving convergence in a divergent practice. J. Environ. Assess. Pol. Manag. 22 (01n02), 2150001.

Gregg, J.S., Nyborg, S., Hansen, M., Schwanitz, V.J., Wierling, A., Zeiss, J.P., Delvaux, S., Saenz, V., Polo-Alvarez, L., Candelise, C., Gilcrease, W., 2020. Collective action and social innovation in the energy sector: a mobilization model perspective. Energies 13 (3), 651.

Hill, L.L., 2006. Georeferencing: the Geographic Associations of Information. Mit Press.

Horstink, L., Wittmayer, J.M., Ng, K., Luz, G.P., Marín-González, E., Gährs, S., Campos, I., Holstenkamp, L., Oxenaar, S., Brown, D., 2020. Collective renewable energy prosumers and the promises of the energy union: taking stock. Energies 13 (2), 421.

Huttunen, S., Ojanen, M., Ott, A., Saarikoski, H., 2022. What about citizens? A literature review of citizen engagement in sustainability transitions research. Energy Res. Social Sci. 91, 102714.

Hyland, M., Bertsch, V., 2018. The role of community involvement mechanisms in reducing resistance to energy infrastructure development. Ecol. Econ. 146, 447–474.

Jansen, H., 2010. The logic of qualitative survey research and its position in the field of social research methods. Forum Qualitative Sozialforschung/Forum: Qualitative Social Research 11 (2).

Jeong, Y.-C., Kim, T.-Y., 2019. Between legitimacy and efficiency: an institutional theory of corporate giving. Acad. Manag. J. 62 (5), 1583–1608.

Jørgensen, M.L., Anker, H.T., Lassen, J., 2020. Distributive fairness and local acceptance of wind turbines: the role of compensation schemes. Energy Policy 138, 111294.

Kerr, S., Johnson, K., Weir, S., 2017. Understanding community benefit payments from renewable energy development. Energy Policy 105, 202–211.

Koecklin, M.T., Longoria, G., Fitiwi, D.Z., DeCarolis, J.F., Curtis, J., 2021. Public acceptance of renewable electricity generation and transmission network developments: insights from Ireland. Energy Policy 151, 112185.

Kojo, M., Richardson, P., 2014. The use of community benefits approaches in the siting of nuclear waste management facilities [Article] Energy Strategy Rev. 4, 34–42. https://doi.org/10.1016/j.esr.2014.06.004.

le Maitre, J., 2024. Price or public participation? Community benefits for onshore wind in Ireland, Denmark, Germany and the United Kingdom. Energy Res. Social Sci. 114, 103605.

le Maitre, J., Ryan, G., Power, B., O'Connor, E., 2022. Empowering onshore wind energy: a national choice experiment on financial benefits and citizen participation. Energy Policy 173 (113362), 2023.

Leonhardt, R., Noble, B., Poelzer, G., Fitzpatrick, P., Belcher, K., Holdmann, G., 2022. Advancing local energy transitions: a global review of government instruments supporting community energy. Energy Res. Social Sci. 83, 102350.

Määttä, S., 2024. Community-developer collaboration and voluntary community benefits in Scotland: are community benefits a gift or compensation? Energy Policy 191, 114164.

Mullally, G., Byrne, E., 2015. A tale of three transitions: a year in the life of electricity system transformation narratives in the Irish media. Energy Sustain. Soc. 6, 1–14.

RGI, 2018. Community Payments- Case Studies from Across Europe. Renewable Grid Initiative, Berlin, Germany. https://renewables-grid.eu/fileadmin/user_upload/Files_RGI/RGI_Publications/CommunityPayments_2nd_edition_2018_final.pdf.

Rudolph, D., 2014. The resurgent conflict between offshore wind farms and tourism: underlying storylines. Scott. Geogr. J. 130 (3), 168–187.

Rudolph, D., Haggett, C., Aitken, M., 2018. Community benefits from offshore renewables: the relationship between different understandings of impact, community, and benefit. Environ. Plan. C Politics Space 36 (1), 92–117.

Seyfang, G., Haxeltine, A., 2012. Growing grassroots innovations: exploring the role of community-based initiatives in governing sustainable energy transitions. Environ. Plann. C Govern. Pol. 30 (3), 381–400.

Soutar, I., Devine-Wright, P., Rohse, M., Walker, C., Gooding, L., Devine-Wright, H., Kay, I., 2022. Constructing practices of engagement with users and communities: comparing emergent state-led smart local energy systems. Energy Policy 171, 113279.

Tobiasson, W., Jamasb, T., 2016. The solution that might have been: resolving social conflict in deliberations about future electricity grid development. Energy Res. Social Sci. 17, 94–101.

Wahlund, M., Palm, J., 2022. The role of energy democracy and energy citizenship for participatory energy transitions: a comprehensive review. Energy Res. Social Sci. 87, 102482.

Walker, G., Cass, N., 2007. Carbon reduction,'the public'and renewable energy: engaging with socio-technical configurations. Area 39 (4), 458–469.

Walker, B.J., Wiersma, B., Bailey, E., 2014. Community benefits, framing and the social acceptance of offshore wind farms: an experimental study in England. Energy Res. Social Sci. 3, 46–54.

Wynberg, R., Hauck, M., 2014. People, power, and the Coast: a conceptual framework for understanding and implementing benefit sharing. Ecol. Soc. 19 (1).