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The challenges of engaging island communities: Lessons on renewable energy from a review of 17 case studies

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ABSTRACT

Islands have attracted growing attention as sites of renewable energy generation, both for generating commercial low-carbon energy and to improve local energy conditions. However, significant challenges exist in achieving fair distribution in the benefits and costs of developments located on or around islands and in engaging local communities on proposals for installations. A broad literature exists on the merits of different community engagement techniques but important gaps remain in understandings of the particular challenges of engaging with island communities on energy issues. Based on a thematic literature review, this article examines general principles and considerations for community engagement on energy developments, features of islands that can affect community engagement, and how past engagement processes have sought to encourage community participation, gain trust, and manage conflicts over developments. The review indicates that island communities appeared to be particularly concerned with ensuring that engagement processes give adequate priority to securing local benefits and incorporate credible mechanisms for managing intra-community conflicts. The article concludes by arguing that islands provide important arenas for testing not just new energy technologies but also ways to improve the integration of justice principles into community engagement on energy issues.

1. Introduction

Islands occupy an important role in many national strategies to decarbonise energy systems and expand renewable energy generation. Islands often serve as testbeds for new technologies whose siting is also justified by claims to deliver benefits to host islands through blue and green economy investment and employment [1]. The Valletta Declaration of 2017 identifies EU islands as forerunners in a European transition to clean energy, while the EU's 2020 offshore wind strategy aims to increase Europe's offshore wind to at least 60 GW by 2030 and 300 GW by 2050, complemented by 40 GW of ocean energy and floating wind and solar technologies [2,3]. Such aspirations have the potential to address many energy difficulties experienced by non-interconnected islands created by dependence on fossil-fuel imports, high energy costs, emissions from diesel generators, and unreliable energy supplies [4,5].

Despite the prospective benefits of renewable energy developments for decarbonisation agendas and island communities, larger energy projects particularly have the potential to produce adverse impacts on island- and marine-scapes, local industries, and the cultures and autonomy of islands by drawing them into new and sometimes unequal economic and political processes [6]. Such impacts are difficult to generalise because each island possesses its own physical, social and economic characteristics. The potential sensitivity of islands to energy projects combined with salutary lessons from other renewable energy arenas of hostility towards incongruous or inappropriately-scaled developments nevertheless suggest a need to ensure projects are appropriate to the circumstances of each island and for greater attention to be paid to the ways affected communities are engaged in decision-making on renewable energy projects [7,8].

Extensive research has been conducted on methods to promote inclusivity and fairness in community involvement in energy siting

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decisions [9–11]. Despite general agreement on the importance of tailoring engagement to the socio-cultural and political characteristics of places [10,11], island communities arguably represent geographical, economic, social, cultural, and political 'outliers' that test the limits of standard practices. Equally, perceptions that island communities hold shared values towards renewable energy are problematic, when island populations – despite arguably sharing certain notions of 'islandness'[1] – consist of groups and individuals with diverse experiences, knowledges, values, and priorities [14–16]. Islands also often have complex political, social and economic relationships with mainland territories and are the subject of multiple imaginaries about their identities and roles [17]. The importance of islands to energy transitions, the risk of projects causing alienation and adverse environmental and social effects, and the complex ontology of island communities, suggests a need for more detailed analysis of the factors shaping engagement with island communities on energy projects.

This article responds to this agenda by examining lessons on engagement with island communities on renewable energy projects. A thematic literature review (Section 2) is used to explore: general principles of community engagement (Section 3); features of island communities potentially affecting discussions on energy issues (Section 4); experiences from engagement processes across 17 case studies (Section 5); and lessons for promoting fair and constructive discussions on energy developments on and around islands (Section 6). The review focuses on the challenges faced by developers and authorities seeking to discuss energy projects with island communities and the final section also explores future directions for research on community engagement on island energy transitions. The review indicates that island experiences provide important insights on the wider challenges of community engagement on renewable energy. The analysis shows that certain features of islands means that, alongside enthusiasm for projects, common difficulties with community engagement can be magnified and more damaging. These relate particularly to *encouraging participation*, *building trust* and the potential mismatch between local and developer goals, and *managing conflict* situations. We argue from this that islands provide important arenas for testing not just new energy technologies but also ways to improve the integration of justice principles into community engagement on energy issues.

2. Review methodology

The methodology for the review consisted of three sequential stages of enquiry. The first explored general literature on community and public engagement on energy issues to establish understandings of the idea of engagement, the main motivations for engagement, and recognised practices used in engagement processes. The next stage reviewed general literature on islands to identify features of island communities potentially affecting engagement with energy technologies and considerations for recognised engagement techniques. These lines of enquiry were then used to interpret the engagement processes used in the case study islands examined, mapping the successes and difficulties experienced during engagement processes.

The final review followed a more systematic approach, though the full use of standardised selection and reading processes [18] was not appropriate to capture the diverse experiences of island communities. To identify relevant studies, synonyms for search terms relating to the role of communities, energy systems, and island context were used, based on an initial review of the literature (Table 1). Searches were conducted using Web of Knowledge, Scopus, Environment Complete, JSTOR, Emerald, Science Direct, Soc Index, IBSS, Sage Knowledge, and Google Scholar to identify cases from the literature. Academic databases were searched in detail along with the first five pages of Google Scholar searches. The screening criteria were that each case: (a) involved community engagement on energy transition decision-making, excluding distributed generation and consumer behaviour-change initiatives and social-movement activism not involving collective decision-making[2]; (b) involved engagement on an energy installation on an island; and (c) took place between 2000 and January 2020. An additional condition was that there was sufficient English language documentation to analyse each context and engagement process, dynamics, and experiences. The cases inevitably provide a partial account of island communities' involvement in discussions on energy projects but nonetheless yield a rich account of the social dynamics of engagement across a range of communities.

Table 1
Terms for identifying case studies.

Public:	Energy technologies:	Context:
- Public/population/ societal/community engagement - Public participation - Public consultation - Public involvement - (energy) co-operative - grassroots innovation (s) - upstream engagement - partnership - citizen science - open innovation - civil society - energy user	- Renewable energy - Renewable energy technologies - Smart grid (system/ technologies) - Distributed smart grid (system/ technologies) - Low carbon energy technologies - Low carbon energy transition - Microgeneration - in-home display/smart meter - photovoltaics/Solar PV - wind energy - offshore wind - onshore wind - marine energy - marine renewable energy - wave energy - tidal energy - demand side response/demand side management/critical peak pricing/peak load shaving	- Island(s) - Isolated territory/ territories - Island context(s) - Island community/ communities - Isle(s) - Micro-/ mini-/ nano-grids - off-grid communities

17 case studies were reviewed (Table 2), focusing on participation and procedural issues shaping engagement activities. Rather than evaluating participation as discrete events [19], the analysis probed the broader relationships within island communities and between island and mainland actors, and the power dynamics, contextual and cultural processes affecting engagement [20,21]. The analysis was organised thematically to reflect the three issues of *encouraging participation*, *gaining trust*, and *managing conflict* identified as critical to engagement processes in the review of general literature (Section 3). Coding structures to analyse themes were jointly created and tested on sample cases to ensure inter-coder reliability prior to the main analysis. One challenge for the review was the timing of the studies. The literature on sustainable energy on islands is expanding rapidly but the approach could only capture published academic evidence and not emergent engagement activities. However, the review aimed less to provide a real-time or comprehensive analysis of all experiences compared with identifying recurring issues that remain relevant outside the study period. The findings are also partial with respect to examples not documented in the English-language literature.

3. Motivations, styles and practices of engagement

Terms such as community engagement and public participation are

[1] The term islandness is used to encapsulate the shared characteristics of islands that transcend individual contexts, incorporating senses of culture, identity, belonging, autonomy and connection, and connections to land- and sea-scapes [12,13].

[2] These categories were excluded to focus on projects: (i) with a primary emphasis on larger developments, usually proposed by external actors; and (ii) where engagement centred on energy generation rather than consumption that might involve different engagement dynamics. However, these types of initiative provide further avenues for research exploring engagement processes surrounding different types of energy project.

Table 2
Summary of case studies included in literature review.

Country	Projects	Project summary
Australia	King Island, Tasmania: Wind energy project	Wind energy conflict [22]
	Magnetic Island: Residential peak electricity demand reduction	Success factors for interventions to reduce peak electricity demand [23]
Denmark	Samsø: Renewable Energy Island	Innovative practices and problems with consultation on offshore wind energy projects [10,11,24,25,26]
Ireland	Rathlin Island: Proposed marine energy developments	Consultation and participation with commercial fishing groups on marine energy projects [27]
	Inis Oírr, Aran Islands	Transdisciplinary approaches to low-carbon energy transitions and community energy planning [28]
Italy	Sicily: Geothermal energy proposal	Public engagement with geothermal energy [29]
Korea	Jeju Energy Corporation	Publicly owned wind energy [30]
Netherlands	Texel	Local renewable energy cooperatives [31]
Scotland	Pentland Firth and Orkney non-statutory pilot regional marine spatial plan	Consultation on pilot regional marine spatial plan [32]
	Lewis: Rejected windfarm, Barvas Moor; community wind project, Baile an Truseil	Deliberative planning and understanding transition-periphery dynamics [33,34]
	Scottish islands	Community groups engaged in energy mobilisation [35]
	Highland and Islands: marine and community projects	Governance and energy democracy for marine renewable energy [36,37,38]
	Orkney: marine energy development	Research agendas for social studies in marine renewable energy [39]
	Orkney: Community-owned wind energy and hydrogen fuel production	Islands as laboratories for energy futures. Legitimacy, withdrawal, and decentralized energy [40,41]
	Unst, Shetland	Community-owned Promoting Unst's Renewable Energy project (PURE) [42]
USA	Long Island Solar Farm (Brookhaven National Laboratory site)	Development and partnerships for solar energy [43]
	New England islands: Offshore wind	Trust, justice and acceptance of offshore wind energy [44–46]

notoriously vague and often gloss over the many possible alternative ways of interacting with people on energy issues [47]. Community engagement in this context typically refers to long-term arrangements to engage the public through an 'ongoing, two-way or multi-way process, in which relationships rather than decisions may be focal' [48]. As with other literature on local responses to energy projects, we define community in spatial terms [16] and use community engagement to refer to all activities by developers and authorities involving individuals, community groups and businesses close to a proposed project. Such activities often involve collaborative working to address issues affecting livelihoods, social well-being and values [49]. To set the scene for the later analysis of the challenges of engaging with island communities on energy projects, this section explores general motivations, styles and practices of engagement.

3.1. Motivations for engagement

The literature identifies three main motivations for community engagement on energy projects [50]. *Instrumental* rationales focus on securing social acceptance for projects and remain common despite criticism from an energy and social justice perspective [39,44]. *Normative* rationales stress people's right to participate in decisions to promote fairness in the distribution of costs and benefits of energy projects and the procedures used to make decisions [14,51,52]. Finally, *substantive* rationales recognise that residents possess specialist knowledge about their areas that can be utilised to improve decisions [50,53]. Devine-Wright [54] adds that it should not be assumed lay people are unfamiliar with technical, legal or policy issues [55], while Jenkins *et al.* [56] stress that mobilising local knowledge acts as a mechanism for promoting inclusion and distributive justice.

Public engagement is also stipulated in UK, European Union and international law. Internationally, the Aarhus Convention commits signatories to creating public rights of access to environmental information, participation in environmental decision-making, and access to justice on environmental matters [57]. The EU environmental impact assessment and strategic environmental assessment directives, meanwhile, create protocols for public engagement, while at the country level, Johnson *et al.* [32] highlight how even Scotland's generally 'top-down' marine planning system incorporates statutory requirements and procedures for public participation. The focus on community engagement is also exemplified by the Sustainable Energy Action Plan for the island of Samsø, which aims 'to ensure the continued anchoring in the local community of the actions initiated and strive for public ownership of the fossil independent island' [58, p.6].

Stipulating community engagement requirements does not guarantee inclusive discussions or community influence because developers' approaches may be influenced by their underlying goals. Some motivations focus on achieving national targets for emissions reduction and low-carbon energy [36,59,60]. For example, Sweden and Scotland have targets to achieve net zero emissions by 2045, while the UK, France, Denmark and New Zealand have adopted 2050 targets [32,61]. Increased renewable energy production can also improve national energy security and alleviate energy poverty by reducing fuel imports and exposure to energy-price fluctuations [32,36,60,62]. Although these are invoked most frequently for large-scale deployments, community energy is also promoted as enabling affordable and reliable local energy. Self-sufficiency, empowerment, and engagement feature in the narratives of many community energy projects [63,64], while another goal may be to establish 'green' industries and employment in peripheral regions [29,36,61,65]. Although such goals may appeal to some communities, benefits may prove elusive where local labour forces do not possess sought-after skills or employment is restricted mainly to the construction phase of projects [59].

Major projects to meet national targets may involve limited negotiation and engagement may happen mainly for instrumental reasons rather than serving a material purpose or encouraging active engagement [54,66]. Project goals may equally create tensions between local and wider priorities. Haggett [59] notes that community actors may be primarily concerned about personal and local risks and benefits and be sceptical about making local sacrifices to achieve national emissions or energy security goals [29,67]. In contrast, projects addressing local energy insecurity and poverty are more likely to incorporate normative and substantive rationales and involve more active soliciting of opinions and tailoring of projects and engagement to local needs [56,68,69].

3.2. Styles of engagement

Reflecting these different motivations, various styles of engagement can be adopted [19,54,70]. Communication approaches typically involve one-way information flows from developers or sponsors and minimal chances for feedback. Consultation usually involves more two-way information exchange but still with limited dialogue, while participation involves two-way exchanges of information with the possibility for transformed opinions among all parties [54]. Arnstein's Ladder suggests a spectrum from non-participatory engagement approaches to those that give high levels of decision-making control to citizens [71] (Fig. 1).

Arnstein identifies categories of decision-making involvement and democratisation but does not rank their desirability. Pomeroy and Douvere [72] similarly categorise approaches from communication to negotiation, while the International Association of Public Participation

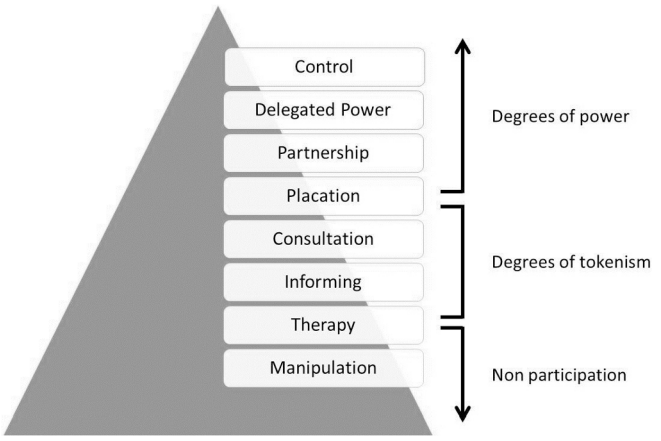

Fig. 1. Arnstein's Ladder of citizen participation.

[73] identifies engagement styles spanning weaker (informing) and stronger (empowering) involvement. Aitken [74] categorises engagement into *awareness raising*, *consultation*, and *empowerment* but argues that each can play an important and complementary role. Emphasis has increasingly been placed in recent years on co-production by developers and affected parties [75,76]. Such knowledge sharing is seen as useful for fostering collaboration, though Turnhout *et al.* [76] note that power and politics can distort co-produced projects. Aitken *et al.* [16] add that avoiding the mind-set of alternative styles of engagement may encourage developers to reflect on their objectives, the effects of approaches on outcomes and participants in different situations, and how to adapt engagement practices [77].

Another important concern in engagement processes is *who* is being engaged. There is widespread recognition that 'the public' should not be viewed as homogenous and that individuals' roles, interests, values and experiences all influence responses [56,78]. Engagement must consequently recognise diversity and pay close attention to marginalised groups [54,59], while also providing participants with a sense that their knowledge and opinions can influence decisions. This is a crucial component of participatory and recognition justice and reflects normative motivations that recognise individuals' rights to respectful participation in decision-making [79]. Issues of *mis*recognition can also arise where views are distorted [56], for example, where developers or investors label project opponents as NIMBYs (Not In My Back Yard) [80,81]. Devine-Wright [81, p. 431] argues that this misrepresents the many possible reasons for opposition and the fact that 'individuals opposing developments are often highly informed and cannot be presumed ignorant'.

3.3. Practices

A variety of ways have been suggested in the literature to promote non-discriminatory participation, evidence-led decision-making, balancing of local and wider societal needs, and distributive justice in community engagement on energy projects. Among the main recommendations are:

- Upstream engagement: to increase opportunities for local views to inform decision-making [19,45,53,82–85]. Early and accessible information helps groups to make informed decisions and feel empowered [27,31,45], and can improve siting decisions [86]. Conversely, 'decide-announce-defend' approaches, where the main elements of projects are decided in advance, can make stakeholders feel devalued and undermined [87].
- Maintaining engagement: throughout the planning, construction, operation and decommissioning of projects [14,82,84] to maintain trust with affected groups [11,23,44].
- Two-way communication and knowledge exchange: allowing dialogue on information supplied by engagement organisers [16,54,83]. Participatory processes may also encourage communities to share local knowledge [53] to help investigate uncertainties and assumptions which, when integrated with technical knowledge can produce more informed decisions [56,83]. Experiences with onshore wind energy show how continued dialogue can allow issues to be tackled openly and reduce project risks [84].
- Choosing appropriate engagement techniques: ranging from awareness-raising (exhibitions, websites, newsletters) to consultation (surveys, feedback, meetings) and empowerment (deliberative fora) [16], often used in combination to broaden participation. Some groups embrace intensive techniques, while others lack the confidence, skills or resources to take part in more participatory processes [88]. Case studies suggest that workshops [28,39] and science fairs [11,44] can create relaxed atmospheres, whereas public meetings can become confrontational and produce unrepresentative outcomes [19].
- Avoid over-consultation: especially where engagement occurs over long periods and involves different actors, for example, government- and developer-led consultations [32,39]. This risk is heightened in areas with smaller populations and where separate engagement processes happen simultaneously. The general recommendation is for clear separation or co-ordination to avoid repetition [44].
- Using trusted gatekeepers: community liaison officers can facilitate engagement [11,24,44,45,86] by engaging in monitoring, listening, 'bridge-building' and 'advocacy' to build trust, create communication channels, and promote information sharing [89]. Bridging and boundary organisations may also assist mutual learning and the co-production of solutions.
- Offering local benefits: community funds, community ownership, apprenticeships and studentships, educational programmes, and electricity discounts [16,45,84,90] can all be used to compensate communities or fund local benefits [85]. Rudolph *et al.* [85] identify three reasons for offering community benefits: good practice; statutory requirements; and community demands. Research indicates that community benefit packages should be tailored and locally relevant, but can be interpreted as sweeteners [45], while other research stresses the indirect benefits from energy projects, such as enhanced tourism [85,91].
- Community involvement in decision-making: to empower communities rather than subjecting them to decisions imposed by external governing bodies [73,74].

Such practices cannot guarantee problem-free engagement and need to be applied flexibly to reflect the characteristics of each project and setting [16,22]. Power asymmetries between sponsors and communities that may have limited technical knowledge and political influence can also undermine engagement and procedural and distributive justice [20,92]. The general literature review nevertheless indicates that, alongside understanding the motivations for engagement, three issues are central to promoting constructive engagement processes. The first is to *encourage participation* by all relevant parties in appropriate capacities. This can prove difficult where individuals or groups have opaque or multiple capacities, e.g. as residents and business owners. Second, building *trust* between individuals, groups, developers and process managers helps to engender confidence that individuals or institutions will act in the interest of the public [44]. Third, robust and fair procedures are needed to *manage conflicts* that often occur over projects and engagement processes. These themes are revisited in Section 5 following discussion of the main features of island communities that can affect engagement processes.

4. The island context and energy transitions

Initiatives such as the Memorandum of Split [93], which sets

objectives for advancing island energy transitions across the European Union[3], underline the perceived importance of islands as both testbeds and centres for renewable energy deployment [1,88,94]. However, the effects of energy projects may vary depending not just on technology type, size and location, but also how they resonate with island priorities and values. These are difficult to generalise because of variations in the physical characteristics of islands and in the ways islands are socially constructed by different groups, including residents, other local stakeholders, governing authorities and developers [95]. The discursive imaginary of 'islandness' has played an important role in efforts to understand the social, economic and historical features of islands that may affect energy projects and community engagement on energy issues [1,59,96]. This section reviews the main features of islands identified in the literature, focusing on: identity; economy, employment and energy; and diversity within and between island communities.

4.1. Identity and governance

A key element of many accounts of island imaginaries is a strong sense, and even uniqueness, of place and identity [6,22,29,31], characterised by particular configurations of community, fellowship, and cultural connections to marine spaces [1,32,97,98]. Such depictions often invoke staple industries like fishing, farming and aquaculture, and cultural interactions with land- and sea-scapes to explore how energy projects may challenge some islanders' socio-cultural and emotional attachments to their areas [88,99]. Despite this, islands are often simultaneously regarded as 'premier sites, and models, for carefully designed and manicured spaces' [100, p. 57], and as controllable environments for scalable technological experimentation that imagine islands as synecdoches for other places and wider issues [1,17,95]. Similarly, researchers have explored how narratives of remoteness and peripherality are used to depict island identity. Baldacchino [97, p. 6] argues that 'the small, remote and insular…suggest peripherality, being on the edge, being out of sight and so out of mind' rather than more outward-looking imaginaries of islands defined by connections rather than physical separation [88]. This can also encourage perceptions of island communities as marginalised from national decisions, which can undermine efforts to promote procedural and distributive justice. For example, Graziano *et al.* [36] observe that some decisions on marine energy projects in the Highlands and Islands of Scotland are made by the Scottish Government or UK Crown Estate. Such approaches can leave local communities feeling disenfranchised [28,29,32] and where community voices are absent from policy-making, they may develop outsider identities and reject processes and projects [35]. Additionally, the use of uniform policies (e.g. standard planning requirements) may homogenise the needs of individual groups within island communities [36] rather than promoting engagement that captures these differences [101].

4.2. Economy, employment and energy

Many islands have experienced historic underdevelopment and have relatively narrow employment bases [36,102]. Employment on some islands is concentrated towards seasonal and low-pay sectors like fishing and tourism, while limited job opportunities can encourage out-migration among younger generations and population decline [22,59,100]. Some research indicates that these factors can make some members of island communities receptive to the social and economic benefits of energy developments [29]. High energy costs and energy infrastructure problems can also motivate interest in renewable energy projects [103]. In some smaller island communities, however, local authorities and organisations may lack the financial and human capital to access skills to develop and manage large-scale energy developments [36]. Other considerations for engagement include a desire by many island communities to achieve long-term security but maintain autonomy [35], contrary to portrayals of islanders as more passive victims of circumstances [96]. Energy projects that promise to tackle development and demographic problems may thus enjoy greater support [22,24,35], particularly on islands with traditions of embracing change to sustain their communities [29]. Bomberg and McEwan [35] argue further that many benefits from energy projects may have less to do with energy outcomes compared with enabling active citizenry.

4.3. Community diversity

A final set of questions linked to island imaginaries relates to the diversity of participants in engagement activities. Contrary to imaginaries of islands as socially cohesive, Walker [78] stresses the need to consider the multiple roles people serve in their communities and the diverse viewpoints individuals and groups hold about what life on islands is (and should be) like, whether and under what conditions energy projects should be permitted, and how engagement should be conducted [54,104]. For example, some islands have large stocks of holiday and second homes whose owners may only visit infrequently, while workers in seasonal industries may not live locally all year round. Evidence suggests that long-term and seasonal residents can have differing priorities, with some long-term residents placing more emphasis on social connections and community compared with some seasonal residents and visitors who prioritise the island's aesthetic and environmental qualities [105]. The popularity of many islands for tourism can also create challenges [59,96]. Opponents of energy projects sometimes claim they make areas less attractive to tourists and threaten livelihoods [106,107], while others see inward investment and improvements to energy supplies as enabling tourism development. Such contrasting priorities can create 'insider-outsider' tensions within communities [35,108,109] and require developers and decision-makers to decide how they involve different categories of resident to prevent them being disenfranchised or gaining disproportionate representation [22,59]. Further difficulties can arise in including people working long and irregular hours in industries like tourism, fishing and aquaculture, while even defining affected populations can be problematic for developments that are visible well beyond designated impact zones [36,59].

Such considerations indicate a need for deeper probing of the complex and diverse factors influencing how island communities respond to different forms of energy project and community engagement. The next section now examines experiences and lessons from the island examples reviewed, exploring formats of engagement participants found helpful or problematic and the effects of island diversity on engagement processes, structured around the three themes of *encouraging participation*; *gaining trust*; and *managing conflict*.

5. Public engagement with island communities

The literature indicates that many developers and decision-makers have tailored engagement to the needs and preferences of islands where engagement activities have taken place. On Samsø, Denmark, residents were invited to pre-planning activities on its Renewable Energy Island (REI) project to clarify concerns at an early stage and promote productive conversations on renewable energy [11]. This involved: (i) information dissemination on future energy options (e.g. the creation of an energy academy to promote awareness of the REI); (ii) shared-space meetings, where locals engaged in participatory discussions on future visions and conflicts; and (iii) community engagement in siting and financing decisions based around collective ownership of energy infrastructures [26]. The evidence nevertheless suggests that

[3] The Memorandum forms part of the *Clean Energy for all Europeans* strategy and seeks to contribute towards achieving climate neutrality across the EU by 2050 and improving energy security and cost for Europe's non-interconnected islands [4,5].

even these techniques can create conflict and practical difficulties.

5.1. Encouraging participation

A number of case studies discuss the impacts of 'upstream' or early engagement on engagement processes and outcomes. Where early engagement has not occurred, stakeholders frequently argued that it would have helped to inform siting decisions, build trust, and reach agreement [27,32]. For example, residents of the New England islands in the United States felt that upstream engagement assisted in dispelling fears of finding out about offshore wind projects too late to have meaningful involvement in decision-making and in navigating uncertainties over the potential impacts of new technologies [45]. Residents of Block Island, Rhode Island, also saw early meetings as useful in understanding proposed offshore wind projects and consenting processes [44].

Upstream engagement nevertheless presents challenges. Klain *et al.* [45] comment that developers in the New England islands were unsure about some project details during its early stages and were wary about sharing potentially inaccurate information. Uncertainty may be especially high for experimental marine technologies but also for larger onshore developments [39,110]. In King Island, Australia, withholding details led to suspicion about a wind project among some stakeholders and encouraged misinformation and rumours [22]. Additionally, stakeholders became frustrated about a lack of clarity when incomplete information was shared [45]. Van Veelen's [38] review of community energy in the Scottish Highlands and Islands raises further challenges about ensuring early and sustained engagement. Several hidden barriers to participation were identified, including exclusion arising from hierarchical organisational structures, for example, between local groups, energy advocacy organisations, and national and regional governing bodies. Seasonality issues can further complicate early engagement [44]. Winter meetings on Block Island prevented many seasonal residents from attending, prompting some to argue that developers were unwilling to engage the full spectrum of the community and that the timing of engagement inhibited fair representation [45]. The authors observed that upstream engagement can backfire if the routines and availability of residents and stakeholders are not considered. The timing and frequency of engagement activities is also important for residents who work long and irregular hours, for example during peak tourism seasons or in primary industries. For example, fishermen in Ireland noted that the timing of meetings on marine energy projects were important in enabling them to attend [27].

Case evidence also indicates the importance of considering the format of activities. Public meetings do not always produce constructive interactions if some residents feel inhibited from expressing their views before large audiences or where events become confrontational [19]. However, Samsø in Denmark is characterised by a meeting culture where people traditionally attend community discussions on communal issues. This encouraged respect and inclusivity at REI meetings but similar cultures of participation cannot be assumed to exist in other island contexts. Other evidence suggests that workshops can be received positively [23,32], particularly where project sponsors share plans with local groups to gain feedback and facilitate mutual learning [28]. The science fair in Block Island promoted conversations by using topic-specific booths to encourage residents to interact with staff and experts [44].

However, organised events are sometimes poorly attended [33]. For instance, a major decline in community interest in engagement activities occurred around the European Marine Energy Centre in Orkney, Scotland, where some events attracted virtually no attendees [32]. Reasons for this included prolonged uncertainty after initial announcements on potential marine energy developments, and complaints by many stakeholders of insufficient time and interest to participate in repeated consultations that had little new to report. Johnson *et al.* [32] add that interest only returned when controversial issues were raised. While these findings highlight the dangers of consultation fatigue [36], the authors suggest that more research is needed to determine *why* communities do not always engage with energy consultations.

One technique that appears to improve attendance is the integration of meetings into communities' daily routines. REI meetings in Samsø formed part of the municipality's formal information system 'to smoothly manoeuvre the […] project into the conscience of people' [11, p. 892]. Similarly, maintaining a local presence by process leaders can encourage interactions by enabling islanders to discuss issues in their own time rather than waiting for organised events. For example, the Solar City project in Magnetic Island, Australia, established a base in an old community building as a shopfront for advice, general communication, and community events [23]. Islanders felt this enabled the project team to address suspicions and concerns while strengthening relationships with the community. Outreach and education activities can also help to embed projects and project teams in the daily lives of islanders. An outreach initiative in Monhegan Island brought together marine stakeholders, developers and decision-makers to discuss the potential for offshore wind energy developments in the Gulf of Maine, using deliberative learning techniques such as site visits, collaborative mapping, information sessions and fact sheets. Klain *et al.* [45, p. 18] report that these efforts 'provided coastal stakeholders and industry representatives with a baseline understanding of community priorities… while creating an opportunity for stakeholders to meet each other informally and build relationships.'

5.2. Gaining trust

The format of activities can often play an important role in establishing trust. Face-to-face contact was seen as the preferred way of establishing personal relations, often combining organised events with door-to-door outreach to make connections with residents who were unable or unwilling to attend meetings or exhibitions [11,44,111]. In Samsø, REI planners offered free home energy checks to help engage residents [11]. Islar and Busch [26] argue that the tight-knit nature of many island communities created a strong preference for face-to-face interaction. One Samsø resident observed that: 'it is an advantage to be living on an island. We can have direct contact with people and meet physically; you can't just send emails, it doesn't work like that here' (p.310). Face-to-face interactions also helped make developments feel more real to local people as a way of further building trust [11,44].

Face-to-face interactions may not always be achievable and not all island communities are 'tight-knit', but developers can still enable residents to access information and surveys using online platforms. Klain *et al.* [45] note how one organisation in the New England islands responded to community concerns about lack of information by creating printed and online wind-farm fact sheets. Another co-operative used an online wind map to solicit residents' preferences for wind farm locations. Similarly, details of project meetings in the Scottish islands were posted on a government website, though this required people to search and know what to look for, and assumed residents were already aware of, and wanted to engage with, the project [32].

Integrating local knowledge is recognised as important to reflecting island cultures, ways of life and physical environments in energy plans rather than experts just consulting on pre-designed solutions. Heaslip and Fahy [28] explore the use of transdisciplinary approaches and different methodological techniques to capture local knowledges and cultures. In the Aran Islands in County Galway, Ireland, they used energy-engineering and in-depth qualitative approaches in parallel with their own insights so that the different techniques could inform each other. This approach to planning the energy future of Inis Oírr (Inisheer) nevertheless raised challenges around combining different theoretical and methodological perspectives. This and the time needed to conduct detailed social research led the authors to conclude that, despite their benefits in capturing local knowledge and perspectives, intensive engagement techniques may be better suited to smaller communities.

Klain *et al.* [45] similarly observe how the small year-round populations in the New England islands in the USA meant they had few 'technical experts' to aid assessment of the impacts of renewable-energy developments, while community leadership positions were often part-time and voluntary.

Other approaches to facilitate knowledge exchange between experts and locals have yet to be tested in practice. Graziano *et al.* [36] suggest *participatory scenario development and evaluation* as a way of bringing stakeholders and experts together to debate the social benefits and costs of different scenarios [112]. Kerr *et al.* [39] similarly discuss the creation of knowledge networks involving stakeholders from different backgrounds to facilitate flows of lay and expert knowledge and the adaptation of energy planning to local circumstances. The Covid-19 pandemic, meanwhile, has accelerated the use of online engagement platforms to promote interaction and dialogue, and further opportunities exist to explore their uptake and use in community engagement on energy issues.

5.3. Building agreement and managing conflict

Another consideration is how to integrate opposing voices during engagement processes. Recognition justice involves acknowledging different perspectives and providing platforms for viewpoints to be aired [33,56]. Case evidence suggests that excluding opposition from engagement activities creates feelings of injustice and can cause conflict in previously 'cohesive' communities. A proposed wind farm on the Isle of Lewis, Scotland, was opposed by a majority of locals but supported by influential individuals from local government and the business sector [34]. Polarisation between groups became entrenched early in the process and impaired debate on the project [33]. Similarly, a group of residents from King Island formed the 'No TasWind Farm Group' (NTWFG) to oppose a windfarm proposal and counter the influence of Hydro Tasmania, which they felt was using engagement disingenuously to obtain a social licence [22]. Intra-community tensions often emerge in energy conflicts; those who joined the NTWFG felt there was no place for opposition in the deliberative engagement process and operated outside it to avoid the tense setting of community meetings [22]. This and a community vote on the wind farm polarised the community and left a legacy of conflict [113]. In contrast, respect for alternative opinions was viewed as important to community functioning during engagement on Samsø's REI project [11]. Here, it was recognised that there was no value in trying to win over opponents and attempts were made instead to site turbines where they would have minimal visual impact on opposing parties.

Such examples raise broader questions about whether consensus is a realistic, or even a desirable, goal in engagement processes [33,37]. Most case studies involved winners, losers and compromises, suggesting that even carefully designed engagement processes rarely produce harmonious outcomes, especially if some consultees feel their input was ignored [24,32]. Several commentators argue that aiming for consensus around constructed visions of a common good stifles diversity and that what matters more is understanding the power differentials and other causes of conflict that lead to uneven consequences for different stakeholders. Engagement from this perspective is less about consensus compared with creating processes that enable debate and adjudicate between conflicting values, leading ideally, though not inevitably, to respect for opponents, engagement processes, and outcomes [37]. Managing expectations by setting engagement goals, which issues are (and are not) open for negotiation, and the costs and benefits of projects may help to achieve these outcomes [9,27]. Additionally, making decisions and their rationales transparent, for example using regularly updated expectations documents, can help to clarify expectations. This approach was used in Monhegan Island, where island leaders worked with other stakeholders to provide timely communication of discussions and decisions [45]. Working to re-distribute the benefits of projects in ways that give all parties some advantages can also help to nurture a sense of distributive justice. This occurred with the Long Island solar project where, faced with major differences between environmental-landscape preservationists and sustainable energy advocates, mutually acceptable changes to siting and other plans for a natural resources benefits package helped to appease preservationists [43].

Another priority for managing conflict is to consider how contextual factors influence different groups' perceptions of themselves, energy projects, and those proposing them. Earlier discussions highlighted how contextual factors affect engagement, but they can also influence how local groups respond to change and evaluate future priorities [30,114]. One consideration here is how island communities' perceive their strengths and vulnerabilities. For example, they may be more willing to accept energy projects that address economic vulnerability and out-migration. Pellizzone *et al.* [29] report that residents viewed a proposed geothermal energy development in Sicily as offering employment and community renewal in an area undergoing deindustrialisation. Similarly, the TasWind proposal for King Island, Australia, was announced just after the closure of the local abattoir, when uncertainty existed around the island's economic future [22]. TasWind was framed 'both as a potential 'life-raft'… and as an attempt by a large corporation to capitalise on the island's misfortune' [22, p. 492]. This exacerbated social divisions among the islanders, where the labelling of more recent residents who opposed the windfarm as 'blow-ins' added to other conflict legacies on the island. Such examples nonetheless indicate that engagement processes can provide arenas for communities and individuals to reflect on their concerns, including the distribution of local benefits of energy projects, in contrast with situations where agendas are set by outside interests [29].

The successes of the REI project in Samsø are also often attributed to its distinctive circumstances. Before the project was introduced, the island faced rising unemployment, threats to public institutions, and out-migration [10]. The islanders were also experiencing the effects of climate change and had longstanding traditions of exploiting the island's resources [26]. Finally, the community already possessed the necessary social capital to manage a community energy project. Experienced and charismatic local leaders organised meetings, strengthened collaboration between affected parties and external networks, gave talks, provided technical expertise, and made locals aware of the benefits of community-owned energy [24]. Many islanders had also grown up in an 'innovation culture' as a result of past involvement in community partnerships and the Danish cooperative movement [10,11]. This provided access to institutional support from the Danish collective ownership model and the government's renewable energy strategy [26]. However, local groups opposed a proposal for another windfarm because it adopted a different model and residents were only consulted later in the process [25]. Islanders felt they had little opportunity to shape decision-making and saw the project as a 'foreign initiative'. The proposal thus failed to consider Samsø community's culture and desire for autonomy. Similarly, inhabitants of Texel (Netherlands) regarded their local energy co-operative as an expression of their cultural identity and autonomy [31]. Understanding each island's renewable energy 'history' rather than trying to impose specific solutions is, therefore, critical in securing or losing support for energy projects [10,30].

However, islands' energy histories may not always reflect favourable conditions and democratic participation can also emerge in less favourable settings. This was the case on Lewis, Scotland [34], where the Barvas Moor proposal sought to approve a 234-turbine wind farm developed by commercial operators to serve national energy markets. This provoked conflict and resistance from locals who felt the development did not respect the cultural and historical relationship between people and the moorland. Here, local arguments not only informed resistance to the Barvas Moor proposal, but also mobilised counter-proposals and a community land purchase of the Galson estate that led to the Baile an Truseil wind project. The project implemented a different vision of renewable energy involving bespoke, small-scale, and community-owned infrastructure that was more appropriately scaled

and designed to the local context [7].

6. Conclusion

The aim of this review has been to examine the challenges of engaging with island communities on proposals for renewable energy projects. The thematic literature review explored three interrelated issues: general principles and considerations for community engagement; features of islands potentially affecting engagement processes; and experiences from a number of islands where community members participated in discussions on proposals for renewable energy projects. Particular attention was directed at examining techniques used to encourage participation, gain trust, and manage intra-community disagreements and conflicts with project developers and sponsors over projects and the management of engagement processes.

The findings indicated many innovative and empowering practices but also instances where community engagement had become problematic. Many of the difficulties were similar in nature to those encountered in mainland areas, including concerns over minimising adverse local impacts and securing local as well as national benefits; lack of transparency in information sharing where project details were still uncertain [22,45]; problems capturing views from different sections of communities while preventing unrepresentative opinions from dominating discussions [19]; and including community knowledge and views in decisions [106,107]. The examples nevertheless provided evidence that problems in engagement processes can cause greater relative impacts and more lasting problems for community cohesion as a consequence of the confined physical and social spaces in which debates are held, and misguided presumptions about island identities and needs [17,95]. Particularly on smaller islands, large portions of the area may be affected by bigger developments and high levels of polarisation have occurred where processes and outcomes became contentious [66,102]. Even more substantive engagement processes produced damaging outcomes where parts of the community remained opposed to proposals [56,68]. The studies also revealed strong sensitivities over the imaginaries attached to islands and the views of island communities towards energy projects [1,6,32,97,98]. Engagement generally appeared more constructive where discussions emphasised the contribution of energy projects to local development and addressing energy vulnerabilities, and where local empowerment and knowledge featured strongly in discussions. In contrast, tensions were more pronounced where control over agendas and decisions were regarded as dominated by outside political and economic interests [28,29,32,34,88].

Such sensitivities sharpen the responsibilities on project sponsors and developers to develop place-sensitive approaches to engagement and project development [92,101], and suggests that islands represent important arenas for testing not just new technologies but also new approaches to community engagement. The article concludes by exploring options for encouraging participation, building trust and managing conflict.

Deficits in *participation* are widely recognised to risk creating important knowledge gaps and eroding trust in the impartiality and rigour of engagement processes [22,54,56]. The cases revealed the use of a variety of techniques to broaden participation, ranging from traditional meetings and exhibitions [19] to workshops [23,32], drop-in centres [44], door-to-door and mobile activities [45], and online methods [45], which, if used flexibly from an early stage increased the opportunities for discussion, recognising that not all island stakeholders will wish to take part in engagement activities [44,45]. Other approaches include using local leaders to enthuse others, develop and control projects, and engender confidence [115], while the Covid pandemic has provided multiple lessons on the use of digital technologies to broaden involvement and tailor group discussions, and its drawbacks in terms of restricted engagement, intensive preparation, and the difficulties of ensuring that different viewpoints gain a hearing [116]. A further means of encouraging participation stressed in several studies was giving participants a genuine sense their input influenced decisions or that their knowledge and skills was being used to help understand and co-design projects [36,50,53,112,115]. The evidence indicated that this may be especially important in strengthening social networks and social capital by encouraging creativity and discussion of new ideas, and in bridging divides between different conceptions of island identities and how the character of islands might be changed by renewable energy developments [27,117].

Some of the severest problems occurred where *breakdowns of trust* alienated parts of island communities from projects or engagement processes [22,24,40,113]. Although the causes and consequences of mistrust varied between groups and islands, frictions commonly stemmed from concerns that engagement activities gave insufficient weight to local priorities or islanders' role in the design and approval of developments [24,113]. Additionally, tensions between views of islands as places with distinctive attributes well-suited to testing new energy technologies and as generic places capable of producing outcomes that can be transferred to mainland contexts indicate the difficulties of generalising about the replicability of engagement techniques that proved successful in other islands [1].

Capturing the diversity and sensitivity of contextual issues affecting how island communities engage with energy projects lends weight to arguments for reversing technologically-led and instrumental processes that focus principally on seeking support for existing proposals, albeit adapted to some extent to fit the local context. More place-led approaches might instead place greater emphasis on preliminary discussion of local priorities and identities before proposals are developed, so that the design of projects and engagement are informed first and foremost by their suitability for local needs and preferences [17,88]. Developing an in-depth place-based approach of this nature would require investigations to examine both tangible and intangible values, including: local economic and social conditions [22,59]; infrastructural needs (transport, education, services, retailing etc.) [35]; community relations and traditions; and other subjective aspects of island life that different groups wish to preserve or change [106,107]. Such investigations may additionally assist in the early identification of factors that were likely to encourage positive engagement or create conflict. Equally, designing projects and engagement activities in this way might involve multiple rounds of scrutiny and be time-consuming, expensive, and still leave areas of disagreement [28,36,109], while bespoke analysis would also be needed for each island and project to avoid making misguided assumptions about the needs and preferences of islands.

However hard developers and authorities work to build trust, disagreement is an intrinsic part of engagement and is regarded by many as important to empowerment, adaptive learning and challenging assumptions [10,27,33,37,118]. The test facing engagement organisers is thus to find ways to manage conflict in ways that reduce long-term harm to the communities involved. The evidence indicates that 'winner-takes-all' decision-making, whether through executive authority or community voting, increases polarisation and scepticism towards community engagement [113]. Managing expectations through transparent goal-setting and information-sharing may ameliorate some disputes, while using local leaders as coordinators can help to counter perceptions that projects are being controlled by external forces [10,25]. Assessment of the basic needs of key stakeholder groups may also increase the chances of resolving concerns [119], as may providing opportunities for participants to be involved in co-creating options with developers and sponsors [49].

Even then, progress in lessening grievances may depend on ensuring far-reaching sharing of local benefits and the use of benefit packages to offset perceived harms [120,121]. Devine-Wright and Sherry-Brennan [122] stress the importance of flexible negotiations in broadening acceptance of benefit packages and context sensitivity in how the spatial boundaries of impacts are defined, to avoid relying on objective measures of spatial proximity and impacts and the neglect of alternative views of space that focus on the meanings, emotions and values different

stakeholders associate with affected places [17,95,104]. Greater attention to more culturally-informed approaches to defining boundaries in the negotiation of benefits packages may be especially important in islands where the effects of developments extend over large parts of the island.

Deepening understandings of ways to manage conflict nevertheless remains a critical challenge for future research. For more controversial developments, trust, legitimacy and fairness are likely to be important determinants of community perceptions of benefit funds and other conflict management mechanisms [122]. Understanding the dynamics shaping the outcomes achieved by different techniques again requires in-depth research of individual localities to avoid inappropriate generalisation. Further comparative work is also needed to advance understandings of commonalities and contrasts in the sensitivities affecting community engagement in different types of island and mainland area. In particular, greater probing is needed of how differences in political and economic relations and the ways places are imagined affect engagement processes [17].

Closer examination of community, developer and other accounts of engagement processes may also yield useful perspectives to complement those offered by academic studies on engagement motivations, processes, and efforts to integrate distributive and procedural justice. Further probing of the imaginaries of islands held by different stakeholder groups would help to deepen understanding of attitudes to energy developments and engagement processes [21,123], as would closer investigation of community engagement outside organised fora, for example, where islanders discuss projects informally or are active agents of change. Finally, useful insights may be gained from greater monitoring of the long-term energy outcomes and social, economic and environmental effects of different approaches to engagement on island communities.

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The authors 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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