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ICE PROJECT DELIVERABLE T5.3.1

LINKS AND COMPARISONS WITH EXTERNAL COMMUNITIES: THE CASE OF PUBLIC PARTICIPATION

DECEMBER 2021

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About ICE

Supported by the Interreg VA France (Channel) England programme, the Intelligent Community Energy (ICE) project aims to further develop understanding as well as apply innovative and intelligent energy solutions for isolated areas in the Channel region. The surrounding islands and territories are confronted with specific energy challenges. Many islands are not connected to the European electricity grid and rely on imported fossil fuels, notably fuel-powered heat generators. The energy solutions they use tend to be less reliable, more costly and emit higher levels of greenhouse gases than the European continental grid.

In response to these issues, the ICE project considers the entire energy cycle, from production through to consumption, and integrates mature or new technologies so as to develop innovative energy solutions. These solutions will be trialled and tested on two pilot demonstration sites (the Island of Ushant and the University of East Anglia Campus), to prove their feasibility and to develop a general methodology which can be replicated on other isolated territories elsewhere. To transfer this methodology to other isolated territories, ICE is proposing a low-carbon commercial transition offer. This will include a complete assessment of resources and local energy conditions, a proposed bespoke energy transition model and a body of low-carbon skills and technologies available in a consortium of selected businesses. This ICE-certified consortium will promote the offer to other isolated territories both within and outside of the Channel region (initially 5 territories). The ICE partnership model brings together researchers and bodies providing support to SMEs and will be made up of members from both France and the UK in terms of skills, technological and commercial development.

The involvement of local and European SMEs will further boost competitivity and transnational cooperation.

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ICE DELIVERABLE T5.3.1:

Links and comparisons with external communities: The case of public participation

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1. Introduction

1.1 Research background and rationale

Amidst growing consensus around the need for rapid and significant decarbonisation of energy supply and consumption and (inter)national-level commitments on sustainable development and poverty eradication (e.g. see Wimbadi & Djalante [1]), multiple national and international authorities have been rolling-out smart grid and renewable energy infrastructures at an ever increasing pace (e.g. [2], [3]). Islands and other isolated territories figure prominently in such ambitious plans. As numerous projects and calls for funding at an international level suggest, islands and other isolated territories have, over the past few years, become important foci of attention for sustainability transitions, serving as testbeds for an array of smart and renewable energy technologies that take full advantage of the abundant renewable energy potential of islands and promise to deliver broad social benefit though associated blue and green economy investment and employment [3]–[5]. Indicatively, the Valletta Political Declaration on Clean Energy for EU Islands [6] identifies EU islands as key forerunners in a European-wide transition to clean energy.

With immediate action and commitment in evolving these islands' energy pathways, many real-world implementations have emerged in recent years, exemplifying different transition pathways and allowing insight into the pursuit of smart and renewable energy solutions on islands. Although attention has customarily been placed on the optimum sizing of centralised RES plants [7]–[9], the concept of the green or smart grid that lately emerges has also attracted the attention of researchers. For instance, the International Renewable Energy Agency (IRENA) [10] details over twenty-five state-of-the-art low-carbon projects from islands and countries in the Pacific and Indian Ocean, the Mediterranean and the Caribbean. These projects illustrate many aspects of the smart energy transition to include projects for wind farms, solar farms and the use of energy efficiency and EVs for enhancing the energy security of the system and reducing their dependence on fossil fuels. These developments have informed a rich repository of readily available data useful for electricity system designers, policy makers and modellers alike wishing to assist in the sustainable energy transition of islands. According to IRENA [10], projects and research programmes of this kind will create a blueprint that can be replicated in other isolated economies and possibly on other larger systems.

In light of the growing focus on technological know-how transfer between islands and other isolated territories, there is growing recognition of the need for technology developers to integrate contextual and socio-cultural sensibilities more fully into their promotion and implementation strategies. On the one hand, decision-making procedures for energy infrastructure in many countries have undergone

rapid and repeated changes, with new arrangements for citizen participation establishing themselves as a characteristic feature of modern statecraft in this 'age of participation' [11]. Local communities are increasingly reconceptualised, not as reactive and latently hostile to sustainable energy transitions, but rather as a resource of local knowledge, and a constructive, helpful audience for local energy development that can make a contribution to further understanding the negotiation around local smart energy solutions acceptance [11]–[14].

On the other hand, and albeit considerable experience of island/isolated territory energy transitions and a mushrooming body of research on isolated energy communities, a critical starting point of this report is the acknowledgement that the social dimensions of energy transitions risk being overlooked in favour of a technocratic vision in which the technical-natural sciences take sole responsibility [15], [16]. Recent debates on how to "manage" island energy transitions have been curiously silent on democratic matters, despite their potential implications for democracy. Indicatively, whilst human-centric concerns have informed the Horizon-2020 programme on energy islands, Mikkelsen et al. [17] note that 'not much room has been given [within the programme] for research into different implementation views and the preferences of end consumers'.

Specifically, as part of these multiple visions of energy transitions, energy users are explicitly re-envisioned as essential components of effective island energy transitions: a) as conscious consumers who accept green energy installations in their backyards and respond to awareness-raising campaigns by using electricity more efficiently [18]; b) as "smart" consumers who use smart energy feedback (e.g. [19], [20]); c) as "flexible" consumers accepting load management systems (e.g. [19], [20]); and d) as energy prosumers at either the individual or the community level (e.g. [21], [22]). But in spite of growing interest in active consumer participation in sustainable energy transitions, the practical challenges of such innovative energy transitions are almost exclusively addressed in small and large-scale techno-focussed modelling research that overlooks public attitudes, priorities and experiences and, more broadly, the role of the public and democratic engagement in transition processes [15], [16].

With energy systems constituting complex socio-technical entities deeply embedded within the fabric of society, such ambitious sustainable energy visions clearly have the potential to encroach on, and create risks to, key aspects of social life [23], [24]. Balancing the benefits and risks to isolated energy communities thus suggests a need to ensure that where developments happen, they remain appropriate to the circumstances of the communities where they are located, and for a strong emphasis on consultation with affected communities. This reflects a sustained call for greater public engagement in decision-making around energy [25] – either through the adoption of consultation "best practice" models or toolkits aimed at ensuring rigour and fairness in how communities are involved at all stages of decision-making affecting their areas (e.g. [26], [27]), or through tailor-made engagement processes

responding to the socio-cultural and political idiosyncrasies of individual places and audiences (e.g. [28]–[32]).

1.2 Overarching aims and objectives

Against this backdrop, and given the ambitious targets that many island/isolated territory authorities and project developers have now adopted to stimulate decarbonisation, systematic and robust social science scholarship on public participation in island energy transitions is deemed timely and necessary. Specifically, this report seeks to lay the groundworks for a novel research agenda around community engagement with energy issues and transitions across multiple different isolated/ island territories. Through a critical appraisal of timely findings on the role of public participation in energy transitions, we seek to gain better understanding of the characteristic features of isolated communities relevant to energy projects and consultations and, subsequently, develop a systematic understanding of the successes and shortcomings of public participation in energy transitions. In doing so, this report discusses whether isolated and island communities represent "outliers" (geographically, economically, socially, culturally, politically) from most other energy consultations to the extent that the "normal" rules of community engagement may not apply, or at least may not easily and intuitively be extrapolated. We subsequently seek to explore how conventional "best practice" principles and practices for community engagement might be adapted in order to achieve fair and positive discussions with energetically isolated communities.

In addressing these research aims, this report proceeds as follows:

1. Section 2 documents the findings from a comparative systematic literature review of seventeen international case studies of public participation in island energy transitions. In doing so, we highlight that key challenges of public participation have the potential to be magnified and cause greater and more lasting impacts on isolated islands when compared against mainland/continental communities.
2. Section 3 presents contemporary primary research data on the role of energy publics in the sustainability transitions of Ushant (France) and Tilos (Greece), and attempts a comparative analysis of the successes and shortcomings of public engagement agendas. In doing so, we detail how local contexts influence the forms and success of public participation.
3. Finally, Section 4 takes stock of the key arguments and findings presented in this report, and suggests possible avenues for future research on other island (e.g. La Palma, Pellworm) or other energetically-isolated territories (e.g. the campus of the University of East Anglia (UEA)) that remain understudied. In parallel, given the plethora of past, current, and emerging public

participation activities, we propose the development of a European Public Participation Observatory. This is envisioned to bring together partners from across all sustainable energy projects funded by the European Union (e.g. Interreg Europe, Horizon-2020, etc.) in order to develop a better understanding of societal engagement in energy and net-zero transitions, and generate openly accessible whole-system evidence about public participation on an ongoing basis.

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2. The Complexities of Engagement with Island Communities on Energy Transitions: A Systematic Literature Review[1]

Abstract

Islands have attracted increasing attention as sites of renewable energy generation, both to improve local energy sustainability and to generate commercial-scale, low-carbon energy. Both agendas raise questions about ensuring fair distribution of the costs and benefits of projects, the recognition of different island voices, and avoiding the treatment of islands as laboratories or sacrifice zones in national energy transitions. Interest in community engagement on energy siting has produced various consultation toolkits and analyses of more place-sensitive and justice-based approaches to community engagement. However, limited attention has been given to the distinctive challenges of engagement island communities on energy issues. A systematic literature review was conducted to examine the main features of islands potentially affected by energy projects and how existing engagement exercises have contended with the challenges of securing participation, gaining trust, and managing intra-community tensions over developments. The review indicates that although island communities share features with many mainland communities where renewable energy projects are proposed – including the difficulties of defining and demarcating communities – problems with engagement processes in island settings have the potential to produce magnified and more lasting impacts. The review concludes by assessing the implications of these findings for integrating island priorities and fairness into the design of energy engagement processes and by suggesting future research directions.

2.1. Introduction

Many countries are responding to pressures to decarbonise energy supplies and consumption by rolling out renewable-energy and smart-grid infrastructures. Islands and other isolated territories figure prominently in these plans, often as testbeds for technologies that utilise their renewable energy

[1] A significantly reworked version of this chapter has been published in Energy Research & Social Science:

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potential while promising to deliver social benefits through blue and green economy investment and employment. 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 from 12 GW to at least 60 GW by 2030 and 300 GW by 2050, complemented by 40 GW of ocean energy and other emerging technologies such as floating wind and solar [1, 2]. Such aspirations have the potential to address many of the difficulties of energy supply experienced by non-interconnected islands created by dependence on fossil-fuel imports, high generation costs, emissions from diesel-based generators, and unreliable energy supply [3, 4].

Despite these benefits for national decarbonisation agendas and island communities, energy projects also have the potential to disrupt key aspects of island life, including: land- and marine-scapes; locally important industries; and the cultural distinctiveness and autonomy of islands through their integration into mainstream economic and political processes [5]. More generally, the impacts of unsatisfactory consultation – manifested in local resistance, hostility to renewable energy technologies, project delays and incongruous developments that are not scaled to the local context – from other parts of the renewable energy sector provide salutary lessons for the development of energy sources on and around islands [6]. Balancing the benefits and risks of renewable energy to island communities suggests a need to ensure projects are appropriate to the circumstances of the islands where they are located and in-depth consultation with affected communities.

These experiences have fuelled calls for the more meaningful involvement of local communities in energy decision-making, especially siting decisions [7]. 'Best-practice' toolkits have also been developed for promoting inclusivity, rigour and fairness in how communities are involved in energy decisions affecting their areas [8]. Although there is agreement about the importance of tailoring engagement processes to the socio-cultural and political characteristics of places and audiences [9, 10], island communities arguably represent geographical, economic, social, cultural, and political 'outliers' to the extent that the 'normal' rules of community engagement may not easily be extrapolated. Equally, the perception of island communities as homogeneous, or even identifiable, entities with shared values and viewpoints is problematic, when islands – like most geographically-defined communities – are assemblages of groups and individuals with both shared and distinctive experiences, knowledges, values, and priorities [11, 12, 13]. This combination of the importance of islands within energy transitions, the risk of inappropriate consultations and developments causing alienation and adverse environmental and social effects, and the complex ontology of island communities, suggests a need for more detailed analysis of factors shaping engagement with island communities on energy issues.

This review chapter responds to this agenda by examining the role of community engagement in island energy transitions based on a systematic literature review of engagement exercises with island

communities on energy issues. The review explores the characteristic features of island communities relevant to energy projects and consultations, the successes and shortcomings of community engagement in island energy transitions, and the adaptation of 'best practice' engagement principles and practices to promote fair and constructive discussions on the development of marine and terrestrial energy sources.

The remainder of the chapter is structured as follows. Section 2.2 reviews past scholarship on public participation in energy transitions, highlighting different motivations, styles and practices of community engagement. Section 2.3 discusses characteristic features of island communities and their implications for engagement on energy issues, while Section 2.4 explains the design of the systematic literature review. Section 2.5 examines experiences with community engagement identified from the review, focusing on three themes: *securing participation*; *gaining trust*; and *building agreement and negotiating conflict*, that were identified as critical to engagement processes. Section 2.6 concludes by re-examining challenges for engagement with island communities on energy transitions and explores future research directions.

2.2 Motivations, styles and practices of engagement

2.2.1. Motivations for engagement

The literature identifies three main motivations for public engagement on energy projects. The first, *instrumental* rationales, focuses on legitimising and securing social acceptance, and remains common despite criticism from an energy and social justice perspective [14, 15]. Second, *normative* rationales stress people's right to participate in decisions affecting their local area to promote fairness in the distribution of burdens and benefits from energy projects and the procedures used to gather opinions and make decisions [11, 16, 17]. Finally, *substantive* rationales recognise that residents possess specialist knowledge about their areas that may be unknown to outside experts, and that utilising local knowledge can improve decisions [18, 19]. Devine-Wright [20] adds that it should not be assumed that lay people are unfamiliar with technical, legal or policy issues [21], while Jenkins *et al.* [22] stress that mobilising local knowledge acts as a mechanism for promoting inclusion and distributive justice.

Public engagement requirements are also stipulated in UK, European Union and international law. At the international level, 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 [23]. At the EU level, the environmental impact assessment and strategic

environmental assessment directives contain minimum requirements for public engagement, while at the country level, Johnson *et al*. [24] highlight how even Scotland's generally 'top-down' marine planning system incorporates statutory requirements for public participation and procedures, guidelines and timelines for consultation. The focus on community engagement is also exemplified by prosumer-based models where, for instance, a key aim of the Sustainable Energy Action Plan for the island of Samsø is 'to ensure the continued anchoring in the local community of the actions initiated and strive for public ownership of the fossil independent island' [25, p.6].

Stipulating community engagement requirements does not, however, guarantee inclusive discussions or that community views will influence decisions. Developers' outlook on, and *modus operandi* of, engagement may equally be influenced by the underlying goals of projects. One motivation is to contribute to achieving national targets on emissions reduction and low-carbon energy [26, 27, 28]. For example, Sweden and Scotland are aiming to meet net zero emissions by 2045, while the UK (as a whole), France, Denmark and New Zealand are aiming to achieve this by 2050 [24, 29]. Increased renewable energy production can also improve energy security and alleviate energy poverty at a national level by reducing dependence on fuel imports and exposure to energy-price fluctuations [24, 26, 28, 30]. Although these objectives imply large-scale deployments, community energy is also being promoted as a way of achieving affordable and reliable local energy. Self-sufficiency, empowerment, and engagement have featured prominently in the narratives of many community energy projects [31, 32], while another goal may be to establish future-orientated industries and employment in peripheral regions [26, 29, 33]. Creating 'green' jobs remains a key aim for several EU states, while many countries have shown interest in green growth and job creation [29, 34]. Although such goals may appeal to some communities, Haggett [27] notes that some benefits may prove elusive where local labour forces do not possess sought-after skills or employment booms are restricted to the construction phase of projects.

These motivations are likely to have material bearings on the scope and types of engagement used. Major infrastructure projects for meeting national emissions targets may involve limited negotiation except on supplementary issues. In some cases, engagement may happen mainly to meet regulatory requirements and for instrumental reasons rather than serving a material purpose or encouraging active engagement [20, 35]. Project goals equally draw attention to tensions between local and wider priorities in energy policy. Haggett [27] notes that climate change often appears removed from everyday life but fears of local impacts are not, so while national discussions often stress emissions reduction and energy security at the national level, communities and stakeholders may be more concerned about personal and local risks and benefits. Affected groups may also be sceptical about the need for local sacrifices to achieve global emissions goals [33, 36]. In contrast, projects addressing local energy insecurity and poverty are likely to be more negotiable, particularly with community-driven developments and among

communities that face regular power outages or low-quality power [32]. Where this occurs, normative and substantive rationales may feature more prominently and lead to more emphasis on soliciting opinions and knowledge, and tailoring projects and engagement to local needs [22, 37, 38].

2.2.2. Styles of engagement

Reflecting the above motivations for engagement, project sponsors or developers can adopt different styles of interaction. The literature generally divides these into three categories: communication, consultation, and participation [20, 39, 40]. Communication normally involves one-way flows of information from sponsors or developers and minimal opportunities for feedback. Consultation typically involves two-way information flows but still with limited dialogue, while participation 'involves a two-way exchange of information between sponsor[s] and [the] public with the possibility for transformed opinions in both parties' [20, p. 20). Dissecting these categories further, Arnstein's Ladder of citizen participation suggests a spectrum of engagement styles from non-participatory approaches to those that give high levels of decision-making control to citizens [41] (Figure 1).

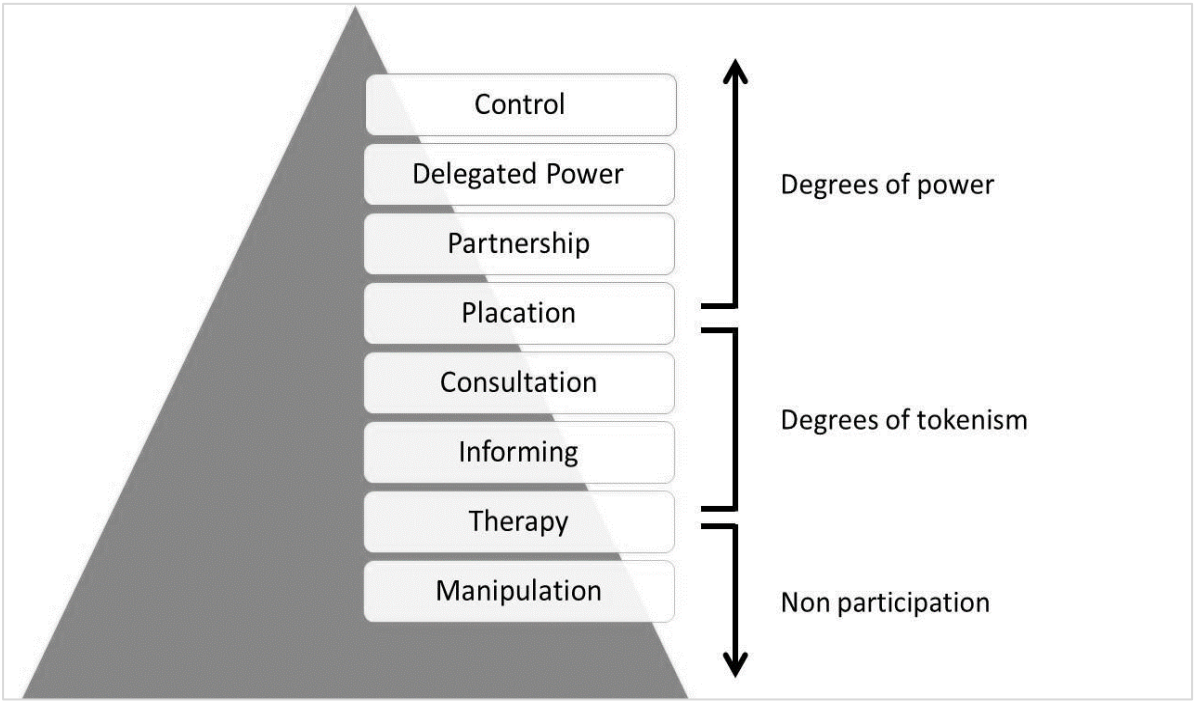

Figure 2.1: Arnstein's Ladder of citizen participation

Arnstein's Ladder does not rank the desirability of approaches. Each category simply identifies a level of decision-making involvement and democratisation. Similarly, Pomeroy and Douvere [42] identify stakeholder participation approaches to marine spatial planning ranging from communication to negotiation, while the International Association of Public Participation [43] identifies styles of engagement spanning weaker (informing) and stronger (empowering) engagement. Aitken [44] summarises these classifications as *awareness raising*, *consultation*, and *empowerment* but argues that although many typologies present styles of engagement hierarchically, each can play an important and complementary role. Aitken *et al.* [13] add that avoiding thinking of approaches as alternatives may encourage developers to reflect on their objectives, the impact of approaches on outcomes and participants in different situations, and how to adapt engagement practices [45].

Another important concern in engagement exercises 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 to developments [22, 46]. Engagement activities must consequently recognise this diversity and pay close attention to marginalised groups [20, 27]. Further challenges relate to giving participants meaningful roles, including a sense that their views can influence decisions. This is a crucial component of participatory and recognition justice and reflects normative motivations for engagement that recognise individuals' right to fair, tolerant and respectful participation in decision-making on issues affecting them [47]. There is also the issue of *mis*recognition, where views are distorted [22], for example, where developers or investors label opponents of energy projects as ignorant and selfish NIMBYs (Not In My Back Yard) [48, 49]. Devine-Wright [49, p. 431] argues that this misrepresents opposition in multiple ways and that 'individuals opposing developments are often highly informed and cannot be presumed ignorant'.

2.2.3. Practices

In an attempt to overcome the challenges of designing 'good' or 'successful' engagement processes, various authors have developed guidelines and toolkits for engagement on energy projects [39, p. 37]. These echo energy justice principles stressing the need for procedures that: (i) engage all stakeholders in a non-discriminatory way, ensuring access to processes where decisions are made without bias by project proponents and/or decision-makers in pursuit of wider societal goals, and (ii) ensure the direct or indirect outcomes of decision-making (i.e. the costs and benefits) uphold the ideals of distributive justice. Some common principles and recommendations include:

- **Upstream engagement:** ideally starting during the pre-planning stage to increase opportunities for public and stakeholder views to inform decision-making [18, 39, 50, 51, 52, 53, 54]. Engagement that provides early and accessible information helps affected groups to make informed decisions and feel empowered [53, 55, 56], and can lead to improved siting decisions [57]. Conversely, 'decide-announce-defend' approaches, where developers and sponsors plan the main elements of projects before consulting, are criticised for making stakeholders feel devalued and undermined [58].
- **Maintaining engagement:** most studies agree on the importance of engagement throughout the planning, construction, operation and decommissioning stages of projects [11, 50, 52], using regular meetings to build trust with local groups [10, 14, 59].
- **Two-way communication and knowledge exchange:** that allows dialogue on information provided by engagement organisers [20, 13, 51]. More participatory processes may also encourage communities to share specialist knowledge about their areas [18]. Such information can be helpful in investigating uncertainties and assumptions and, when integrated with outside technical and scientific knowledge, can again produce more informed decisions [22, 51]. Experiences with onshore wind energy further show how continued dialogue can allow issues to be tackled openly and reduce the risks to projects [52].
- **Choosing appropriate engagement techniques:** ranging from awareness-raising (exhibitions, websites, newsletters) to consultation (surveys, feedback forms, meetings) and empowerment (job creation, local energy groups) [13]. In many instances, there is no single 'right' method and it is often appropriate to use several techniques together. Some groups embrace more intensive engagement techniques, while others lack the confidence, skills or resources to take greater responsibility [60]. Engagement techniques should nevertheless encourage equitable involvement from would-be participants. Case studies show some preference for workshops [15, 61] and science fairs [10, 14] to create relaxed atmospheres, whereas public meetings can become confrontational and give rise to negative or unrepresentative views [39].
- **Avoid over-consultation:** many studies highlight the risk of consultation fatigue, especially where engagement occurs over long periods and involves different actors, for example, government- and developer-led consultations [15, 24]. This risk is heightened in areas with smaller populations and where separate engagement processes happen simultaneously. The general recommendation is to have clear separation or co-ordination to avoid repetition [14].
- **Using trusted gatekeepers:** liaison or energy officers from the local community can build trust and facilitate engagement [10, 14, 53, 57, 62]. Such gatekeepers can play roles from monitoring and listening to 'bridge-building' and 'advocacy' to encourage trust, create communication channels, and promote information sharing [63]. Alternatively, bridging/boundary organisations may assist mutual learning and the co-production of knowledge.

- **Offering local benefits:** such as community funds, community ownership, apprenticeships and studentships, educational programmes, and electricity discounts is widely seen as good practice [13, 52, 53, 54, 64] in recompensing communities for adverse impacts created by projects [54]. Rudolph *et al.* [64] identify three reasons for offering community benefits: simple good practice; statutory requirements; and community demands. Research indicates that community benefit packages should be tailored and locally relevant, but that they can be interpreted as deceitful sweeteners [53], while other research stresses indirect local benefits from energy projects, such as enhanced tourism [54, 64, 65].
- **Community involvement in decision-making:** that provides affected communities with a level of empowerment or control in decisions rather being subjected to decisions imposed by external governing bodies [43, 44].

While these principles are recognised consultation practices, they do not guarantee productive or problem-free engagement [66], not least because each setting and population have their own nuances that are difficult to capture in standardised processes [13]. Asymmetries in power relations between project sponsors and small and peripheral communities that may have limited technical knowledge and political power can also undermine participation agendas and procedural and distributive justice in decision-making on energy transitions [67, 68]. Critical to promoting these goals is consideration of three issues in the design and execution of engagement processes: (i) *securing participation*; (ii) *gaining trust*; and (iii) *building agreement and negotiating conflict*. Section 2.5 explores experiences from islands where energy-related engagement exercises have been conducted to investigate how engagement principles have been applied and the effects they have produced. Before this, the next section examines features of island communities affecting engagement on energy projects.

2.3. The island context and energy transitions

The wind, tidal, wave and solar resources around many islands have made them attractive for onshore and marine renewable energy (MRE) developments in recent years [60]. The 2020 Memorandum of Split [69], for example, sets objectives for advancing island energy transitions across the European Union as part of commitments under its *European Green Deal* and *Clean Energy for all Europeans* strategies to achieve emissions neutrality by 2050 and to address the costs, unreliability, and emissions intensity (caused by reliance on diesel generators) of energy supplies on some islands [3, 4]. Such factors have also encouraged some national policy-makers and local stakeholders to view islands as suitable ‘niches’ for energy experimentation prior to scaling up across national energy ‘landscapes’, following the multi-level sustainability transitions perspective [70]. However, many islands also

possess distinctive social, economic and historical characteristics that may be adversely affected by energy projects and have the potential to influence community engagement on energy issues [27]. This section reviews the main features of islands identified from the literature, focusing on: identity; economy, employment and energy; and the diversity of island communities.

2.3.1. Identity and governance

Island communities often possess and create strong senses of place and community identity through active and ongoing activities [5, 33, 55, 66] and have strong historical and cultural connections to their marine spaces [24, 71, 72]. Such connections often arise from a combination of economic activities – such as fishing, farming and aquaculture [73] – and emotional or cultural interactions with land- and sea-scapes. These factors suggest that energy developments have the potential to challenge some island communities' socio-cultural and emotional attachments to their areas [49, 60, 73]. Similarly, island researchers often draw on narratives of remoteness and peripherality as features of island identity. For example, Baldacchino [71, p. 6] observes that 'the small, remote and insular…suggest peripherality, being on the edge, being out of sight and so out of mind'. This can also extend to decision-making and perceptions that island communities are often excluded from decisions taken in national capitals affecting their area, undermining both procedural and distributive justice. This situation can be aggravated by disjointed governance. For example, Graziano *et al*. [26] observe that some decisions on MRE 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 [24, 33, 61] and where community voices are absent from policy-making, local communities may develop an outsider identity, which may act as a 'disincentive for positive local energy mobilisation beyond specific protests' [74, p. 440]. Additionally, the adoption of uniform policies (e.g. standardised planning requirements) may homogenise the needs of individual groups [26]. A challenge for public engagement is to capture these differences to avoid engagement processes that treat islands as sacrifice zones in national energy transitions [75].

2.3.2. Economy, employment and energy

Many island communities have experienced historic underdevelopment, possess limited capital resources, and offer restricted employment options [26, 76]. Employment is frequently concentrated towards environmentally focused, seasonal, and low-pay sectors such as fishing and tourism, while lack

of job opportunities can encourage out-migration among younger generations and long-term population decline [27, 66]. These factors can make island communities more aware of the social, political and economic benefits of energy developments [33]. Another common feature of many island communities is a relative geographical and economic distance from mainland areas [60]. This can result in techno-economic issues, such as higher energy costs, vulnerability to grid outages, and above-average reliance on diesel generators to meet energy needs. Local authorities and organisations may also lack the financial and human capital to access skills needed to develop and manage large-scale energy developments [26]. Other considerations for engagement include a desire by island communities to secure their long-term futures while maintaining empowerment and autonomy [74]. Energy projects that promise to tackle development issues, unemployment, depopulation, and energy access and cost may thus receive greater support from some groups [62, 66, 74], particularly on islands with traditions of embracing change as a way of sustaining their communities [33]. Bomberg and McEwan [74] extend this argument by claiming that the key benefits of energy projects may have less to do with actual energy outcomes compared with enabling active citizenry.

2.3.3. Community diversity

Further questions surround who does, and who should, participate in engagement activities. Walker [46] stresses that neither 'the public' nor island communities are homogenous and discusses the need to consider the different roles, interests, values and experiences of individuals when organising engagement activities [20]. These difficulties can particularly afflict offshore energy projects, where even defining local or affected populations can be difficult if developments are visible from wide areas beyond designated impact zones [26, 27]. Questions here include: to what degree should different groups be involved in discussions and decision-making, should everyone have equal input or should those who face more intense impacts be given more representation, and who within communities and governing bodies can make legitimate decisions on these issues? On a basic practical level, people working long and irregular hours in the tourist and commercial fishing and aquaculture sectors further complicates achieving broad-based engagement. The popularity of many islands as tourist destinations may also create challenges [27]. Opponents of energy developments often argue that energy projects will make land- and seascapes less attractive for tourists [77, 78]. Loss of reputation as a tourist destination may threaten the economic well-being of individuals or whole islands, although other segments of local populations may welcome inward investment and securing energy supplies may itself be needed to enable the development of tourism facilities.

Some islands have large stocks of holiday or second homes whose owners may only visit infrequently. Additionally, business owners working in seasonal trades may not live locally all year round. Challenges here include how far developers and decision-makers involve temporary or distant residents to prevent them being disenfranchised or gaining disproportionate representation [27, 66]. Evidence also suggests that long-term and seasonal residents develop different forms of place attachment. Long-term residents may place more emphasis on social connections and long-term community sustainability, while seasonal residents may be more sceptical about projects that impact on environmental and aesthetic quality [79]. These contrasting priorities may create 'insider-outsider' tensions within communities [74, 80, 81].

Taken together, these factors indicate the dangers of adopting simplistic definitions of island communities and a need for greater probing of how island communities (and more remote mainland communities that share similar characteristics) respond to energy developments, the factors shaping attitudes, how different groups evaluate the potential effects of projects on themselves and their areas, and how engagement and decision-making maintain participative and distributive justice. These factors thus suggest a greater focus on island-centred perspectives on engagement, including: diversity within and between island communities; formats of engagement that residents find preferable or problematic; which members of communities are more and less likely to engage; and the factors most likely to encourage acceptance of, or resistance to, decisions on local energy projects [82].

2.4. Review methodology

A systematic literature review was conducted to explore perceived best practices in community and stakeholder consultations on energy issues and to examine case studies of engagement with island communities on energy issues. The review was used to map evidence on public participation, its successes, shortcomings and idiosyncrasies in island contexts. The procedure for conducting the review was designed to be replicable and reduce bias [see 83, 84, 85]. We adopted a number of synonyms for key terms relating to the role of the public, energy system design, and island context found through an initial review of the literature and expert feedback (see Table 2.1). Searches were carried out using academic search engines (Web of Knowledge, Scopus, Environment Complete, JSTOR, Emerald, Science Direct, Soc Index, IBSS, Sage Knowledge, and Google Scholar) to identify cases from the academic literature. Academic databases such as Web of Knowledge and Scopus were searched in detail alongside examining the first five pages of Google Scholar search results.

Table 2.1: Synonyms used to identify 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

The criteria for screening were that each case: (a) involved some kind of community engagement on energy transition decision-making, excluding distributed and/or everyday forms of participation such as consumer behaviour-change initiatives and social-movement activism not involving collective decision-making[2]; (b) involved engagement processes on the installation of an energy project on an island; and (c) took place between 2000 and January 2020. An additional condition was that there was enough English language documentation to allow analysis of the characteristics of each island context and the processes, dynamics, and/or experiences of public engagement in energy-related decision-making. The cases inevitably provide a partial account of public participation in island energy transitions due to limitations in the literature, the review methodology, and the engagement foci.

[2] These categories were excluded to maintain a focus on projects: (i) with a primary emphasis on larger-scale technologies, usually proposed by external actors, which potentially raised sensitivities among sections of island communities; and (ii) where engagement centred on energy generation rather than consumption, which most likely involve different engagement dynamics. However, these types of initiative provide further avenues for research exploring engagement processes surrounding different types of energy project.

However, they still provide a rich and diverse account of island energy transitions and the subsequent social dimensions of emerging energy system transformations.

17 case studies (see Table 2.2) were analysed using an analytical framework focusing on participation and procedural issues shaping engagement activities. In contrast with scholarship focusing on evaluating participation as discrete events [86, 39], the analysis sought to probe the broader relationships within island communities and between island and mainland actors, and the power dynamics, contextual and cultural processes directly or indirectly influencing community engagement [68, 87]. The analysis was thematically organised to reflect issues identified in Section 2.2 as critical to engagement processes: *securing participation*, *gaining trust*, and *building agreement and conflict resolution*. The coding structure to analyse these themes was jointly created and tested on sample cases by the research team to ensure inter-coder reliability.

One challenge faced during the review was the timing of the empirical findings. Sustainable energy projects in non-interconnected islands keep emerging, but the approach could only capture published academic evidence and not ongoing or emergent public engagement activities. However, the review was aimed less at providing a real-time or complete snapshot of all community engagement on island energy transitions and more towards identifying recurring issues that remain relevant outside the study period. As with any systematic review, the findings are partial with respect to the multiplicity of cases of energy public engagement that remain undocumented in the English-language literature.

Table 2.2: Summary of case studies

Country	Projects	Project summary
Australia	King Island, Tasmania: Wind energy project	Wind energy conflict [66]
	Magnetic Island: Residential peak electricity demand reduction	Success factors for interventions to reduce peak electricity demand [59]
Denmark	Samsø: Renewable Energy Island project	Innovative practices and problems with consultation on offshore wind energy projects [9, 10, 62, 82, 88]
Ireland	Rathlin Island: Four proposed MRE developments	Consultation and participation with commercial fishermen on marine renewable energy projects [56]
	Inis Oírr, Aran Islands	Possibilities and challenges of employing a transdisciplinary approach to low carbon energy transitions and community energy planning [61]

Italy	Sicily: Geothermal energy proposal	Public engagement with geothermal energy [33]
Korea	Jeju Energy Corporation	Publicly owned wind energy [89]
Netherlands	Texel	Local renewable energy cooperatives [55]
Scotland	Pentland Firth and Orkney non-statutory pilot regional marine spatial plan	Consultation on pilot regional marine spatial plan [24]
	Lewis: Rejected windfarm, Barvas Moor; community wind project, Baile an Truseil	Deliberative planning and understanding transition-periphery dynamics [90, 91]
	Scottish islands	Community groups engaged in energy mobilisation [74]
	Highland and Islands: marine and community energy projects	Governance and energy democracy for marine renewable energy development [26, 92, 93]
	Orkney: MRE development	Research agendas for social studies in marine renewable energy [15]
	Orkney: Community-owned wind energy and hydrogen fuel production	Islands as living laboratories for energy futures. Legitimacy, withdrawal, and decentralized energy [94, 95]
	Unst, Shetland Islands	Community-owned Promoting Unst's Renewable Energy Project (PURE) [96]
USA	Long Island Solar Farm (Brookhaven National Laboratory site)	Development and partnerships for solar energy [97]
	New England islands: Offshore wind	Trust, justice and acceptance of offshore wind energy [14, 53, 98]

2.5. Public engagement with island communities

From the discussions in Sections 2.2 and 2.3, it might seem straightforward to adapt existing engagement techniques to the circumstances of island communities by ensuring:

- Transparency over the short- and long-term goals of projects to build trust between developers and stakeholder groups.
- Consistent and meaningful involvement in decision-making by local governing bodies to prevent communities becoming disenfranchised and alienated from projects.

- Upfront agreement of principles and ground-rules for participation that reflect the profile of each island where energy projects are proposed.
- Flexibility in the range and timing of engagement events, including baseline methods for giving everyone a chance to have a say. Online methods can overcome some difficulties in engaging groups with seasonal or irregular availability, while arranging meetings when more people are available can promote greater engagement.
- The provision of benefit packages whose design reflects the impacts experienced by specific groups while ensuring benefits are agreed through transparent and consultative processes.

However, evidence from the literature indicates that many developers and decision-makers have sought to tailor engagement processes to the needs of individual islands. One example of where many of these approaches have been applied is Samsø, Denmark, where residents were invited to participate in pre-planning activities on its Renewable Energy Island (REI) project. This helped to clarify concerns during the project's early stages, enabled people to participate positively in further meetings, and promoted productive conversations about renewable energy [10]. The process involved a four-step strategy to facilitate inclusive and participatory decision-making: (i) information dissemination on future energy options (e.g. establishment of an energy academy to promote awareness of the REI); (ii) systematic deliberation at shared-space meetings, where locals engaged in participatory future visioning; (iii) open-space deliberation to resolve conflicts; and (iv) active community engagement in infrastructure siting decisions and financing through collective ownership of low-carbon energy infrastructures [88].

The evidence nevertheless suggests that even these styles of engagement can still create conflict. This section discusses some ways engagement processes have been adjusted and explores what has worked and failed, and reasons for conflict. As noted in Section 2.4, the three main themes analysed were: *securing participation*; *gaining trust*; and *building agreement and negotiating conflict* though the issues discussed do not always fall neatly into individual themes. For example, early engagement with communities is discussed under 'securing participation' because it relates to giving opportunities for involvement but is also important for gaining trust. The themes should therefore not be regarded as discrete categories.

2.5.1. Securing 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 [24, 56]. For example,

islanders in New England felt that upstream engagement aided 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 [53]. Residents of Block Island in Rhode Island also saw early meetings as useful in understanding proposed offshore wind projects and consenting processes [14].

Upstream engagement nevertheless presents challenges. Klain *et al.* [53] comment that developers in their study were unsure about some project details during its early stages and were wary about sharing potentially inaccurate information. Uncertainty may be especially high for more experimental marine technologies [15, 99]. In King Island, Australia, withholding details led to suspicion about a wind energy project among some stakeholders and encouraged the circulation of misinformation and rumours [66]. Additionally, stakeholders became frustrated about a lack of clarity when incomplete information was shared [53]. Van Veelen's [93] 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 internalised forms of exclusion arising from hierarchical organisational structures (for example, between local groups, energy advocacy organisations, and national and regional governing bodies) and temporal challenges associated with participation among people with busier work and personal lives.

Seasonality issues can further complicate early engagement [14]. Meetings held in the winter 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 [53]. The authors observed that – in common with all engagement activities – 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 around MRE projects were important in enabling them to attend [56].

Case evidence also underlines 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 [39]. However, Samsø in Denmark is characterised by a 'meeting culture' where people traditionally attend community meetings to discuss communal issues. While this led to respect and inclusivity at REI meetings, similar cultures of participation cannot be assumed to exist in other island contexts. Other evidence suggests that workshops can be received positively [24, 59], particularly where project sponsors share energy plans with local groups to gain feedback and facilitate mutual learning [61]. The 'science fair' in Block Island

promoted conversations by using topic-specific booths to encourage residents to interact with staff and experts [14].

There are, nevertheless, cases where organised events have been poorly attended [90]. For instance, a significant decline in community interest in consultation activities occurred around the European Marine Energy Centre in Orkney, Scotland, where some events attracted virtually no attendees [24]. Reasons identified for this included prolonged uncertainty after initial announcements on potential MRE 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.* [24] add that interest only returned when controversial issues were raised. While these findings underline the dangers of consultation fatigue [26], 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 integrating meetings into the daily routines of island communities. REI meetings in Samsø formed part of the municipality's formal information system 'to smoothly manoeuvre the […] project into the conscience of people' [10, p. 892]. Similarly, the maintenance of a local presence by process leaders can help to encourage interactions by enabling islanders to discuss issues in their own time rather than waiting for organised events. For example, organisers of the Solar City project in Magnetic Island (Australia) established a base in an old community building, which became a shopfront for advice, efficient appliance information, general communication, and community events [59]. 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 project members and projects in the daily lives of islanders. For example, an outreach initiative in Monhegan Island (USA) brought together marine stakeholders, developers and decision-makers to discuss the potential for offshore wind energy developments in the Gulf of Maine. It included deliberative learning experiences, such as site visits, collaborative mapping, information sessions and fact sheets. Klain *et al.* [53, 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.'

2.5.2. Gaining trust

The format of activities is also important in establishing trust. Face-to-face meetings can play a significant role in this and developers and process leaders may use door-to-door outreach in addition to

events and activities that require effort from residents to attend [10, 14, 100]. In Samsø, REI planners offered free home energy checks, which helped to engage residents with projects even if they were not initially interested [10]. Islar and Busch [88] argue that the tight-knit nature of many island communities can enable face-to-face interactions; in their study, 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). Using this proximity can help to make developments material to local people as a way of further building trust [10, 14].

Face-to-face interactions may not always be achievable but developers can still enable residents to access information and surveys using online platforms. Klain *et al.* [53] 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 a degree of searching, knowing what to look for, and assumed residents already knew of, and wanted to engage with, the project [24].

Integrating local knowledge is widely recognised as important to energy decision-making because many islands have distinctive cultures and ways of life that need to be reflected in energy plans rather than experts simply consulting on pre-designed solutions. Heaslip and Fahy [61] argue for the use of transdisciplinary approaches and different methodological techniques to capture local knowledges and cultures. In the Aran Islands in County Clare, Ireland, they used energy-engineering and in-depth qualitative approaches in parallel to inform each other, in addition to providing their own insights. This approach to planning the energy future of Inis Oírr nevertheless raised challenges around combining different theoretical 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.* [53] 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. Graziano *et al*. [26] 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 [101]. Kerr *et al.* [15] similarly discuss the creation of knowledge networks involving stakeholders from different backgrounds and perspectives 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.

2.5.3. Building agreement and negotiating conflict

Another consideration is how to integrate opposing voices during engagement processes. Recognition justice involves acknowledging different perspectives and providing open platforms for viewpoints to be aired [22, 90]. Case evidence shows that excluding opposition from engagement activities not only creates feelings of injustice but can also 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 [22]. Polarisation between groups became entrenched early in the process and impaired debate on the project [90]. Similarly, a group of residents from King Island formed the 'No TasWind Farm Group' (NTWFG) to oppose a windfarm proposal [66]. Its members felt this was needed to counter the influence of Hydro Tasmania, which they felt was using community engagement disingenuously to obtain a social licence to operate. Intra-community tensions often emerge in energy conflicts, and those who joined the NTWFG felt there was no place for opposition in the deliberative process and operated outside it to avoid the tense settings of community meetings [66]. This and a community vote on the wind farm polarised the community and left a legacy of conflict [102]. In contrast, respect for alternative opinions was viewed as important to the community's functioning during engagement on Samsø's REI project [10]. Here, it was recognised that there was no value in trying to win over REI opponents and attempts were made instead to site wind 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 [90, 92]. Most case studies involved winners, losers and compromises, suggesting that even carefully designed engagement processes rarely produce harmonious outcomes, especially where some consultees feel their input was ignored [24, 62]. Several commentators argue that aiming for consensus around constructed visions of a common good oppresses 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, the engagement process, and the outcomes achieved [92]. Managing expectations by setting goals for the process, which issues are (and are not) open for negotiation, and the costs and benefits of projects may contribute to achieving these outcomes and addressing concerns about gains and losses [9, 56]. Additionally, making all

decisions and their rationales transparent, for example using regularly updated expectations documents, can help to clarify expectations. This approach was used in Monhegan Island (Maine, USA), where island leaders worked with other stakeholders to provide timely communication of discussions and decisions [53]. 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 [97].

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 procedures, but they can also influence how local groups respond to change and perceive their future priorities [103, 89]. One consideration is island communities' perceptions of their strengths and vulnerabilities. For example, islanders may be more willing to accept energy projects that address economic vulnerability and out-migration. Pellizzone *et al.* [33] 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 [66]. TasWind was framed 'both as a potential 'life-raft'… and as an attempt by a large corporation to capitalise on the island's misfortune' [66, p. 492, 12]. 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 [33].

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 [9]. The islanders were also experiencing the effects of climate change and had longstanding traditions of exploiting the island's resources [88]. 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 ensured locals were aware of the benefits of community-owned energy [62]. Many islanders had also grown up in an 'innovation culture' as a result of past involvement in community partnerships and connections with the Danish cooperative movement [9, 10]. This provided access to institutional support from the Danish collective ownership

model and the government's strategy for promoting renewable energy [88]. However, local groups opposed a proposal for another windfarm because it adopted a different development model and residents were only consulted until in the process [82]. Islanders felt they had little opportunity to shape decision-making and saw the project as a 'foreign initiative', unlike REI. The later 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 [55]. 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 [9, 89].

However, this energy 'history' need not necessarily reflect favourable conditions. Democratic participation might also emerge in less favourable settings. This was the case on Lewis, Scotland [91], where the Barvas Moor proposal sought to implement a project involving 234 wind turbines 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. These 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 the renewable energy involving bespoke, small-scale, and community-owned infrastructure that was more appropriately scaled and designed to the local context [6].

2.6. Conclusion

The goal of this review has been to examine the challenges of engagement with island communities on energy issues. It has explored the characteristic features of islands and, through a systematic literature review, how recognised engagement practices have been applied to promote constructive discussions on energy projects. The review was structured around three overlapping themes that were identified as critical within engagement processes: (i) securing participation; (ii) gaining trust; and (iii) building agreement and negotiating conflict, and revealed innovative and empowering practices but also instances where community engagement had become problematic in one or more of these areas.

Overall, the island communities reviewed appeared to share features with many mainland communities where engagement exercises have taken place on energy projects. Not least of these was difficulties with the idea that islands possess self-evident communities, when islands – like most geographically-defined communities – are assemblages of groups and individuals with different forms of engagement with the local area that contribute to distinctive experiences, knowledges, values, and priorities. The

evidence nevertheless indicates that qualitative differences between island and mainland areas may not be that major, and that recognisable common themes exist around: building trust, capturing and respecting diversity of views, and a need for sensitivity towards shared and individual perceptions of the economic and social effects of energy projects on locally-significant industries, aesthetic values, and community cohesion [77, 78]. Many of the practical problems of engagement are also common in other areas, including the need for mechanisms to capture views from all sections of the community while preventing unrepresentative views from dominating proceedings [39], utilising local knowledge, and uncertainties over the sharing of information when project details are still uncertain [18, 19].

The differences between island communities and other areas may instead be more quantitative than qualitative, with issues having the potential to cause greater proportional impacts and leave more lasting legacies. For example:

i. Many islands have distinctive histories and narratives about themselves and their relationships with the wider world whose nuances engagement activities sometimes struggle to capture [5, 24, 71, 72].

ii. The small size of many islands, combined with the diversity of their communities, mean that inappropriately designed or conducted engagement processes (especially those that become winner-takes-all contests between supporters and opponents) may produce disproportionately damaging consequences because large portions of islands may be transformed by projects and entire communities may become polarised [11, 49, 66]. Even substantive engagement processes can produce damaging outcomes if sections of the community remain opposed to the project, unless knowledge sharing and discussion are used skilfully to promote trust and compromise over the nature, size and location of projects [22, 37].

iii. The spatial distancing of many islands from centres of economic and political power, transport and energy infrastructures, and centres of population means that peripherality remains an issue in multiple senses, not least how island voices are viewed and prioritised relative to national concerns [24, 33, 60, 61, 91].

Such differences create greater responsibilities in how project sponsors and consenting bodies interact with island communities, both in the types of projects proposed and in the purpose, design and management of engagement activities, to ensure distributive justice, dialogue and inclusivity in decision-making that prevents islands from feeling they have become laboratories for technological experiments [67, 75].

Among other things, managing these responsibilities requires close attention to understanding the priorities of each island community and their integration into energy projects and engagement.

Recognising again the potential for highly diverse views, typical concerns include: (i) maintaining the long-term vibrancy of the area [60]; (ii) strengthening economic opportunities [27, 66]; (iii) well-functioning energy and transport infrastructure, education, services and civic amenities [74]; and (iv) protecting the physical, cultural and social attractiveness of islands where energy projects are proposed [77, 78]. Differences in these concerns within island communities nevertheless militates against 'one-size-fits-all' approaches to priorities mapping, even for individual islands [20, 46]. Not least, developing a representative view requires understanding the physical, occupational, cultural and social composition of each island community, and the views of major groups, community leaders and activists, and community dynamics affecting engagement processes [26, 61, 81]. Even such approaches cannot guarantee full support for projects or resolve other difficulties associated with nurturing participation, trust, and distributive justice in where and in what forms energy technology experiments take place. However, particularly for projects to address national climate and energy objectives, transparent scrutiny and communication of the costs and benefits of projects may address some misconceptions and enable greater discussion with mainland authorities on the appropriateness of projects for the places they are proposed [9, 53, 56, 97]. Either way, a greater emphasis on understanding and integrating the insecurities and aspirations of each island community into project narratives and practices forms an important component of engagement on energy transitions.

Alongside stressing the importance of place- and people-centred approaches to engagement with island communities [9, 10], the analysis highlights a number of directions for future research. First, comparative studies of engagement processes on islands and mainlands would help to test the commonalities and contrasts inferred from the literature review about, among other things, the self-identity of different communities (including their composition and shared, group and individual values and priorities), outlooks towards energy projects, political and economic relationships affecting discussions on energy projects, and practical challenges of engagement processes. Second, the review drew mainly on academic studies and closer scrutiny of community, developer and other accounts could yield richer and more balanced insights on the factors influencing engagement motivations, processes, and outcomes. In particular, further analyses of distributive and procedural justice in engagement activities with island communities are needed to explore and challenge the potential exploitation of islands as test laboratories for new energy technologies. Third, in line with scholarship on the multifaceted roles of energy publics in transition processes [85, 87], scope exists to deepen understanding of public engagement outside organised decision-making fora, for example, where islanders are active agents of change in areas such as energy consumption and prosumption practices.

Similarly, studies of one-directional forms of engagement are still more plentiful in the literature than those examining more participatory processes, and further work is needed to advance critical

understanding of the benefits and drawbacks of more participative and empowering styles of engagement, and equally of online deliberation processes that have been deployed with increasing frequency (particularly following the Covid-19 pandemic) to overcome temporal and spatial barriers to engagement. The lack of participation in engagement activities observed in previous studies also remains worthy of further investigation given the potential scale of impacts of major energy projects on smaller island communities. Finally, useful insights may be gained from greater *post hoc* 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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3. Publics in Transition: A Comparative Evaluation of Public Participation in the Sustainable Energy Transitions of Ushant (FR) and Tilos (GR)

Abstract

Ongoing calls for greater public participation in energy transitions have been accompanied by a lively critical debate on the merits and perils of participation. As critics highlight, the growing interest in public participation is premised on a number of reasonable but largely untested assumptions, and there remain deep doubts about its practicality, political significance, and even appropriateness as a core feature of a vibrant democracy. Against this backdrop, we have adopted a case-study research approach in order to generate an in-depth, multi-faceted, and nuanced understanding of the complex issue of public participation in its real-life context. To gain a broader appreciation of the issue, we draw on insights from two paradigmatic case-studies of island energy transitions: Ushant (France), and Tilos (Greece). The two case-studies were evaluated on the basis of a novel evaluation framework, and subsequent discussions documented in this chapter are structured around four core themes that were identified as critical within engagement processes: (a) decision-making democratisation; (b) workability of participation process, (c) participation as an outcome-oriented endeavour, and (d) public participation as a context dependent process. The evidence presented in this chapter confirm scepticism with respect to the value of public participation; both cases, and especially Ushant, showed evidence of issues undermining participatory practice. Moreover, by providing one of the first ever empirical accounts of contextual factors shaping the form and outcomes of participation, we demonstrate how participation practices are, ultimately, a product of the complex interplays between rationales for participation, power imbalances, social structures, and institutional settings that tend to limit the emancipatory potential of public participation. But significant scope remains for emancipatory practice, even when forms of 'passive participation' are imposed by those with decision-making power. Subsequently, rather than condemning participatory practice a priory, the evidence presented in this chapter points to the need for more systematic evaluation of participatory practice in situ.

3.1. Introduction

Whilst research on public participation in island energy transitions remains scarce [1], there is growing interest in the roles of energy publics in transition processes [2], [3]. Public participation has been seen as the cornerstone of an inclusive and deliberative approach to planning and governance that places

stakeholders' knowledge, opinions and aspirations at the centre of decision-making, as opposed to a managerialist (technical–rational) approach in which professional expertise and bureaucratic control shape policy and practice [4], [5]. Participation has been promoted both instrumentally, as a 'means' of ensuring that decisions are better geared toward their objectives, and as an empowering 'end' in itself, ceding communities greater control over the decisions that affect their lives [6], [7], [8]. Additionally, as shown by a cross-disciplinary literature, active citizenship and community participation are one of the keys for promoting healthy communities and enhancing the quality of life of individuals and groups. It has been claimed that citizen participation may foster individual [9] and social wellbeing [10], strengthen social capital [11], increase citizens' quality of life, and generate community empowerment [12]–[14].

But calls for greater public participation in environmental decision-making have been accompanied by a lively critical debate on its merits and perils. As critics highlight, the growing interest in public participation, including its deliberative forms, is premised on a number of reasonable but largely untested assumptions, and there remain deep doubts about its practicality, political significance, and even appropriateness as a core feature of a vibrant democracy [15], [16]. Some are strident in their criticism; most notably, the contributors to the provocatively entitled book 'Participation: The New Tyranny?' [17]. Specifically, Cooke and Kothari [17] challenge the pervasive belief that participation is unequivocally good, arguing instead that the theoretical ideal of participation is often not functioning as the tool for liberation and distribution of power that its rhetoric suggests. Participation in practice is, allegedly, nowhere near the participatory, bottom-up, open process that it is commonly held to be. For Cooke and Kothari [17] (see also Rydin and Pennington [18]), participatory processes are understood to be inherently and inevitably problematic. There is a strong and persistent suspicion that participatory practices are so infrequent, unrepresentative, subject to conscious manipulation and unconscious bias, and disconnected from actual decision making, that it is at best an impractical mechanism for determining the public will and at worst misleading or dangerous [15][19].

Three broad types of "participation tyranny" are often discussed [17]:

a. First, the dominance of multinational agencies and funders exists just beneath the rhetoric and practices of participation. This tyranny addresses the enduring decision-making control held by agencies and funders.
b. Second, the emphasis on participatory practices obscures many limitations and manipulations that suppress local power differentials; in fact, participatory practices sometimes contribute to the maintenance and exacerbation of local power differentials. This tyranny is a group level

tyranny and addresses the well-known social psychological dynamics of group functioning which are largely ignored in the participation literature.

c. Finally, the third form of tyranny identified by Cooke and Kothari [17] addresses the dominance of the participatory method, noting that the overwhelming acceptance of participation, particularly the goals and values expressed, has limited dialogue and even consideration of other methods for cultivating development.

Cooke and Kothari [17] are not alone in challenging romanticised accounts of public participation. Other participation scholars have also been critical of public participation activities, focusing around two key sets of issues: (a) the different modes of engagement and the extent to which they constitute active participation and, hence, a meaningful form of inclusion; and (b) the practical and conceptual difficulties in securing broad-based public engagement in the process, including defining who participates and on what basis. Both sets of issues are intimately connected with interest-based politics and relations of social power [5], [20].

A starting point is the issue of interpretation of 'participation' itself, which has a fundamental influence on how agencies interact with wider stakeholders. The fact that the normative concept of participation can take on different guises in practice has been recognized and discussed in the social science literature for some time [21], [22]. For most social analysts, a meaningful interpretation of the term 'participation' must imply a degree of active involvement in taking decisions [21]–[26]. In this respect, Treby and Clark [27] challenge the common tendency for 'consultation' – the presentation of proposals for comment and feedback – to be labelled by agencies as 'stakeholder participation'. Indeed, adoption of participation as rhetoric, without real commitment to giving people an effective voice, has been roundly criticized. Many authors have shown how these limited forms of inclusion are embedded within and further enforce persistent, pre-existing relations of social power between agencies and the public, and in the final outcome may do little to weaken top-down styles of decision-making (e.g. [17], [23], [28]).

Specifically, more than five decades ago, Arnstein ([23], p.216) argued that 'participation without redistribution of power is an empty and frustrating process for the powerless'. In her brief but widely cited paper exposing the frequently misleading and rhetorical use of the term participation within urban renewal and anti-poverty programmes in the USA, Arnstein [23] argues that participation typically takes passive and tokenistic forms in which people are told what to do and have no control over the processes and the outcomes, whilst active and interactive forms wherein community members have control both over the processes and the outcomes remain rare. Arnstein's [23]

interpretative categorizations have since been revisited by many authors. Burns, Hambleton, and Hoggett [29] modified Arnstein's [23] model and proposed a ladder of citizen power, in which a distinction is drawn between ''cynical'' and ''genuine'' consultation, and between ''entrusted'' and ''independent'' citizen control. Similarly, writing in a development context, Pimbert and Pretty [30] have developed a typology of real-world interpretations of the term that ranges from 'passive participation', in which people are effectively recipients of information about decisions that have already been made, to 'self-mobilization', where people take initiatives independently of external agencies. In between lie consultative mechanisms, in which people are invited to submit opinions on predetermined strategies, and more interactive processes, in which people participate in joint analysis of problems and take greater control over decisions [30]. Thus a range of different interpretations and actions exist under the umbrella term of participation; different participation forms might generate either empowerment or disempowerment [31].

But even if agencies are willing to loosen their control – thus giving voice to and empowering civil society actors – this is far from a simple process. Bloomfield et al. [7] list common problems of public apathy, social disincentives to collective action and the time costs involved in participation, all of which may limit public motivation to take part. It has long been recognized that factors such as self-confidence and respect for authority may differentially shape people's readiness to participate [32]. Low levels of participation may also be linked with agency/stakeholder relations: negative past experiences of programmes, and knowledge and communication gaps [5]. Indeed, when participants perceive that their involvement is stressful or ineffective, they are likely to withdraw into private life. By the same token, if they feel that their participation entails more costs than benefits, they are discouraged from participating [33], [34]. These processes are in line with the literature that highlighted that since participation is stressful and time- and energy-consuming, its quality is likely to decrease over time [35], and disempowerment is likely to occur if insufficient or inappropriate resources are provided to participants [36].

Then there is the question of who actually gains a voice. Communities are seldom consensual, homogeneous entities in which people have equal capacity to articulate their concerns [37], [38]. Different social actors have differing access to a participatory process: there is a pervasive risk that elite or special-interest groups can exert a disproportionate influence on the decision-making process and outcome [7], [39]. In public meetings, there is often a difficulty for planning agencies in determining whether more active participants, including organized pressure groups, fairly represent the views of less active community members [40]. Where large numbers of stakeholders are involved, there are obvious practical limitations to the breadth of inclusion in democratic fora [7], [38]: the

resulting choice or self-selection of individuals and organizations again raises problems of representativeness. In addition, in circumstances where interests and values of participants fundamentally clash, the notion that clear consensus positions will emerge on which to base decisions may be highly optimistic [41], [42]. Indeed, there is quite likely instead to be a situation characterized by micro-politics, in which actors pursue various overt and covert negotiating strategies to achieve personal ends [5], [43].

Community energy projects have not withstood criticism either. On the one hand, proponents argue that they represent the epitome of energy democracy: an opportunity for 'genuine popular control over energy choices' [44]. For many, this 'genuine popular control' takes the form of greater community control of resources [45]. They consider community and cooperative energy groups as the 'ideal organisational entities' in which individuals participate actively in decision-making [46]. As such, advocates for greater energy democracy see community action as an opportunity to tackle energy issues in ways that meet communities' needs and enrich them [45]. On the other hand, however, McHarg [47] note the tendency to simply assume rather than demonstrate that community energy projects are more democratic or just. In other words, there is a risk that advocates fall into what Purcell [48] has labelled the 'local trap', with generalisations made about the quality of projects based on their scale. Additionally, it risks perpetuating the notion that community organisations are willing and able to provide the democratic functions expected of them [49].

Indeed, Van Veelen's [45] research on community energy projects in the Scottish Islands and Highlands challenges the 'romanticised narrative' that community energy groups can always be considered 'democratic'. Supporting earlier research (e.g. [50], [51]), Van Veelen [45] demonstrates that: (a) the ideals of inclusive decision-making and robust accountability procedures can be at odds with the practicalities of meeting them, (b) the nominal inclusion of (previously) underrepresented groups in decision-making does not automatically guarantee a transfer of power, as internal forms of exclusion may remain, and (c) while many communities seek to govern based on cooperation and consensus-building, agonistic processes of contestation and negotiation are also part of the day-to-day reality of democratic governance. Similarly, Papazu [52] highights how Samsø's inspiring transition narrative (see Section 2 for further details) has been built around attractive concepts such as 'community energy' and 'energy democracy', thereby concealing the muddier realities of the sustainable energy transitions – including, inter alia, the fact that project developers adopted less democratic strategies and tactics to get the community on board.

Bearing in mind these insights and critiques of participatory processes, this chapter seeks to provide a critical analysis of public participation specifically in the context of island energy transitions. This

research does this by drawing on primary empirical evidence on the islands of Ushant, France, and Tilos, Greece. In doing so, and against a backdrop of research on island energy transitions that overlooks important issues relating to public participation (see Section 1), we draw on an extensive body of scholarship proposing a series of evaluation criteria and frameworks to inform the first-ever evaluation of public participation in island energy transitions.

3.2. From critique to evaluation

Even though the ‘‘social experiments’’ of public participation (e.g. citizen juries, deliberative polls, participatory budgeting, town hall meetings, open space technology experiences, etc.) have increased in type and number over the past few decades [21], [53], few studies have evaluated the subjective experience of participants or the empowering potential of participation. In this chapter, we argue that one of the modes through which the empowering (or disempowering) effects of public participation might be assessed is through the combined evaluation or participatory processes on the basis of: (a) criteria derived from relevant scholarship, and (b) the subjective views of the citizens involved in participatory activities themselves.

We are not alone it this. There is a significant literature on the evaluation of public participation processes aimed at identifying criteria and establishing measurable indicators to evaluate various aspects (e.g. [21], [33], [54]–[56]). Many researchers have introduced (often competing) frameworks that define benchmarks for evaluating public participation. Some of these frameworks (e.g., [57]) are process oriented; that is, they compare how actual public participation processes compare to an ideal standard. For example, they consider whether the process is sufficiently transparent for the relevant population to understand what is happening and how decisions are being made, or they ask whether the participants comprise a broadly representative sample of the population and whether the public is involved appropriately early in the process. Indeed, Heberlein [58] put forth four benchmarks which may be used to evaluate the quality of any public participation method: (1) the individuals involved should be representative of all groups affected, (2) the individuals involved should be well informed, with knowledge of implications and alternatives, (3) the method should be interactive, and (4) where possible, input should be based on actual experience and behaviour. Fiorino [59] defines four further democratic process benchmarks for assessing participatory mechanisms: (1) the option of citizens’ direct participation in decisions, (2) the extent to which citizens are able to share in collective decision-making, (3) the degree to which a mechanism provides a structure for face-to-face discussion over a

period of time, and (4) the opportunity for citizens to participate on the basis of equality with administrative officials and technical experts.

In contrast, others (e.g., Coglianese [60]) are outcome-oriented. For example, they ask whether the programme supports the development of civic skills that enable participants to take part in future decision-making processes, and investigate any effect of increased mutual trust. Beierle [54] advances an entirely different approach, claiming that evaluation research should return to the core tasks of public participation: asking what we will gain from it. He analysed the problems that public engagement initiatives are intended to resolve and identifies various social goals that emerge from this analysis. These are: educating the public, incorporating public values into decision-making, improving the substantive quality of decisions, fostering trust in governments, and reducing conflict. Although these goals are seen as having real value for society, it is important to remember that their success largely depends on how participants feel about the decision-making process [54].

A third category of evaluation studies (e.g., Brown and Chin [61]; Webler [62]) are based on a combination of process- and outcome-oriented benchmarks. For example, Webler's [62] normative evaluative framework defines two meta-criteria for effective public participation: competence and fairness. Competence refers to the ability of the decision-making process to reach the best decision possible given what was reasonably knowable under the present conditions (e.g., using the best available information). Fairness, on the other hand, refers to the opportunity for actors who view themselves as stakeholders to assume a legitimate role in the decision-making process [62].

At present, the state-of-the-art evaluation frameworks seem to have increased more in complexity (see Table 3.1) than in generality: numerous criteria and indicators have been theoretically outlined, and tools have been empirically applied to a variety of participatory procedures, but they are mostly (and inevitably) context-dependent and thus cannot be universally held [22]. However, many authors – included those mentioned above – have strived to offer a systematic view of the field. Among recent efforts, Stephens and Berner [63] proposed to group the evaluation indicators of public participation into three general categories: process (i.e. decision-making, representation, participation, opportunity to integrate views, information, transparency and balance of process, early involvement and structure), outcome (i.e. education, values incorporated, quality or acceptability of decision, learning/understanding/trust, respect/reduction of conflict/legitimacy and efficiency), and costs (direct costs, such as staff labour reimbursement, time, facilities, facilitation services, materials, travel, specialists/experts, and indirect costs, such as time investments and the frustration of having divergent viewpoints).

In this study, we primarily referred to the oft-cited evaluation framework proposed by Rowe and Frewer [21], [64], and Edwards et al. [65]. However, given (a) significant overlaps with a broader body of scholarship, and (b) their narrow definition of public participation outcomes, we integrated their contributions with a number of additional evaluation criteria and indicators of success. In doing so, we put forth a novel evaluation framework dealing with the whole spectrum of issues related to public participation – i.e., concerns around democratisation, practical considerations, decision-making impact, and broader positive impacts – in a simple yet comprehensive manner (see Table 3.2).

Table 3.1: Common benchmarks for effective public participation (Source: Rusman [66], pp.36-37)

Benchmark	Description
Capacity building	A public participation activity should build and strengthen capacity for future cooperation and/or decision-making processes.
Clarity	The nature of the participation exercise should be clearly defined. The roles and responsibilities of all participants must be clear.
Comfort/ Convenience	Public participation tasks should be comfortable and convenient.
Conflict resolution	Public participation efforts should avoid or mitigate conflict. Participatory programmes should resolve conflict during the process.
Consensus	Decisions made as a result of public participation should be based on consensus.
Deliberation	There should be a substantial degree of discussion (interaction, dialogue, information exchange) in which participants justify their opinions and show willingness to change their preferences.
Democracy	The participation activity should realise democratic principles.
Early involvement	Participants should be involved as early as possible in the process.
Efficiency	Public participation practices should be efficient in terms of cost and time.
Equal accessibility	The decision-making process is open to actors who view themselves as stakeholders. All actors should have an equal opportunity to access the process.
Equal voice	Participants are given equal opportunities to provide their opinions during the process.
Fairness	The decision-making process and outcomes should be fair.
Impartiality	The public participation activity should be conducted in an independent, unbiased way. The process is not steered towards a particular stance and the sponsor is impartial during theprocess.
Influence on policy	Participants should have a significant degree of influence (control/authority) on policy.
Information quality	The information provided to participants should be of sufficient quality.
Learning	Participatory efforts should be educative. All those involved have the opportunity to learn from one another.
Mutual Understanding	The public participation activity should build mutual understanding between stakeholders. Actors should gain a deeper understanding of others' positions.
Political legitimacy	The decision-making process and outcomes are widely accepted and supported.
Relationships	Public participation practices should build and strengthen social networks during the process.

Representation	All relevant participants and viewpoints are adequately represented during the process. Every reasonable effort should be made to involve divergent opinions, needs, concerns, and values.
Resource accessibility	Participants should have access to adequate resources to enable them to successfully achieve their objectives.
Respect	Organisers and participants are respectful of each other.
Satisfaction	A public participation initiative should result in high satisfaction among participants.
Shared vision	Public participation efforts should result in agreed and clearly defined vision(s) and goals.
Social justice	Risks, benefits, and costs are distributed fairly. The final decision does not harm specific groups.
Structured process	The public participation exercise should use/provide appropriate mechanisms for structuring and displaying the decision-making process.
Quality of decisions	Public participation should improve the substantive quality of decisions (policy).
Transparency	The participation exercise should be transparent so that the relevant population can see what is happening and how decisions are being made.
Trust	Public participation should increase trust among participants and foster trust in the sponsor so that the sponsor is seen as responsive, committed, and capable to implement decisions.
Workable solution	Public participation activities should create an acceptable solution that can be implemented.

Table 3.2: Evaluation framework employed in this study

Evaluation criteria		Indicators	Source(s)
Process	Democratisation	– Evidence that the public participants comprise a broadly representative sample of all affected stakeholders – Evidence that the participation processes were conducted in an independent, unbiased, and fair way. – Evidence of "upstream" public engagement. – Evidence of procedural and decision-making transparency.	[21], [22], [65], [67], [68], [69]
	Workable participation processes	- Evidence that relevant activities were comfortable and convenient for all participants. - Evidence of efficiency (in terms of direct and indirect costs). - Evidence of institutional and/or organisational support to participants.	[64], [63]; [21]; [66]
Outcomes	Decision-related outcomes	– Evidence of significant degree of influence on decision-making. – Evidence of agreement on workable solutions and/or shared visions. – Evidence of better-quality decisions (e.g. accounting for social justice concerns).	[21], [64], [70]
	Other outcomes	– Evidence of strengthened civic capacity for participation. – Evidence of mutual learning and understanding. – Evidence of increased trust among participants and in institutions. – Evidence of satisfaction with participation processes. – Evidence of community building.	[54], [61], [70], [71]

3.3. Research methodology

Research reported in this chapter is part of a larger project that examined the diverse forms of public engagement in sustainable energy transition processes in island and isolated territories. In light of multiple criticisms focusing on the near inoperability of genuinely participatory practice [15]–[17], we have adopted a case-study research approach in order to generate an in-depth, multi-faceted, and nuanced understanding of the complex issue of public participation in its real-life context [72]. To gain a broader appreciation of the issue, the research conducted a comparative research analysis, drawing on insights from two paradigmatic case-studies [72] of island energy transitions: Ushant (France), and Tilos (Greece).

The first of the two case-studies, Ushant, is a small island situated 25km away from the port of Le Conquet, with a permanent population of 860 inhabitants. The island is the epicentre of experimentation with sustainable energy solutions in the Iles du Ponant region, with multiple organisations delivering innovative green energy solutions on the island for over a decade [73], [74]. Amongst others:

a) The 2012 MERiFIC (Marine Energy in Far Peripheral and Island Communities) project provided initial insights into the marine and tidal energy potential in the region.
b) PHARES is a pioneering project led by AKUO ENERGY in partnership with SABELLA that is responsible for the construction and implementation of a hybrid insular energy model combining three different sources of renewable energy: two tidal turbines of 15-meter rotor diameter and 500 kW each, one wind turbine of 0.9 MW, a photovoltaic installation of 500 kW, and an energy storage system provided by EDF SEI. These installations will bring the renewable energy ratio up to 80% of the energy mix of the island (today 100% fossil-fuel dependent) [73], [74].
c) The Intelligent Community Energy (ICE) project led by SDEF has been contributing to the development of smart grid solutions that combine electrical engineering, information and telecommunications technologies [75].

The second case-study, Tilos, has been the testbed of a critically-acclaimed novel energy model. The TILOS-Horizon 2020 project demonstrates the optimal integration of local scale energy storage in a fully-operated, smart island microgrid on Tilos island, Greece, that also communicates with a main electricity grid. The main objective of the project was the development and operation of a prototype battery storage system, based on NaNiCl2 batteries, provided with an optimum, real-environment smart grid control system and coping with the challenge of supporting multiple tasks, ranging from microgrid energy management, maximization of RES penetration and grid stability, to export of guaranteed energy amounts and provision of ancillary services to the main grid [76]–[78].

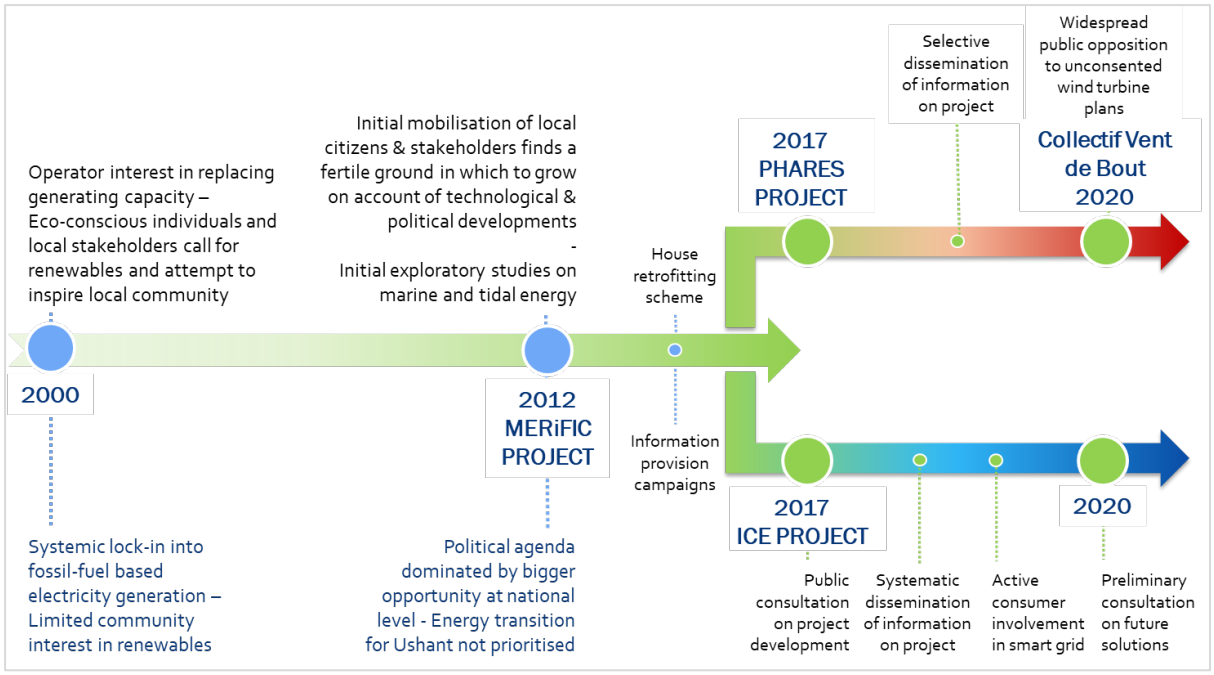

Figure 3.1: Timeline of public participation in Ushant's sustainable energy transition

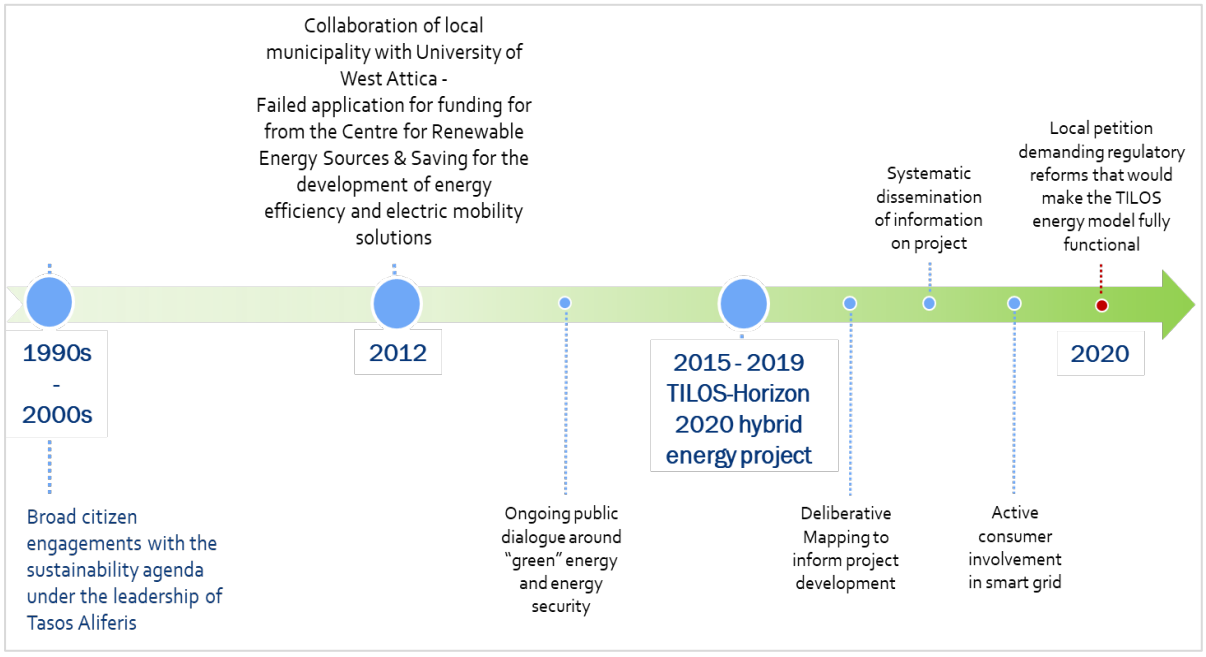

Figure 3.2: Timeline of public participation in Tilos' sustainable energy transition

Both case-studies have been extensively studied from a technological point of view [75]–[78]. Very little is, however, know about the role of public participation in these transition processes. This is far from a coincidence: funding at the European level is still dominated by techno-economic interests, and

not much room has been given within the various funding programmes for research into the social dimensions of energy transitions [79].

However, through direct involvement in the ICE and the TILOS-Horizon 2020 projects, the research team was in a position to uncover the otherwise overlooked social dimensions of the transitions. Indeed, alongside important technological and infrastructural interventions, both case-studies are characterised by a long history of public participation in the transition process/ As Figures 3.1 and 3.2 detail, the local communities have been involved in the energy transition process for more than two decades:

a) Through initial failed mobilisations around renewable energy technologies,
b) Through participation in formalised public participation events organised by various project developers,
c) Through active engagement with novel smart grid technologies, and
d) Through recent grassroots mobilisations challenging incumbent regimes and interests.

Given these rich yet overlooked histories of public participation in both Ushant and Tilos, in conducting this research, we move significantly beyond mainstream or traditional approaches to energy participation that are solely concerned with the periodic consultation of citizens on particular energy issues, such as the siting of new energy infrastructure (see Chilvers and Kearnes, [53]). Instead, we critically evaluate public participation as this has unfolded through the entire transition process, accounting for both formal/invited and informal/uninvited forms of public participation (Fig. 3.1- 3.2).

Moreover, in realising that participation is shaped by wider contexts of action and is not fixed or pre-given [80], [81], through the comparative case-study approach we are looking to better understand how different contexts underpin the nature and effectiveness of participation activities. In light of the complex mix of positive and negative outcomes of public participation [15], [19], [82], we respond to recent calls for research on the contexts in which participation yields positive versus negative outcomes ([21], [80], [81]. We especially explore the ways in which the outcomes of participatory practices are shaped by the interplay of three types of context: participatory rationales, social structures, and institutional settings (see Baker and Chapin [80]).

To uncover and critically explore these rich histories of public participation, we employed a mixed methods research protocol involving, inter alia:

a) Participant observation of public engagement activities;
b) A number of semi-structured interviews and focus group workshops with stakeholders and locals to explore the oral histories and experiences of public participation;
c) Document and social media analysis;
d) The analysis of quantitative data from questionnaire surveys.

3.4. Results

Critical analysis of the two case-studies on the basis of our novel evaluation framework uncovers massive differences in the quality of public participation activities in Ushant and France.

Table 3.3: Systematic evaluation of primary case-studies

				Performance score	
Evaluation criteria			*Indicators*	*Ushant (France)*	*Tilos (Greece)*
Process	Democratisation	–	Evidence that the public participants comprise a broadly representative sample of all affected stakeholders.	★	★★★
		–	Evidence that the participation processes were conducted in an independent, unbiased, and fair way.	★	★★★
		–	Evidence of "upstream" public engagement.	★★	★★★
		–	Evidence of procedural and decision-making transparency.	★	★★★
	Workable participation processes	-	Evidence that relevant activities were comfortable and convenient for all participants.	★★	★★★
		-	Evidence of efficiency (in terms of direct and indirect costs).	★★	★★★
		-	Evidence of institutional and/or organisational support to participants.	★	★★★
Outcomes	Decision-related outcomes	–	Evidence of significant degree of influence on decision-making.	★	★★★
		–	Evidence of agreement on workable solutions and/or shared visions.	★	★★★★
		–	Evidence of better-quality decisions (e.g. accounting for social justice concerns).	★	★★★★
	Other outcomes	–	Evidence of strengthened civic capacity for participation.	★	★★★
		–	Evidence of mutual learning and understanding.	★	★★★
		–	Evidence of increased trust among participants and in institutions.	★	★★★
		–	Evidence of satisfaction with participation processes.	★	★★★★
		–	Evidence of community building.	★★★	★★★
			Average score:	★½	★★★½

Key:

★ *Below average*
★★ *Average*
★★★ *Above average*
★★★★ *Exceptional*
★★★★★ *Sets new "best practice" standards*

As detailed in Table 3.3, public participation activities in Ushant consistently scored below average and, thus, reaffirm the necessity to challenge romanticised accounts of public participation [5], [17], [20]. On the other hand, however, public participation activities in Tilos seem to have been far more effective in empowering the local population, with the case-study consistently performing well against all evaluation criteria and indicators. Hence, and contrary to Cooke and Kothari [17] who believe that public participation is inevitably bad and disempowering, Tilos manifests itself as an example of good public participation practice. Indeed, public participation activities on the island were directly informed by best-practice guidelines such as those introduced in the second chapter of this report. Importantly, however, the systematic analysis uncovers how: (a) Tilos is far from an exceptional case-study, and (b) comparatively unsuccessful case-studies of public participation, such as Ushant, can still demonstrate evidence of either good practice or positive outcomes (e.g., community building).

Accordingly, the following three sub-sections provide a detailed overview of the relative strengths and weakness of public participation in the two islands, and attempt to account for the role of context in shaping public participation.

3.4.1. Public participation in Ushant

The systematic application of the evaluation criteria to public participation in Ushant's energy transition uncovers multiple process- and outcome-related shortcomings and, thus, a below-average score of 1.3 stars was awarded. The transition governance paradigm adopted in Ushant was, in other words, a far cry from true participation. Whilst this would involve a high level of empowerment of the public and a direct input into the decision process (see Arnstein [23]), we instead encountered a number of participative activities that yielded no real power to the local community. Indicatively, the wind turbine project of PHARES exploited provisions of the French law concerning the pre-requisites for public consultation, and did not launch a formal public enquiry process[3].

Indeed, past and ongoing energy transition projects implemented on the island have focused on the provision of information around pre-determined action plans to the local population. Decision-making happened behind closed doors, with no real evidence of procedural and decision-making transparency and fairness. The ICE project consortium has played a major role in this campaign to "convince" the local population of the necessity of this energy transition. This has involved investing significant time

[3] According to French law, a public enquiry must by carried out for turbines more than 50 metres tall (Source: The wind turbine proposed by the PHARES project is 47 metres tall. (see www.cms-lawnow.com/~/media/lawnow/pdfs/cms%20publications/sector%20specific%20publications/energy%20-%20transformation/qawindpowerprogress.pdf).

and effort to organise a number of communication activities that were both well-received by participants, and celebrated by the organisers as a cost-effective way of engaging consumers.

Figure 3.3: Public dissemination meeting, Ushant, November 2019

Figure 3.4: Interactive classroom activities to explore Ushant's sustainable energy future and progress towards decarbonisation, Ushant, March-May 2018

These activities have included:

a) The systematic dissemination of information leaflets,

b) Organising public workshops and meetings to present up-to-date information on the project and inspire locals to play their part in Ushant's energy transition (see Figure 3.3),
c) Inspiring and facilitating classroom discussions and interactive activities to explore Ushant's sustainable energy future and progress towards decarbonisation (see Figure 3.4), and finally
d) Organising a flagship exhibition making full use of audio-visual technologies and involving locals in a series of games and interactive activities focusing on Ushant's sustainable energy transition (see Figure 3.5).

Figure 3.5 (A and B): Interactive exhibition, Ushant, September 2018

The predominantly "decide-announce-defend" [83] approach adopted was, according to project partners, *'somewhat of an inevitability' (stakeholder 1, interview, February 2021)*. At the onset of the ICE project, consortium partners were, of course, interested in exploring possibilities for "upstream" public engagement; in *'adopting a participatory approach to enable locals to specify their key priorities for change and continuity' (ICE project proposal, Summer 2017)*. But resorting to a tokenistic participation paradigm was an inevitability as projects partners encountered significant barriers to participation. With the ICE project essentially filling-in the voids of either past work on tidal energy by the MERiFIC project and SABELLA or current major infrastructural developments made possible through the PHARES project, the consortium has essentially been "forced" to follow a specific transition pathway, with limited scope for upstream public engagement prior to committing to specific technological solutions.

But even though information provision was the focus of public engagement activities, this was not unproblematic either. No matter how willing project developers were to engage the public, participation ultimately depended on the public themselves. Several locals were not willing whatsoever to participate in events and workshops, arguing amongst others that they *'did not have the time capacity, expertise, know-how, or sufficient interest to attend' (Participant 12, questionnaire survey, December 2019)*. The

fact that we organised several activities and the prolonged, 20-year transition process also contributed to participation overload and fatigue among a specific segment of the local population, whilst their initial failed attempts to instigate a sustainable transition informed a relatively common feeling that their participation is not particularly important, that they *'would just waste time learning all the details about the project, without much scope for either changing anything, or of utilising all the information disseminated' (Participant 3, questionnaire survey, December 2019).*

The two graphs summarising key findings from a questionnaire survey carried-out in December 2019 and involving 10% of the local population are quite telling of how locals are overwhelmingly supportive of sustainable energy solutions, but considerably less interested in active/ upstream participation[4]. Figure 3.6 (A) demonstrates that up to 78% of participants in our survey had not attended any events concerning Ushant's energy transition. Quite similarly, 50% of the local population are not interested in adopting a community energy approach to the management of Ushant's energy system (see Figure 3.6 (B)). Even when individuals were interested in community energy, they remained unwilling to participate at an upstream stage or in decision-making and management, overwhelmingly arguing that *'this is something the local municipality should initiate and manage without really involving the lay public' (Participant 13, questionnaire survey, December 2019).*

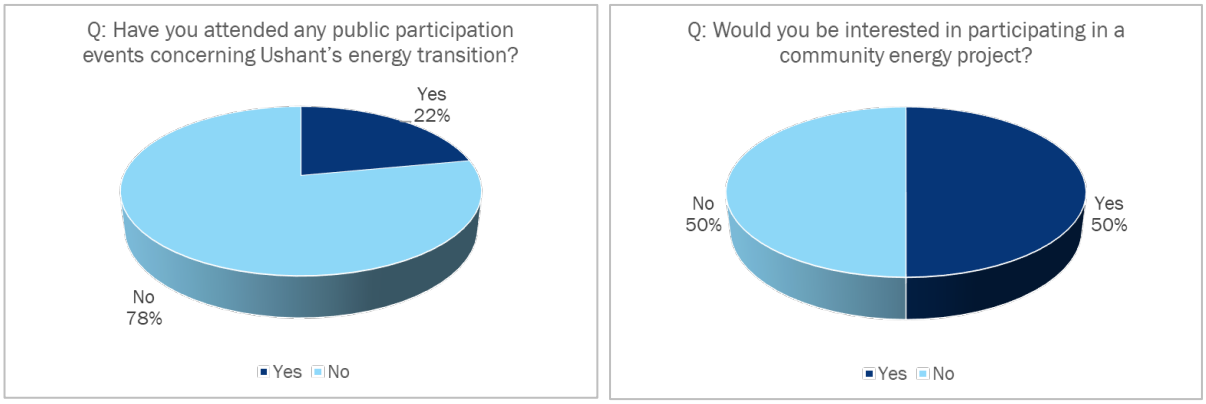

Figure 3.6 (A) and (B): Quantitative evidence of limited interest in public participation (Source: Questionnaire survey, December 2019)

Moreover, whilst locals were well informed about all technological solutions made possible through the ICE project, and for the solar and tidal energy projects of the PHARES project, they claimed that they were never informed about associated wind turbine development plans, with representatives of the PHARES project almost exclusively providing information about the solar and tidal installations.

[4] See Deliverable Report T.5.2. – Consumer Engagement in Ushant for further details.

Rather than helping restore public credibility, diffuse conflicts and restore trust in institutions that otherwise made decisions without accounting for public interests (see Wesselink and Paavola [84]), this selective provision of information rendered many locals suspicious, especially given failed wind energy experiments on the island in the 1980s and 1990s:

> *'Our greedy financial technocrats (including ministries) thrive when their portfolios swell at the height of their contempt for people. They try to force their way through Ushant, on the sly, bypassing all the protections that the island (normally) has that could make us feel protected.' (Participant 3, interview, May 2021)*

> *'We say "NO" to wind power developers who massacre our territories, despise populations, stuff themselves with subsidies and aggravate the energy poverty of the most disadvantaged! It is a financial scam that will make France dependent on energy. Wind power enriches powerful financial groups with our taxes and the complicity of politicians. […] Probably the greatest scandal of the beginning of the 21st century!' (Participant 1, extract from public comment on the Facebook page of Collectif Vent de Bout – Ouessant, December 2020).*

But there's significantly more to Ushant's energy transition and, as such, Ushant can under no circumstances be regarded as a worst-practice case-study. First, as part of our work on the ICE project, we have also been involved in efforts to make locals active participants in the transition, either through the systematic consultation of the public at critical stages of project development through the distribution of questionnaire surveys, or by inviting expressions of interest and involving interested householders in the emerging smart grid network. Whilst not informing decision-making directly, such activities have, at the very least, ensured that smart technologies depending on energy users for their successful operation are only introduced in interested households rather than being imposed upon the whole population of the island.

Second, whilst the locals were excluded from the formal decision-making process, the oral histories of Ushant's energy transition point to a number of local stakeholders who initiated the transition process whilst working behind the scenes in the early 2000s. Specifically, the journey of public participation in Ushant's energy transition began almost 20 years ago. The trigger was a need by EdF to replace some generating capacity. Environmentally conscious local citizens were aware of this and, alongside Ushant's mayor and stakeholders from Conciergerie Générale du Finistère, wanted EdF to invest in renewable generating capacity rather than simply replace the traditional fossil-fuelled units. A decade later, on account of significant technological developments the system and its stakeholders finally respond to these calls, providing a fertile ground for the initial mobilisation of local citizens to grow under the MERiFIC project that conducted initial studies on marine and tidal energy. This brings us to the third and, arguably, most important phase of public participation in Ushant's transition: the

introduction of a whole host of sustainable energy technologies on the island made possible through the ICE project and the simultaneous systematic engagement of Ushant's energy publics.

The fact, of course, that it took almost two decades for Ushant to take important steps towards energy supply decarbonisation, and without any formalised forms of public participation in decision-making, highlights multiple problems encountered in this process, some of which are acknowledged by local stakeholders such as Ushant's mayor himself. Specifically, in spite of the long-standing support for a sustainable energy transition by some local actors, this was not possible at the time in light of significant barriers to action that point to the persistent lack of local power to influence decision-making. Indicatively, the 2000s mark a period of very limited institutional support to locals and their interests; (a) renewable technologies were still immature and prohibitively expensive, (b) EdF had no interest in promoting renewables and had not yet developed a climate change mitigation agenda, and (c) local legislation designated a large part of the island a protected landscape area and forbid building any renewable energy plants at a distance less than 100m from the shore. Even when technological and political developments made a transition more likely, the political agenda was dominated by the bigger opportunity at regional and national levels and, thus, a localised energy transition for Ushant was only prioritised by those with decision-making power when this aligned with their own interests and priorities.

Third, and finally, against a backdrop of tokenistic formalised participation activities with negligible decision-related or other outcomes, engagement with local residents in Ushant uncovers how these activities informed the inadvertent emergence of new engagements around the energy transition. Widespread dissatisfaction with the nature of public engagement events to date – and, notably, with the profound lack of public consultation around important infrastructural developments – has recently informed the formation of the 'Collectif Vent de Bout – Ouessant' (see Figure 3.7). This apolitical and benevolent collective has been created to influence the debate for an energy transition respectful of Ushant, its fauna and flora, by and for the inhabitants and enthusiasts of the island, and to oppose the wind turbine project at Pen Ar Lan. This new community of practice has been especially active in raising awareness of the fact that the wind turbine project has not been the subject of a public consultation, and that the island risks serving as a *'technocratic laboratory for the energy transition to the detriment of biodiversity and the local community' (extract from public petition, June 2021)*. Through public protests, leafleting, and an online petition attracting more than 3288 signatories to date, and with the active support of the 'Association Naturaliste d'Ouessant', the locals are currently attempting to (re)claim a position in decision-making, and call for *'a transparent and quantified study on multiple different energy technologies as well as on their impact on the island (landscapes, flora and fauna, inhabitants, economy, etc.)' (extract from public petition, June 2021).*

Figure 3.7: Public protests organised by the 'Collectif Vent de Bout – Ouessant'.

3.4.2. Public participation in Tilos

In sharp contrast to public participation in Ushant, the locals in Tilos experienced a far more democratic and empowering energy transition process and, thus, a higher average score of 3.2 stars was awarded following the systematic analysis of the case-study. By exploring the oral histories of the transition process, through a series of interviews with locals and stakeholders, and through participant observation during the public engagement events of the TILOS-Horizon 2020 project, we uncovered substantial evidence of: (a) democratisation, as indicated by inclusive and representative public engagement, the fairness of the decision-making processes, "upstream" participation, and decision-making transparency; (b) an ambitious yet workable participation process; (c) the substantial outcomes of participatory decision-making, and (d) multiple other positive outcomes such as strengthened civic capacity for participation, and mutual learning and understanding.

The TILOS-Horizon 2020 research consortium did, of course, focus substantially on the provision of information to locals. Between 2015 and 2018, energy experts, interested stakeholders, project partners, and representatives of environmental and other organisations visited the island on a regular and actively supported the delivery of a large number of communication activities (see Figures 3.8-3.10). These included, inter alia:

a) The systematic dissemination of brochures detailing the TILOS energy model to virtually all residents and visitors of the islands;
b) Presentations on aspects of the TILOS project concerning locals directly (e.g. on smart metering and demand-side management, on issues to do with renewables and wildlife protection, etc.);
c) Presentations on the progress of the TILOS-Horizon 2020 project;
d) Training seminars on the use of smart home technologies;

e) The organisation of open discussion forums where energy experts answered questions and doubts expressed by several inhabitants on the specifics of the TILOS project;
f) The organisation of seminars targeting special interest groups such as the Tilos Women Cooperative, the local cultural association, the island's student community, and visitors/tourists;
g) The organisation of experience sharing workshops as part of a Summer School organised by the University of West Attica;
h) The organisation of a public seminar presenting key insights from the evaluation of the TILOS project;
i) The development of a permanently staffed information kiosk where people could get up-to-date information on the go.

Figure 3.8: Public opening of information kiosk, Tilos, October 2017

Figure 3.9: Training seminars for adults, Tilos, November 2016

Figure 3.10: Training seminar for students, Tilos, April 2016

In spite of the considerable effort, time, and resources invested in the communication activities mentioned above, the key defining feature of Tilos' energy transition was "upstream" public engagement. As the mayor of Tilos characteristically asserts, the TILOS energy model is a product of both technical expertise and public aspirations:

> *'This hybrid energy system of Tilos has been mplemented under the "Horizon 2020" program by 13 partners, under the auspices of the University of West Attica, and with the active support of HEDNO [Operator of the Hellenic Electricity Distribution Network], Eunice, and WWF Hellas are participating. These organisations made this energy transition possible, but it is also important to acknowledge the role of the fourteenth partner – Tilos' inhabitants themselves – in this process. […] Under the leadership of Tasos Aliferis [i.e., the ex-mayor of Tilos], we developed a long tradition in environmental protection and started seeking for "greener" energy alternatives since the early 2000s. We were the ones who initiated the cooperation with the University of West Attica in 2012 and submitted funding bids to help make our visions of a "green" island a reality. […] We weren't successful in securing funds back in 2012, but when the Horizon-2020 programme started, I received a call from the University of West Attica and they asked us if we were still interested in pursuing a sustainable energy transition. I immediately said "Yes!". I just knew everyone on the island was still supportive of this; whenever I met anyone, they would always ask me whether we have found a way of making our collective "green" island vision a reality' (Personal interview, September 2019).*

Alongside such informal forms of "upstream" public participation that acted as a catalyst for the energy transition process, the TILOS-Horizon 2020 project employed formalised forms of early-stage public involvement. Specifically, the public engagement agenda of the project consortium was primarily

informed by the following key criticisms of dominant energy transition governance paradigms [85]–[87]:

a) The apparent appraisal of energy supply proposals in 'contextual isolation' of alternative options for sustainable energy generation and distribution;
b) The inadequate methodological responses to the 'post-normal' scientific context in which climate change and energy supply resides; and
c) The premature 'closing down' upon particular future energy proposals through the exertion of power via framings (e.g. as evidenced by the side-lining of visions beyond the interconnection of electrically non-interconnected islands with continental Greece which constitutes the priority of the Greek government, the introduction of renewable energy plants and test projects without prior public consultation, etc.).

The project consortium implemented a Multi-Criteria Deliberative Mapping approach: an innovative analytic-deliberative methodology designed to 'open up' appraisal inputs and outputs to a broader diversity of framings, understandings, knowledges and future pathways. Going beyond the narrow and closed forms of technocratic assessment, the consortium aimed to account for a wide range of social, political and ethical issues through inclusive participation in decision-making, taking into account the views of a diverse set of 30 (expert) stakeholders and civil society actors [85]–[87]. Originally developed to progress debate around nuclear waste, the method has more recently been applied to assess geoengineering options for tackling climate change and to engage citizens around UK energy transitions [85]–[87]. Specifically, as part of Work Package 8 of the TILOS-Horizon 2020, the project partners used Deliberative Mapping to bring together specialists and islanders to appraise the proposed TILOS energy model against alternative future energy visions (see Table 3.4), significantly expanding the set of options and assessment criteria against which the TILOS energy model was assessed, compared to earlier attempts of technocratic assessment.

This process of evaluating the six future energy scenarios comprised of two parallel engagement strands: one for a representative sample of citizens for the island of Tilos and the other for concerned specialists and stakeholders, with the strands converging mid-way through and at the end of the process (see Fig.3.11). Following the analysis of a scoping questionnaire survey distributed, door-to-door, to the inhabitants of Tilos to help develop an understanding of key demographic, attitudinal, and behavioural characteristics of the local population, the citizen's strand of the Deliberative Mapping process began with the recruitment of a representative sample of locals. These individuals subsequently participated in a half-day panel workshop where they familiarised themselves with the diverse future energy visions before reconvening for two further full-day panel workshops where they developed assessment criteria and reflexively evaluated the future energy visions. In parallel, following a series of

scoping telephone/Skype interviews and email exchanges, 12 senior stakeholders/experts who held an understanding of sustainable energy transitions and energy supply in non-interconnected Greek islands and a diversity of perspectives in relation to their specialism, working sector and personal attitudes to sustainable energy solutions were recruited. The experts' strand began with 1.5-3-hour face-to-face interviews, which were subsequently followed by a series of shorter Multicriteria Mapping (MCM) interviews conducted several months later. Due to logistical challenges, a methodological novelty of this process involved distributed participation mid-way through and at the end of the process. Rather than bringing specialists and citizens together physically to a joint workshop to debate and reflect on different perspectives as in previous research programmes (see for instance [85]–[87]), the research team encouraged, supported and facilitated informal interactions over a period of several months using a variety of means. Inter alia, citizens and specialists alike were given access to accessible and comprehensive briefing notes summarising the views of the participants, and were successively invited to comment, challenge and evaluate the different viewpoints and, ultimately, arrive at a mutually-agreed solution.

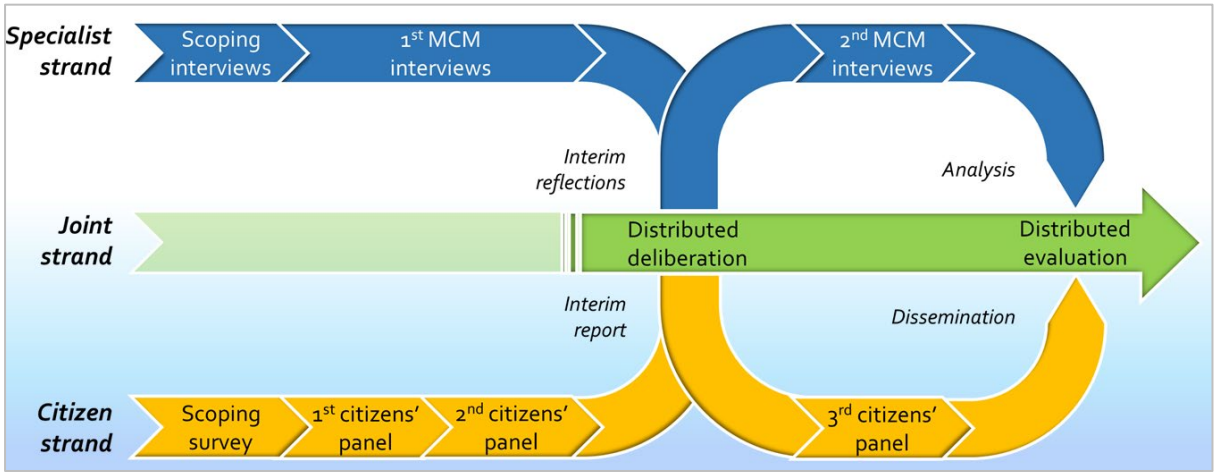

Figure 3.11: The Deliberative Mapping approach to decision-making adopted in Tilos

Across all key stages, the Deliberative Mapping (DM) programme followed a five-step multi-criteria option appraisal processes whereby:

a) Participants selected and/or defined future energy options to appraise,
b) Developed a set of self-defined criteria against which they would appraise these options,
c) Scored the performance of the options against the respective evaluation criteria, and
d) Assigned relative weighing to the criteria to indicate their importance, and
e) Produced a set of final performance scores for the respective options reflective of overall comparative evaluations.

Table 3.4: The future energy system scenarios appraised as part of the Deliberative Mapping process

Future energy scenario	Description
Optimised localgrids	A vision of a future that includes: a) the upgrade of conventional power stations in non-interconnected islands, and b) the introduction of advanced grid and supply managementsystems to enable somewhat greater exploitation of readily available renewable sources.
Continental interconnections	A vision of a future defined by the extensive integration of non-interconnected systems into the continental transmission system to achieve continuous energy supply at an allegedly low environmental cost.
(TILOS model) Autonomous smart islands	A vision of a future where non-interconnected or internally interconnected islands solely generate energy from local green sources that is either supplied directly to consumers throughlocal smart grids, or captured in storage batteries and released to the grid when necessary.
Synergistic energy production	A vision of a future where synergies among electricity production/ management and other local activities are planned, supported and developed through coordination of the various actors active in non-interconnected islands (e.g. renewable energy used to cover consumer needs for both electricity and mobility and/or desalination).
Democratic energy supply	A vision of a future where civil society actors have more of a say over what happens with the energy system. Upstream public participation in decision-making and the establishment of local energy cooperatives are prioritized to deliver appropriate solution, reduce opposition to renewables and, thus, deliver a democratic energy system.
Off-grid local communities	Making the most of tax deduction schemes for residential off-grid renewable energy systems, this constitutes a vision of a future where local communities live completely off-grid.

The final outputs of the DM process were subsequently analysed using a combination of qualitative and quantitative techniques, with the results: (a) shared with all participants for further commenting and evaluation, and (b) informing the development of the final TILOS energy model. These outputs are summarised in Figure 3.12.

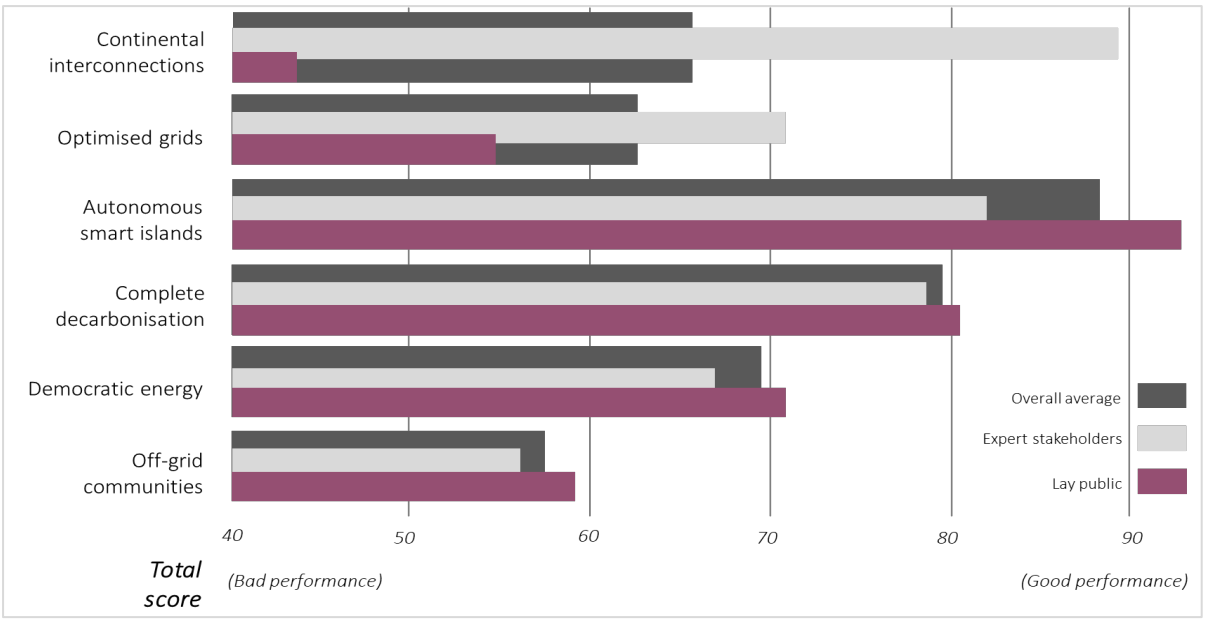

Figure 3.12: Quantitative outputs of the Deliberative Mapping process involving expert stakeholders and islanders from Tilos

As highlighted in Figure 3.12, the final TILOS energy model involving multiple "green" and "smart" energy technologies that would render the island of Tilos an autonomous micro-grid was selected in light of its comparative superiority over alternative future energy visions such as continental interconnections using seabed cables and the optimisation and significant upgrade of current fossil-fuel based energy production.

Whilst logistically demanding, this participatory decision-making model proved particularly effective, and the benefits of using it as a decision-making tool were widely discussed by all participants:

a) First, experts and locals alike acknowledged that this approach to decision-making helped inform better-quality and more ambitious decisions. Whilst experts tended to be more conservative in their proposals in fear of risks associated with public opposition or rejection of infrastructural interventions that would impose themselves on the landscape (e.g. wind turbines), or on the daily lives of individuals (e.g. demand-side management), the local inhabitants were far more supportive of local renewable and smart energy solutions and, thus, helped reassure technocrats of the contextual appropriateness of innovative energy solutions. The energy model implemented in TILOS was, subsequently, the product of agreement on a workable solution that would have not been implemented if the public didn't have a significant degree of influence on decision-making.
b) Second, the procedural and decision-making transparency afforded by DM helped restore trust in institutional actors. Given past failures to secure institutional support and funding for an energy transition, locals felt that that their needs and interests were overlooked by those with decision-making power; that they were *'second class citizens' (Participant 7, deliberative workshop 1)*. By gaining first-hand insights to the technocratic mindset, they were gradually able to understand the complexities of energy transitions and appreciate how expert stakeholders were looking out for them.
c) Third, the DM process was broadly celebrated as *'an experiment in democracy that strengthened the capacity of locals to participate in decisions that affect them directly' (Participant 3, final evaluation workshop)*. Whilst locals entered the process with relative unease and uncertainty, *'feeling like fish out of water who lacked the skills and knowledge to make decisions',* by the end of the process they all felt they had gained both knowledge of energy-related issues, *and 'they necessary confidence and know-how to participate effectively in decision-making' (Participant 1, final evaluation workshop).*
d) Fourth, and finally, the participatory process has informed the development of new communities of practice mobilising around energy transition demands by helping locals acknowledge their collective power to shape energy transition pathways. Practically, this is manifested by recent community mobilisations against incumbent regimes and interests. Through a petition campaign organised by the participants of the DM process and the local mayor, locals are currently demanding

important regulatory changes that would enable the complete autonomation of the electric micro-grid in Tilos – something that is technically feasible, but prohibited by the national grid regulator. In parallel, the discussions occurring during the DM process have inspired further local action towards complete decarbonisation – as exemplified, for instance, by the collective decision to replace all vehicles used by the local municipality with electric models.

3.4.3. Examining the role of different contexts in shaping public participation experiences

Against a backdrop of limited overall understanding of how contextual factors shape the nature and outcomes of public participation activities [80]–[82] the differences recorded between our two case-studies point to three types of context shaping participatory practice: (a) participatory rationales, (b) social structures, and (c) institutional settings. This provides understanding of how context dependence shapes participatory outcomes.

First, it is clear that participatory practice in Ushant to date is informed by a prevalent instrumental rationale [84] whereby energy transition goals were not open to negotiation, and communication campaigns and public meetings have simply been organised to either justify decisions, or engineer support for sustainable energy solutions through forms of education (see also Arnstein [23] on 'illusory' forms of (non)participation). The following extracts from interviews with the mayor of Ushant and other regional stakeholders testify to this assertion by putting forth a discourse around a local community that is ill-informed, apathetic, in need of convincing to accept an energy transition and, thus, largely incapable of any meaningful contribution to any discussions and decision-making around energy transitions:

> *'I'd say that people didn't really question where the electricity came from, although they knew it came from a power station and they gradually realised it wasn't necessarily the best solution ecologically speaking. But in any case, I don't think it was a pressing concern for locals. We had to start explaining to them that it was time to switch to something different, which was difficult because there wasn't a financial incentive […]. There's a real focus on awareness raising and that's what's needed, that's what we need to do with people […]. We are continuing to raise awareness among people. We explain to them that it's a form of energy that we'll have more control over than in the past. Because when you talk to people about individual energy savings, estimating their consumption better, even solar energy, some of them start to say: "Hey, I could put panels on my roof…". So people are getting more and more involved…' (Ushant's mayor, personal interview, January 2021)*

'From what I see, the locals are currently quite interested in energy-related issues, especially because the electricity power plant is next to the town, so they see the smoke out of the chimney, they know it makes some pollution… But I think it was too complicated at first to involve the public in the energy transition process. They are not experts; they couldn't really make any contributions to technical discussions and decision-making. […] Consumer engagement really started once we had concrete plans and something tangible to show and talk to them about…' (Stakeholder 2, personal interview, March 2021)

It's clear that our emphasis to date has been on a one-way flow of information; people have little influence or opportunity to express themselves. But it's necessary; you need to educate the public first, and you can then start planning for more participatory activities in the future' (Stakeholder 3, personal interview, March 2021)

In contrast, participatory practice in Tilos was also informed by substantive and normative rationales [84] that shaped the framing of the problem to be addressed, and desired outcomes:

'From our experience, public administrators tend to see public participation as a burden, as a distraction from technocratic management, or as a barrier to hitting targets in a timely fashion. There are many instances where the demand for societal responsiveness and representativeness compete with other organizational goals, such as efficiency requirements. But participation is important in that it may open meaningful dialogue that enables underrepresented or marginalised groups to convey concerns otherwise excluded; it enables the incorporation of a diverse range of values and needs and, therefore, it helps deliver more effective and workable solutions' (Staleholder 4, personal interview, December 2019).

'From the onset of the TILOS-Horizon 2020 we were well aware of the fact that locals were supportive of "green" and smart energy technologies, including wind energy which is typically controversial in other areas. Because of this we felt it was important to invest significant amounts of time and effort in our engagement activities so as to ensure that all the disturbance caused by infrastructural work on the island did not inconvenience or alienate the islanders; that it did not contribute to a shift in their general attitudes vis-à-vis sustainable energy technologies. But, most importantly, it made us realise that we could be ambitious in our engagement activities: we could invite people in decision-making and draw on their own valuable first-hand experiences and beliefs to shape the final proposal without risking an impasse whereby opponents of innovation and progress would oppose the introduction of sustainable energy technologies in their backyards' (Stakeholder 5, personal interview, February 2019).

Second, public interest and willingness to participate in various activities organised by project developers were shaped by strikingly different place-related symbolic meanings. On the one hand, and alongside a number of apathetic locals, many inhabitants adopted a place-protectionist stance. For them, the protection of the natural landscape, its fauna, flora and traditional settlements was a priority that was not respected by project developers, especially those involved in the PHARES project. As such, multiple members of the 'Collectif Vent de Bout – Ouessant' saw no point in attending public meetings where allegedly biased and partial information was presented without any scope for questioning, open discussion, or for direct input in decision-making. Instead, they formed their own independent technical committee that brought together energy experts and local volunteers to consider viable alternatives, with reports shared with local regulators capable of revoking PHARES' planning permission for the erection of a wind turbine.

On the other hand, locals in Tilos proudly presented themselves as *'energy pioneers'* and *'embracers of innovation' (field diary 2)*. Rather than distrusting decision-makers, stakeholders and project developers, they turned to them for support to realise their energy transition aspirations, and they always participated in various public engagement activities with great excitement. The most important feature of their islander identities was *'the fact that they were always forward-looking, embracing new technologies and ways of living that were environmentally friendly' (field diary 3)*. For them, *'the island had little to offer to tourists in terms of architecture and entertainment, and they could only aim at attracting individuals who would appreciate nature and renewable energy technologies' (field diary 3).* Indeed, Tilos' wind turbine came to represent *'the most obvious symbol of the "green" aspirations of the local populations, and one of the few iconic features of the island' (stakeholder 6, personal interview, December 2019).*

Third, willingness to participate in formal public engagement activities was informed by the relationships of locals with project developers. In Ushant, project developers, and especially the PHARES consortium, were always seen as *'outsiders seeking to impose specific solutions on the island – to exploit it as a technological testbed – without paying much, if any attention, to local needs' (participant 4, personal interview, May 2021)*. They very rarely visited the island and, thus, locals were unable of developing any direct connections with them. This uneasy relationship was recognised by partners of the ICE consortium who *'always felt uneasy when meeting the locals or when posing questions to them as part of research activities as they wanted to be respectful of local interests' (stakeholder 1, personal interview, January 2021)*. Conversely, the TILOS-Horizon 2020 project comprised of multiple individuals with either long-standing affinities with the local population, or even locals themselves. Therefore, the islanders *'never felt that specific solutions were being imposed on them by stakeholders who were completely clueless of what's happening locally' (participant 11, personal interview, September 2019)*. Instead, they *'had the opportunity to engage in informal*

discussions about energy futures and the TILOS-Horizon 2020 project on a daily basis and in an honest and transparent manner' (participant 13, personal interview, September 2019). Consequently, interest in participating in formal engagement activities was consistently high, and all segment of the local population became involved in such activities more than once over the course of the project.

Fourth, and finally, public participation in Ushant and Tilos was shaped by distinctly different power relations that shaped the energy transition process. On the one hand, and drawing on Lukes' [88] seminal work on the three-dimensions of power, it would appear that locals in both Tilos and Ushant lacked direct power over decision-making for the largest part of the transition process, as demonstrated by the extensive periods of standstill whereby individuals were after a sustainable energy transition but lacked the resources and necessary institutional support to make this possible (i.e. 1st dimension of power). On the other hand, however, following the initiation of the TILOS-Horizon 2020, ICE, and PHARES projects, differentiated power relations shaped public participation. In Ushant, project developers consistently exercised power through institutional means of agenda-setting (i.e. 2nd dimension of power) whereby plans and applications were not debated publicly and, instead, locals could only comment on a limited number of predetermined solutions. We also find evidence of institutional power to shape people's beliefs and ideologies (3rd dimension of power), as evidenced by the fact that many locals themselves felt that they had nothing to contribute to decision-making, and associated attempts to challenge dominant powerlessness discourses through the establishment of the 'Collectif Vent de Bout – Ouessant'. In contrast, locals in Tilos were able to participate in agenda-setting processes (2nd dimension of power), and demonstrated no evidence of being conditioned to believe that they had nothing to offer in decision-making processes (3rd dimension of power). Par contraire, the Deliberative Mapping process itself helped even the most sceptical of participants "appreciate the multiple different reasons why the input of civil society actors was important in decision-making processes". Perhaps the only persistent sign of relative powerlessness in Tilos was the fact that the local municipality and locals themselves were interested in adopting a community energy model that would enable genuine public control of energy and, thus fully materialise on energy democracy ideals [25], [45], but simply lacked the necessary resources and institutional support to do so at the time (2nd dimension of power).

3.5. Conclusion

The goal of this comparative case-study analysis has been to critically evaluate public participation paradigms in island energy transitions. It has addressed this aim by drawing on primary empirical data on Ushant, France, and Tilos, Greece. Through a systematic evaluation of the two case-studies it has uncovered the pitfalls and successes of public participation. The analysis was structured around four core themes that were identified as critical within engagement processes: (a) decision-making

democratisation; (b) workability of participation process, (c) participation as an outcome-oriented endeavour, and (d) public participation as a context dependent process.

Overall, the evidence indicates that complete energy democracy is desirable yet difficult to achieve in practice [17], [45]. Irrespective of their relative successes, both cases showed evidence of issues undermining participatory practice. These issues are reflective of past research. For instance, the case-study of Ushant exhibits common problems of public apathy for formalised public participation [7] linked with negative relations with stakeholders and past experiences [5]. Moreover, the "decide-announce-defend" [83] model adopted in Ushant is a classic example of so-called participatory practice without real commitment to giving people an effective voice [27], thus pointing to the persistence of a tradition of public participation practice that only engages civil society at the minimum level allowed by law [2], [27], [83]. These limited forms of inclusion were embedded within and further enforced persistent, pre-existing relations of social power between agencies and the public and did very little to weaken top-down styles of decision-making (e.g. [17], [23], [28]). Similarly, even though the case-study of Tilos was granted a higher evaluation score than Ushant, we were still able to find evidence pointing to the challenging nature of public participation. Here, most challenges were encountered in light of unfavourable contextual conditions.

Arguably, none of the qualitative differences recorded between the two case-studies are coincidental. Rather, by providing one of the first ever empirical accounts of contextual factors shape the form and outcomes of participation, we were able to demonstrate how participation practices in Tilos and Ushant were, ultimately, a product of the complex interplays between rationales for participation, power imbalances, social structures, and institutional settings. However, in sharp contrast to Cooke and Kothari [17] and Baker [80] who highlight the tendency of socio-cultural and political contexts to exercise control over public participation and, thus, limit its emancipatory potential for genuine civic empowerment, our findings also point to the role of civic society as agents for change. Even when forms of 'passive participation' [30] are imposed by those with decision-making power, there remains scope for 'self-mobilization' [30], whereby people take initiatives independently of external agencies (e.g., as evidenced by recent mobilisations in Ushant and Tilos). Thus a range of different actions co-exist under the umbrella term of participation in both locations; participation paradigms that generate both empowerment or disempowerment [31].Whether the final outcomes of participatory practice are empowering or disempowering remains to be seen.

Alongside stressing the importance of critical evaluation of participatory practice in island energy transitions, the analysis highlights a number of directions for future research. First, additional comparative studies of engagement processes would help to test the hypothesis that the contextual factors influencing participation practice and outcomes relate to issues to do with rationales, power dynamics and social and institutional factors. Second, the analysis drew mainly on data following the

adoption of specific participatory paradigms. Closer engagement with developers and relevant stakeholders at the design stage of participatory activities would help develop a more nuanced understandings of the factors shaping participatory practice from its cradle. Third, in line with other scholarship on the multifaceted roles of energy publics in transition processes [84, 86], scope exists to deepen understanding of public engagement outside organised decision-making fora, for example, where islanders are active agents of change in areas such as energy consumption and prosumption practices.

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4. Conclusions and implications for future research and practice

The diverse range of case-studies informing this research uncover the immense challenges of public participation in island energy transitions. First, the seventeen case-studies derived from peer-reviewed academic literature and introduced in Section 2 point to practical problems of engagement that are experienced in both island and mainland regions but are intensified in isolated territories. Qualitative differences between island and mainland areas may not be that major, and recognisable common themes exist around: building trust, capturing and respecting diversity of views, and a need for sensitivity towards each community's perceptions of the economic and social effects of energy projects on locally-significant industries, aesthetic values, and community cohesion. But otherwise similar issues are amplified in island energy transitions, with the potential to cause greater and more lasting impacts. For example, the small size of many islands, combined with the closeness and diversity of their communities, mean that inappropriately designed or conducted engagement processes may produce disproportionately damaging consequences because large portions of islands may be transformed by projects and entire communities may become polarised [1]–[3].

Second, the comparative evaluation of public participation in the sustainable energy transitions of Ushant (France) and Tilos (Greece) presented in Section 3 confirm scepticism with respect to the practicality of public participation [4]–[7]. As demonstrated especially by the "decide-announce-defend" [8] paradigm informing citizen engagement activities in Ushant, participation practices are, ultimately, a product of the complex interplays between rationales for participation, power imbalances, social structures, and institutional settings that tend to limit the emancipatory potential of public participation [4]–[7].

We are not alone in claiming that citizen participation is challenging. For instance, multiple commentators assert that public participation is premised on a number of reasonable but largely untested assumptions, and there remain deep doubts about its practicality, political significance, and even appropriateness [9], [10]. As detailed in Section 3.1, some scholars are strident in their criticism. Amongst others, Cooke and Kothari [4] challenge the pervasive belief that participation is unequivocally good, arguing instead that participatory processes are inherently and inevitably problematic. Subsequently, within recent discussions around energy transitions, core concerns about transition timeframes have been identified as delegitimizing participatory processes [11]–[13]. The crux of this argument is that overcoming the challenges of participatory and democratic processes requires time – a resource that in practice is often scarce. This also indicates that there is perhaps a tension here between expanding the scope of participatory processes and increasing the speed of socio-technical

change that at its core is unresolvable. Such observations might point towards some limits of participatory processes to achieve rapid transition [11]–[13].

However, the evidence presented in this report suggests that public participation in energy transitions is both *necessary* and *inevitable*. On the on hand, all successful energy transitions presented here included extensive public participation. For instance, the recurring case-study of Samsø (see Section 2) demonstrates the importance of a collective ownership model, with local groups vociferously opposing a proposal for another windfarm because it adopted a different development model and residents were not consulted until later in the process [14], [15]. Similarly, the TILOS energy model (see Section 3.4.2) is regarded as an expression of the cultural identity and autonomy of the island of Tilos in light of the "upstream" public participation adopted by the TILOS-Horizon 2020 consortium. In contrast, the sustainable energy transition of Ushant (see Section 3.4.1) has been significantly delayed in light of widespread public opposition to a wind turbine installation and subsequent distrust of project developers.

On the other hand, even when meaningful public participation is not a priority for project developers or other stakeholders, the public always seem to have a say in energy transitions. This is exemplified in this report by: (a) informal forms of "upstream" public engagement in the early 2000s initiating the transition process for both Ushant and Tilos (see Section 3.4), and (b) recent forms of public mobilisation against an allegedly ill-considered wind turbine installation in Ushant that counteract forms of 'passive participation' that were previously imposed by those with decision-making power (see Section 3.4.1).

Subsequently, rather than adopting an abolitionist stance vis-à-vis the challenges of participatory practice, we argue that meaningful public participation in (island) energy transitions should be prioritised. To date, energy transitions funding at the European level has been dominated by techno-economic interests, and not much room has been given within the various funding programmes for research into the social dimensions of energy transitions [16]. More sustained attention to issues relating to public participation is needed instead to:

a) Develop a more nuanced and dynamic understanding of how different contexts shape participation practices, paying attention to issues such as historical power/ political relationships, diverse rationales for public participation, community characteristics, and organizational constraints and resources;
b) Uncover diverse forms and otherwise hidden case-studies of societal engagement with sustainable energy solutions (e.g. as exemplified by the upstream initiation of the transition process in Tilos and Ushant) pointing to the fact that the public is interested in energy-related issues and not just apathetic or a barrier to energy transition processes;

c) Better understand additional forms of ongoing societal engagement around energy and climate change, such as everyday commitments to use smart or renewable home technologies that were beyond the analytical scope of this report;
d) Critically explore whether energy justice and energy democracy principles that currently constitute the focus of energy policy at an international level [17] are being adequately incorporated in energy transition processes on the ground; and
e) Cross-fertilise best-practice engagement ideas from across the multitude of different energy transition projects currently in development at an international level.

Multiple emerging case-studies across Europe could form the focus of this new wave of research on public participation. As Chilvers and Kearnes [17] (p.2) highlight, it is "now difficult to find processes of decision-making on science and environment-related issues that are not accompanied by forms of public participation and engagement". Indeed, emerging systematic mapping evidence demonstrates the multiple and diverse ways through which civil society and wider publics are involved in shaping and governing energy transitions [18]. Amongst others, we suggest the in-depth critical exploration of newly emerging yet understudied energy projects in La Palma (Spain) [19] and Pellworm (Germany) [20] that make claims around meaningful public participation and community empowerment through the adoption of collective decision-making and energy management paradigms (see Text Boxes 4.1 and 4.2). Moreover, whilst non-interconnected islands have received the lion's share of attention in recent debates around sustainable energy transitions, it is also important to consider the roles of public participation in other isolated territories, such as university campuses that are increasingly being discussed as ideal testbeds for sustainability solutions [21]. One such case is the University of East Anglia (UK) (see Text Box 4.3) where the UEA community appears to influence the energy transition journey in spite of the persistence of a top-down technoeconomic decision-making paradigm [22].

Against this backdrop, we recommend the development of a European Public Participation Observatory bringing together partners from across all sustainable energy projects funded by the European Union (e.g. Interreg Europe, Horizon-2020, etc.) interested in learning about, exchanging and applying experiences of participatory democracy at the local level.. This European Public Participation Observatory is deemed necessary in order to: a) map the diverse ways publics are participating in energy and net-zero transitions, b) develop a better understanding of the promises and perils of societal engagement in energy, and c) generate openly accessible whole-system evidence about public participation on an ongoing basis. It will serve as a platform for stakeholder learning and exchange, and translate the social intelligence produced from across multiple projects to help make low carbon energy transitions more just, responsible and responsive to society.

Text-box 4.1: Recommended future case-study 1 – La Palma, Spain

La Palma is one of the Canary Islands in Spain and home to approximately 85000 residents. The Canary Islands have been at the forefront of energy transition innovation with renewable energy facilities and novel energy storage and smart grid applications dotted around the Islands of El Hierro, Gran Canaria, Tenerife and La Palma. However, La Palma stands out for its approach on citizen participation not least with the project La Palma Renovable . The starting point has been that citizens need to be empowered in order to become active agents for the energy transition. One of the first steps to achieve that is to educate the public on issues of energy use and energy innovation. Besides information provision and training, the focus of La Palma Renovable is on collectivising decision-making through participatory tools and measures; on placing the citizens of La Palma, together with local companies and public administrators, at the centre of decision-making. Characteristically, the Island's Energy Transition Agenda has been put together by regional stakeholders including citizens, local companies and the local authorities through a series of specialised workshops. The working groups created in these workshops have been instrumental not only in analysing the energy situation on the island and in devising the Sustainable Transition Agenda, but also in implementing it and ensuring lasting commitment.

Text-box 4.2: Recommended future case-study 2 – Pellworm, Germany

Pellworm Island is located in the North Sea, off the coast of NW Germany and is home to approximately 1200 people. Pellworm Island is one of the first internationally to host a small hybrid power station consisting of eight wind turbines, solar panels and energy storage. Additionally, the island has a biogas reactor that helps with energy production when there is not enough wind or sun. With Pellworm lying almost 2 meters under the sea level at high tide, its residents have a high awareness of climate change and are interested in active engagement with the local energy transition. Indeed, thanks to a German law which guarantees citizen-producers premium prices for the clean energy they sell, the people of Pellworm, like several hundred other German communities, have become "energy farmers". Firstly, an energy collective consisting of 40 families owns and manages the island's wind farm. The wind farm collective benefits its owners with regular dividends from the sale of electricity which is state supported. Secondly, the solar PV facilities are spread on house and barn rooftops and owned individually by residents. Moreover, 10 households own electricity storage equipment (household batteries) and 20 households own heat storage facilities allowing for a more flexible use of the energy produced on the island. Local, collective ownership of energy facilities in place of relying on external investors benefits greatly public engagement with the energy transition on the island as this become an integral part of the residents' everyday life, with ongoing engagement with sustainable energy technologies inspiring future quests for complete decarbonisation of the island.

Text-box 4.3: Recommended future case-study 3 – UEA, UK

At the UEA the energy transition is largely approached in a top-down technoeconomic manner. Decision-making is mainly with the Sustainability, Utilities and Engineering Division. The main attempt to open-up the matter of the energy transition to the UEA community is made through the one-way sharing of knowledge and the regular publication of reports on environmental commitments, action and performance, with UEA's Environmental Sustainability Policy outlining a specific need for awareness raising and training through implementation of the Environmental Management to help involve staff and students in meeting University decarbonisation and sustainability targets. A number of information-provision campaigns are organised on a regular basis. Indicatively, the University organises campaigns before every holiday season providing staff and students with practical guidelines on energy saving whilst away from the campus.

However, the realisation of the pseudo-participatory nature of public engagement at the UEA should not obscure the fact that the UEA community, students, academic and non-academic staff actively engage with the University's energy transition in a range of additional and more participatory ways. For example:

a) The UEA hosts student and staff initiative and societies focused on sustainability (e.g., the Young Greens, the Sustainability Society, the Green Champions programme, etc.).
b) More recently, students and staff have established UEA's Extinction Rebellion branch, which encourages activism and direct action against climate change.
c) The University has engaged with students and found out about the importance of a range of green issues that matter to them. The Crome Court, the latest of a series of residential buildings, is the University's response to students' requests for a more sustainable campus since it complies with some of the strictest environmental standards.
d) Campus-wide consultations on energy transition issues are not uncommon at the UEA, with the Big Shift, Big Day campaign being organised to open-up the conversation about improving the sustainability performance of the University with student and staff led activities.
e) Finally, in acknowledging the shortcomings of previous top-down user engagement efforts at the UEA, the ICE project has been the first to engage students in a participatory journey through which they learn and are gradually empowered to be active agents in the energy transition (see also Deliverable T5.1.1 for details). The project includes technological intervention without being techno-centric. Indeed, the introduced smart heating trial has been designed to empower students and offer them the capability and responsibility for their residential energy use. A series of focus groups, interviews, energy diaries and other practical engagement methods have been used to explore and mediate the interaction between the user and the technology and to inform future interventions on the UEA campus on the basis of user experiences and preferences.

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