Situated Knowledges: Island communities and Sustainable Energy Governance

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Abstract

The role of communities has been identified as significant in the future success of Europe's, and indeed Ireland's, transition towards a decarbonised energy system. However, community structures and compositions in Ireland are varied and culturally disparate, obscuring appropriate sustainable energy transition pathways. At the community level, there are different understandings of, and attitudes to, sustainability and energy use. This is particularly evident in island communities where social interactions, activities and services are compositionally divergent from those in mainland communities. Demand and perceptions of energy are place-based, thus island energy needs and infrastructures differ culturally from mainland ones. Within these peripheral communities the conventional "one-size-fits-all" national approach to community engagement and public consultation has proved unsuccessful. This paper argues that prevailing practices promoting and recognising expert knowledge over local knowledge fosters a community engagement process that is inattentive and indifferent to the distinctive and divergent needs of island communities. Indifferent engagement processes discourage community participation and demoralises those actively seeking to engage. This paper reports how predominant universal-policy approaches to community consultation are further marginalising periphery or island communities where, typically, local knowledge is highly valued. It does so through an island-based case study analysis of Inis Oírr Island, in the Aran Islands, in the West of Ireland. Drawing on a social-constructivist perspective this paper assesses how current generic approaches to community consultation can be redefined to include inclusiveness of all knowledge in the complex energy issue. Building on results from this empirical study with residents in Inis Oírr, this study identified three mechanisms where situated energy knowledges mould perceptions and understanding of energy governance that are not present in existing literature. First - the role of the case-study community's periperality in shaping its energy governance structures. Second – their geographic and climate based experiences and household energy adaptations to account for them. And third – the case-study community's previous experiences of external energy governance structures and how this affects their levels of participation. This paper contributes to a better understanding of pathways to achieving a more collaborative, transparent, balanced and co-creative

community energy transition process that can better adapt to the atypical energy needs of island communities.

Keywords:

Situated Energy Knowledges, Island Communities, Sustainable Energy Transitions, Public Participation, Energy Policy

<u>**Introduction**</u>

Irish and European policy has been concerned with communities'[1] transitions to sustainable, low-carbon societies in recent decades (SEAI, 2010, DoCEaNR, 2015, Hassett (Heaslip) et al., 2014). To date, energy policy in Ireland has been predominantly technologically based (DoCEaNR, 2009, DoCEaNR, 2013, DoCEaNR, 2015, Connolly et al., 2011, DoCaMNR, 2007) and profoundly influenced by technology's generic and one-dimensional operation in meeting communities' energy needs. This practice has resulted in a generic approach to community renewable energy engagement that often are not appropriate to communities' specific needs (Walker et al., 2010, Rogers et al., 2008). Community configurations and organisations in Ireland are diverse and culturally distinct, obscuring appropriate sustainable energy transition pathways. Furthermore, at the community level, there are diverse interpretations and perceptions of energy. As a result, predominant universal approaches to community energy have been unsuccessful and fostered ill-will and prejudice in the energy planning process (Walker, 2008, Walker et al., 2010, Wüstenhagen et al., 2007, Rogers et al., 2008, Blake, 1999). As a consequence, an unsympathetic energy planning environment exists, where local voices are overpowered by louder, more confident "expert" voices and are categorised and expressed using experts' language. As a consequence, local opposition to renewable energy takes root, breeds and intensifies in this cacophony of perceptions and multiple interpretations (Blake, 1999, Nygren, 1999, Raymond et al., 2010b, Burch, 2010a, Burgess et al., 1998, Devine-Wright, 2005).

These energy planning tensions are arising while, concurrently, aims to achieve EU energy targets are climbing up the Irish political agenda. In 2012, the Irish government released it's *"National Renewable Energy Action Plan"* (DoCEaNR, 2012) which describes Ireland's commitment to reach 40 per cent renewable electricity and 12 per cent renewable heating by 2020. Electricity generated from renewable energy reached 20.9 per cent of gross electricity consumption in 2013 (Howley et al., 2015) highlighting how Ireland is facing a considerable challenge to meet its energy targets by 2020. In 2014, Ireland imported 85 per cent of its energy requirements (ibid.) leaving the country vulnerable to fluctuations and

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[1] The author recognises that many different types of communities exist, that communities are not homogeneous and that there can be multiple communities of practice within a spatial community (Crow and Mah, 2011). The term "community" is used here to designate a spatial community or a community of place.

instabilities in the price of energy resources. Furthermore, research by the ESRI has outlined how previous energy knowledge development programs in Ireland have been unsuccessful and highlights how the current information provision model has not been effective (Diffney et al., 2013). Responding to these events, Irish policymakers released the government white paper; *"Ireland's Transition to a Low Carbon Energy Future"* in 2015 (DoCEaNR, 2015). More consideration was afforded to the role of communities in Ireland's energy future than in preceding white papers (DoCaMNR, 2007) on Ireland's sustainable energy future. The complexities of community engagement with the energy issue have been earmarked for considerable focus in the coming years (DoCEaNR, 2015). However currently, the Irish policy approach to community energy projects is haunted by a legacy of tensions and mistrust on the part of communities (Hassett (Heaslip) et al., 2014, NESC, 2014). Past and present practices of categorising community energy needs' and solutions by policymakers' and experts' standards has created an exclusionary, hostile energy planning environment for the inclusion of communities' local knowledges. Why this practice of dominance of technical knowledge exists is unclear, as research into sustainable energy transitions in Ireland to date has been predominantly technological based and concentrated on the implementation of international and national energy policy. In an attempt to address this deficit, this paper considers communities situated energy knowledges in relation to energy and energy governance and policy. This paper begins by describing how energy perceptions and understandings might be reimagined within a situated knowledge and social-constructivist framework. It then outlines a case-study of people's place-based energy knowledges, providing a basis for discussion of the role of situated knowledges in moulding perceptions and understandings of energy. The paper continues to compare energy needs and understandings in island communities and those in mainland communities to determine existing divergences. This exploration lays the foundation for an examination of the influence of these disparities on the case-study island's propensity to self-govern their energy structures. Having outlined the impacts of these situated energy knowledges, this paper delves into opportunities to empower the case-study community to embark upon sustainable energy transitions themselves. The concluding discussion highlights the link between the case-study community's perceived marginalisation and their tendency for self-governance, adaptive energy needs and understandings, and low levels of participation in the policy arena.

Situating Energy Knowledges

A review of literature (Greene and Rau, 2016, Blake, 1999, Cass and Walker, 2009, Lund, 2010, Rogers et al., 2008) has revealed that research on sustainable energy use and understandings has been predominantly quantitative in nature. Communities' energy knowledge development and perceptions and understandings of energy are complex and place-based phenomena (Raymond et al., 2010a, Devine-Wright, 2012, Devine-Wright and

Howes, 2010) that must be situated in cultural, social and political contexts. The importance of situating the production of geographical knowledges has been a fundamental consideration of many discourses of feminist research methodologies in recent decades. Central to the notion of situated knowledges is the premise that there is not one truth to be uncovered (Nightingale, 2003) and thus all knowledge is tied to the environment that it was created in. The concept of situated knowledge was developed by Donna Haraway (1988) in response to feminist geographer Sandra Harding's *"The Science Question in Feminism"*(1986). The ambition of situated knowledge was to enable feminist philosophers to develop more expansive and inclusive interpretations of social relations (McDowell, 1993). The idea of situated knowledge had been incorporated into the field of environmental geographies in an attempt to better understand the complexities of community understandings of the environment. Nygren (1999) integrated the concept into her environmental studies in Nicaragua to explore hybrid knowledges which transcend the usual dichotomy between universal and local or place-based knowledge. Nightingale (2003) argued that the triangulation of methods employed during her research in Nepal offered a good vantage point to examine the situated knowledges of the case study community. More recently Nightingale (2016) has addressed the problem of multiple epistemologies that exist in community development and planning processes. Nightingale describes evidence of how the crude natures of feedback loops are unable to deal with the subtleties inherent in interactions of local and expert knowledges. Nightingale (ibid.) reaffirms the argument that all points of view are valid but that triangulating equally between them is extremely challenging. Ultimately, during the process of triangulation, expert views gain prominence and the local knowledge is blurred losing its authenticity (Nygren, 1999). Conclusively it is less important to determine which type of knowledge is more relevant, but rather to recognise that differing cultural, political, social and place-based circumstances can be represented by varied types of knowledge (Nightingale, 2003, Nightingale, 2016). The importance of context when researching energy knowledge, understandings and perceptions is fundamental to the research which this paper is based upon. This work builds upon the premise that all knowledges in community energy transitions are valuable and that collaborative community transitions can only be achieved when situated energy knowledges are given more weight by policymakers.

Researching Energy in Island Communities

Islands are perplexing places that reside between unpredictable sea and dependable land. Their unique geography has caused them to be understood in inconsistent and erroneous ways in the past resulting in their isolation and strengthening linkages within their self-contained communities (Royle, 1989). Demand and perceptions of energy are place-based, thus island energy needs differ culturally from mainland approaches to energy demand and infrastructures. Small offshore islands are heavily dependent on external linkages and

product importation (Cross and Nutley, 1999). Furthermore, they are more likely to exhibit problems of economic viability, social isolation and external dependency generally in adverse proportion to their size and capita (ibid.). Small islands which lie offshore of a much larger island (mainland) are particularly liable to demonstrate economic and political dependence (Royle, 1989). This insular status subsequently creates peripheral isolated communities in both the geographic, economic, political, energy and social sense. This peripherality often translates into economic marginality and neglect by the central power (Cross and Nutley, 1999). This marginality also spans into the domain of energy and energy provision. Often, peripheral communities' services are not in-line with those in mainland communities, creating animosity towards mainland energy policies and governance structures. As a result, social interactions, activities and services in island communities are compositionally divergent from those in mainland communities.

Furthermore, public participation in the development of community energy projects is lacking in island communities. This paper argues that this is due, in part, to predominant universal-policy approaches to community consultation which further marginalise periphery or island communities where, typically, local knowledge is highly valued (Cross and Nutley, 1999, Royle, 2002). Demand and perceptions of energy are placed-based, thus energy needs and perceptions in island communities differ from those in mainland communities. Small off-shore islands are heavily dependent on external linkages and product importation (Cross and Nutley, 1999) and this is even more prevalent in relation to energy. Unfortunately, small islands can also be more likely to experience economic difficulties, social isolation and external dependency that is proportionally higher per capita than those in mainland communities (ibid.). This gives more meaning and significance to the economic and social pressure of energy resource dependency than in mainland communities. Offshore island communities are generally one hundred percent dependent on imported energy and thus, are facing an increasing cost of living due to rises in the cost of energy (Denny and Keane, 2013).

Islands have long been viewed by technical experts as "microcosms" of larger communities while being more easily auditable than larger communities due to their "Bioregionalism" (Rae and Bradley, 2012). There have been many studies in the past in relation to technical and solutions for island communities and the economic viabilities of these solutions (Chen et al., 2007, Denny and Keane, 2013, Mitra, 2006, Duić and da Graça Carvalho, 2004, Weisser, 2004). Although much consideration has been given to islands due to their unique isolation in terms of technical and economic systems, the social consequences of this isolation have not been sufficiently explored. This paper argues that proposals for island community energy transitions must be considered within their place-based contexts and the situated energy knowledges of island communities to ensure a more collaborative and participative process.

Energy Communities in Ireland, Three Critical Themes: Knowledge, Governance and Communication

Among the key questions investigated in this paper are whether energy demands and perceptions in island communities are divergent from those in mainland communities. Also explored is the question of whether this leads to increased self-governance of energy structures in island communities and if so, how can these communities be empowered to embark upon sustainable energy transitions themselves? In order to attempt to answer these questions, three key themes are investigated in this work; knowledge, communication and governance in island communities. The first theme centres on the concept of situated knowledge as all knowledge must be considered and placed within its context (Nightingale, 2003, Nightingale, 2016). This paper considers the different types of knowledges involved in the process of community energy transitions; those that are considered "authentic" and those that are considered "synthetic" (Nygren, 1999). Tensions between these two dichotomies of knowledge epistemologies creates a conspiratorial environment of "them" (experts) versus "us" (communities) (Haraway, 1988). These concepts created the foundation upon which knowledge was investigated within this work. Several types of knowledge were explored (local, emotional, rational, technical, political and economic) within the contexts of the participants daily lives. The second theme investigated in this research was the theme of communication, primarily the prominent information deficit model of community consultation (Catney et al., 2013, Burgess et al., 1998) used to date. Community knowledge networks were also assessed (Catney et al., 2013) including the importance of existing relationships within community knowledge networks (Gilchrist, 2009). Also investigated is the effect of current public consultation processes' assumption of a deficit in public knowledge which, if filled, will encourage community participation (Burgess et al., 1998, Devine-Wright, 2007). Insider/ outsider distinctions that develop during public consultation processes (Moran, 2007, Devine-Wright, 2012) were explored with a view to understanding their role in energy governance in island communities. The existing role of government including institutional barriers to community energy development was also probed to gain insights into current deficits in Irish island energy governance structures. Although elements of the former two themes were intertwined within the latter theme, the role of situated energy knowledges in successful island energy governance is the main focus of this paper.

METHODS

Social Constructivist Perspective

This research adopts the social constructivist perspective which aims to emphasise the constructed nature of situated energy knowledges, exploring the many ways in which social and place-based relations shape demands, perceptions and structures of energy use and

provision. Since the eighties, constructivism has been an essential and pervasive concept in social science. Hacking (2000) differentiates between two diverse categories of constructivist debate: construction-as-refutation and construction-as-philosophical critique. The former, more popular, approach is one that employs the constructivist analogy to disprove what are considered erroneous views of the world. The latter delves into the certain philosophical interpretations of truth, objectivity and reality (Hacking, 2000, Demeritt, 2002). The divergent ontological approaches are based on these contrasting concepts of nature as an external object that can be impartially understood through ongoing philosophical insights (Demeritt, 2002). Building on this literature, this research examines the second form of constructivism which is often referred to as "social constructivism". This approach is essentially related to the discursive aspects of representation and power relations within these (ibid.). A social constructivist perspective in sustainable energy transition research challenges previous approaches based on understandings of technical solutions and processes. This work builds on the small but growing body of research incorporating constructivist perspectives and an experiential lens in examining sustainable energy transition issues (Blake, 1999, Cass and Walker, 2009, Rogers et al., 2008, Warren and McFadyen, 2010, Walker and Devine-Wright, 2008).

Case Study of Inis Oírr

Case studies have been used extensively in community sustainable transitions, especially with regard to local based knowledge and perceptions of energy (Walker, 2008, Walker et al., 2010, Mendonça et al., 2009, Schweizer-Ries, 2008, Devine-Wright, 2007, Warren and McFadyen, 2010). A case study approach is a good methodology for studying complex social based questions (Flyvbjerg, 2006) and enable direct engagement with the research problem (Yin, 2013). A place-based approach was undertaken in this research as it gives opportunities to explore many different variables in community sustainable energy transitions; practical, political and social. The case study methodology provides a suitable methodology for combining several different methods of data collection and interpretation (ibid.). This research investigates the issues of policy, but also addresses the phenomenon of community sustainable energy transitions as socially constructed and rooted in place. This case study approach seeks to develop an in-depth understanding of community understandings of sustainable energy transitions by recognising and engaging with the social complexities and place-based context within which these occur. This involves exploring the range of meanings and understandings that individuals share within these bounded constraints.

Inis Oírr Island in the West of Ireland was selected as a case study community for multiple reasons including its unique community structures, the exceptional fluctuations in energy

demand it experiences due to high visitor numbers in summer and the fact that it is an easily auditable island as regards energy imports. In terms of "Bioregionalism" (Rae and Bradley, 2012) Inis Oirr's insularity and remoteness from mainland Ireland gives it a uncommonly fitting situation as an easily auditable community in terms of energy demand. Inis Oírr island is one of the Aran islands, located off the West Coast of Ireland and has a population of 249 inhabitants (CSO, 2012) (Figure 1).
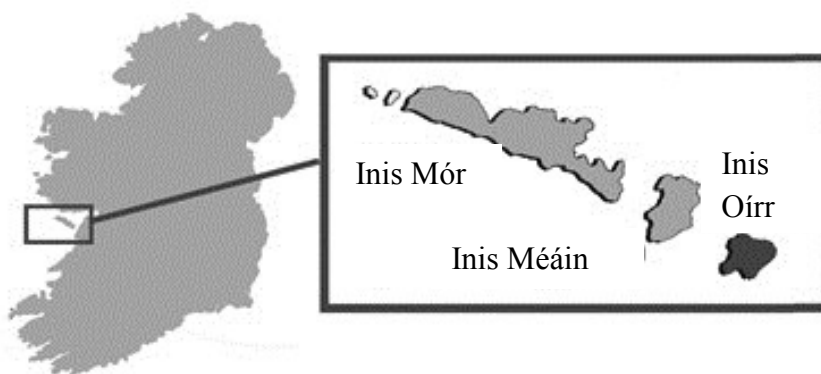

Figure 1. Location map of Inis Oírr Island off the west coast of Ireland

Inis Oírr is 100 per cent dependent on energy imports and, furthermore, is burdened with the rising cost of freight transportation that fluctuates accordingly with energy prices. Inis Oírr is also governed by community run organisational institutions, making energy demand in this community geographically and culturally divergent from those in mainland Ireland. Energy infrastructures in Inis Oírr are historically less dependable than those in mainland Ireland, leading to more adaptive and flexible community and individual approaches to energy use. Historically, island communities in Ireland were dependent on fishing and farming and have long been poor in services and infrastructure (Cross and Nutley, 1999). In recent decades, Inis Oírr has become more dependent on tourism and farming has dwindled. In 2014 there were 121,001 registered visitors to a single tourist attraction in the Aran Islands (FáilteIreland, 2015) with even more visitors to the Islands unaccounted for. As a result, electrical and heating demands have soared and during the summer months the energy cost provision per capita in Inis Oírr is significantly higher than those in mainland Ireland. As a result of freight charges islanders paid approximately 28 per cent more for their energy than mainlanders in 2014 (O'Maoildhia, 2014). The increase in visitor numbers, coupled with a legacy of inaccessibility (Cross and Nutley, 1999) has resulted in the residents' Inis Oírr having to make adaptations in their lifestyles in order to cope with

inaccessibility and higher resource demands. This included maintaining greater degrees of self-reliance, increased behavioural adjustments and lowered expectations (Cross and Nutley, 1999) in comparison with communities in mainland Ireland.

Scale, isolation and peripherality are major hindrances to islands and are often responsible for their being on the fringe of the political arena in Ireland (Royle, 2002). In the past, islands have been dominated and colonised through war (Royle, 2002), but today, islands are controlled using economic and political forces. Small islands that are on the continental fringe are more likely to lose their autonomy and be assumed into the nearest mainland local government unit (Royle, 2002). Political powerlessness is one of many problems that are faced by small island communities in Ireland and Inis Oírr is no different. In response to this in the mid-1980's a pressure group Comhdáil na nOiléan na hEireann (Council of the Islands of Ireland) was created to give political representation to the islands of Ireland, including Inis Oírr. One of its primary aims was to ensure that political structures in Ireland were adjusted to give the Islands of Ireland some form of collective voice and standing (Royle, 2002). Currently there is a Minister for the Arts, Culture and Heritage that governs all the island of Ireland. Comharchumann Inis Oírr (Inis Oírr Co-operative) was set up in the 1970's in order to facilitate the deliverance of certain basic services to the island and to represent Inis Oírr community externally. This co-op is run locally and all members of the board are residents of Inis Oírr.

Undertaking the Research

The aim of this research was to establish the range of understandings and meanings behind energy (situated energy knowledges) with particular bounded contexts of Inis Oírr's case study location. The objective of this research was the co-creation of a technical energy plan with the community in Inis Oírr Island. Due to the need for informed interviewing and quantitative data collection, the Problem-centred Interview approach (Witzel, 2000) was most fitting for this study. This approach included the collection of secondary materials and distribution of a survey, followed by focus group sessions, semi-structured interviews, quantitative data collection, ongoing participant observation and culminated in evaluative feedback sessions on the research process. The unit of analysis chosen was at the meso-level or household level (Reid et al., 2010). A snowball-sampling method was used to find potential participants within the case study community. A survey was distributed prior to the study and participants were selected and grouped together based on how they rated their level of energy action. A representative (aged 18 years or older) was chosen to represent their household and twenty nine participants were involved in the study. With approximately 120 houses in Inis Oírr in total, the study contained approximately 25 per cent of the islands population. Fieldwork was undertaken from May to September 2015.

Prior to the fieldwork being carried out, a notice was placed in the local newsletter distributed by the Comharchumann Inis Oírr to highlight the research and inform the community about the purpose of the study. Following the collection of the initial surveys, five focus groups were arranged to discuss the themes that had developed in the research (Table 1).

Table 1: Compositions of Focus Groups and levels of energy action

Focus group	No. of participants	Sex	Age group	Level of energy action	Occupations
1	5	3 men, 2 women	1*(25-44), 3*(45-64), 1*(>65)	>9	Community development/ business owner
2	5	3 men, 2 women	5*(25-44)	1- 3	Administration, business owner, teacher, recycling
3	5	4 men, 1 women	3*(25-44), 2*(45-64)	3-6	Café owner, retired, unemployed, tourism
4	3	3 women	1*(25-44), 1*(45-64), 1*(>65)	8-9	Administration, retired airline official, café owner & student accommodation
5	2	2 women	2*(45-64)	2, 6	Student accommodation, retired teacher

Participants were asked to discuss a series of open-ended questions centring on three main areas of analysis outlined previously: knowledge, communication and governance, with governance being the principal theme for exploration within this paper. Each focus group varied from 60 to 90 minutes and all were undertaken in a neutral location. The co-creation of a technical energy plan requires the emergence of explicit themes from the data. However assessing the role of situated knowledges on demand and perceptions of energy

requires a more flexible theoretical approach. Thematic analysis was employed in this research as it offered flexibility to examine and explore explicit themes that emerged (Boyatzis, 1998). Thematic analysis is a method for identifying, analysing and reporting patterns within data (Braun and Clarke, 2006) and involves a complex model of themes and indicators (Boyatzis, 1998). The following sections examine more closely the situated understandings and perceptions the play a role in community's sustainable energy transitions.

FINDINGS

Voices from the Edge

The following section reports on the response of the participants in the study in relation to a range of questions relating to energy and their daily lives in Inis Oírr. These questions established the place-based energy and governance issues that were of particular importance to the participants. Several key themes emerged in the data and these are outlined in the following sections. For the purposes of this paper, results relating to the three previously outlined categories: knowledge, governance and communication are presented here. "Knowledge" refers to the situated energy knowledge of the participants and how this relates to governance. "Communication" is concerned with how people relate to information and consultation processes. "Governance" encompasses elements of the former two categories and perceptions related to the public consultation process and mainland universal governance techniques. While the former two categories are not accommodated completely within the remit of the latter, the main concern of this paper was the role of situated energy knowledges in island energy governance. Several key themes emerged from the research dealing with remote governance, unpredictability of island life and past experiences of the public consultation process. The information contained in this work reflects participants' understandings and perceptions of energy and energy governance as expressed by them and are relayed in their own words. The participants prioritised and favoured different categories over others and this affected their demand for and perceptions of energy. For example, one participant owned a hotel, and prioritised the cost of energy over other aspects and thus made energy related decisions on this premise, whereas others were more concerned with ease of use and accessibility and made their choices based on these. The categories outlined below contain some overlapping themes but are broadly independent of each other. They do not represent groups of singular or identical opinions, but are rather expansive themes within which perceptions and understandings of energy governance can be contrasted and analysed.

Remote Governance and Local Knowledge

Key components within this theme include how participants understood local and expert knowledge, discussion of the importance of local knowledge in an island and perceptions that expert knowledge was something difficult to connect with and remote, worsening islanders' feelings of isolation. While local knowledge was highly valued by all participants, the concept of local knowledge was discussed from the perspective of it being of more consequence in an island setting. A reviewed earlier, Royle (1989) writes about the resilience of islanders and how their isolation creates a more collaborative environment. Geographical isolation leads to a more co-operative community where problems are shared and dealt with collectively. This was echoed in the participants' narratives with one participant explaining how islanders deal with problems by saying:

"If you have a problem……… (and) the solution isn't going to arrive on a plane or a boat, you are going to try and figure out is there a way around it yourself…… or with somebody else.…… it's a natural thing for islanders to try and solve problems (themselves)." (Philip[2], focus group 1)

The description of local knowledge as an internally "uncontested system" (Browder, 1995, Heyd, 1995) was reiterated by the participants in the study. One participant who moved to the island ten years ago summed up knowledge exchange in Inis Oírr as:

"Everyone that comes here brings their own unique skill set and they are happy to contribute that to the island". (Cathal, focus group 2)

Participants described their collaborative approaches to knowledge development and how this happened mainly within their isolated community. This is not unusual in relation to local knowledge for, as Nygren (1999) explains, local knowledge is practical, collective and rooted in place. As a result, participants' narratives revealed that islanders felt it was impossible for non-islanders to understand the complexities of their energy needs unless they had lived in Inis Oírr for a period of time. Participants stated that in terms of external governance, those that make decisions for the island should be:

"Someone that would know the "ins and outs" (of island life) and would have lived here (for) a few summers and winters." (Anita, focus group 4)

"They have no idea and they don't get it. It's the last place on their earth." (John, focus group 2)

Nygren (1999) describes the typical format of indigenous consultation as one where local knowledge is "extracted", categorised by experts' standards and then discarded when inconvenient. This was supported by the participants' narratives, many were keenly aware

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[2] In the interest of preserving the anonymity of the study participant's, all names used in this paper are pseudonyms

of the hollow approach employed in the Irish public consultation process with some describing the process as misleading. For 12 of the participants, this perception can be traced to previous experiences of the public consultation process in their area, with one participant saying:

"They just have to tick the box that they've done it, they don't have to take on board anything of what any-body says about any of it…………. There's no box (to tick) that says "Yes, and we've listened", just that they've done it." (Anna, focus group 3)

The "They" that is "the invisible conspiracy of developers" (Haraway, 1988) was repeatedly used with resentment as a term to describe those that remotely governed and were not from the island. This sense of frustration with mainland governance is commonplace within island communities which has forced them to create self-governing organisations in the past that were outside of the standard governance system (Royle, 2002). Many participants described the struggles for sufficient services in their youth and how their distinct needs were not understood by those governing departments on mainland Ireland. One participant described his frustration, saying about external governmental bodies:

*"They can't actually enter in their heads.... the concept of it... they think of it as the same as the mainland. They can't actually think outside of that picture. Very few... civil servants, or anyone else you are dealing with, understand at all ……. that you have... a problem to get on and off (the island) ……. You have to …… go over water." (*Philip, focus group 1)

Due to the importance of local knowledge in these peripheral communities, the universality of external governance is often lost on these communities. The place-based energy needs of these communities means that they tend to look towards local governance. Several participants described their awareness of how prevalent ubiquitous approaches to governance don't facilitate opportunities for small peripheral communities to have a place in mainland policy spheres. The participants were keenly aware of how typical policy implements were marginalising communities like theirs with one participant saying:

"Small communities, or small applicants don't always fit into the rules laid out for the majority. That's another constant." (Martha, focus group 1)

So in this specific time and place, feelings of isolation are leading participants to engage in local governance and operate outside of mainstream governance systems.

Living on the Edge and Unpredictability

Surrounded by water, islands enjoy changeable and sometimes unique environmental histories due to their geographical isolation (Klaus and Stephen, 2003). Islands have a complex relationship with nature and more particularly with weather. In recent years, Inis Oírr has been at the mercy of repeated storms that have ravaged their coastlines causing

considerable damage (NationalDirectorate, 2014, EngineersIreland, 2014) and cutting off external transport connections for weeks as a time. As a result of this forced isolation during the winter months, Inis Oírr has a more adaptive and self-sufficient community. Due to the unique and inaccessible way of life in Inis Oírr during these periods, islanders have privileged access to knowledge which others would have to get at great risk or expense to experience (Nightingale, 2016). In order to cope with this unpredictability in their daily lives caused by extreme weather events, inhabitants in Inis Oírr employ the use of "back-up plans" in all aspects of their lives, including energy. Although power outages are less common today, many of the participants' need for "back-up plans" stemmed from their childhoods and experiences of what the islanders called "black-out winters". Two participants explained how this affected their decisions when building their houses, saying:

"We do get storms and we do get power outages (Sandra, individual interview) …… When we built the house first, there used to be a lot of electricity interruptions, so we went for the gas ……. so at least if you were cut out, you would still have the cooking facility or be able to boil the kettle on the ring." (Enda, focus group 1)

This knowledge and adaptive approach to energy has been passed down through the generations, with some of the younger participants explaining how all houses have two methods of heating in case there are electrical outages in the future. One participant explained how this affected what types of energy sources were most popular on the island:

"Most people…. have oil, but they also have an immersion, so at least if the oil goes, at least you can heat your water, and you have a fire as well so you can have a back boiler." (Melissa, focus group 2)

This knowledge has been developed within the community over generations and has led to the community's desire for an adaptive energy supply with back-up facilities. Although scientific knowledge is often described as being the paradigm of all knowledge (Murdoch and Clark, 1994), as is evidenced in the participants narratives, local knowledge is developed in the same way as scientific knowledge (Nygren, 1999). Although in today's policy and planning arena the criteria of what constitutes knowledge is often described by developers (ibid.), meaningful insights into what is most appropriate for communities like Inis Oírr cannot be obtained without the inclusion of local knowledge.   A key component of life in Inis Oírr is the unpredictable nature of daily activities and sporadic isolation from external services. It is difficult for those from mainland Ireland to fully comprehend how heavily life in Inis Oírr is influenced by the weather. This can be understood best through the narratives of those participants that married islanders and moved to Inis Oírr. One participant described her experiences of life when she initially moved to Inis Oírr twenty years ago as:

"It was a bit difficult when I first came here because the ferry only came twice a day…… and you had to organise yourself a lot better. And I suppose I learnt that over the years that you

need to have all the essentials in and that you kind of have to be prepared. That's the biggest difference." (Aoife, individual interview)

The influence of weather on participants' daily lives was prominent in their narratives. Unpredictability is a driving force that must be considered when plans are being developed for Inis Oírr's sustainable energy transition.

Wariness and Weariness in Island Communities

Key components within this theme include how participants perceived the public consultation process and how they viewed the flow of their knowledge into the policy sphere. Participants' narratives revealed the extent to which they perceived they were ostracised and misunderstood by remote governance. Haraway (1988) spoke of the dangers of remote governance and the common mistake of *"romanticising the less powerful while claiming to see from their positions".* This was one issue that was repeated throughout the participants' discussions with Sandra (individual interview) describing how local and governmental concepts of energy solutions for the island can often be extremely divergent saying:

"I think they would be very different. The Government might have an idea of an overall plan that might have no bearing on island life. We are an island we are a small community….. So I think the local input is important."

This also led to concern among some with one participant describing her fears about the government making decisions on their quality of life without prior consultation. Orla (focus group 2) discussed her distress at a recent government proposal explaining:

"Well the decision ….. will move everything backwards and that is why we are fighting it so much……. And people will leave the island ….people won't move out here."

While most participants discussed their improved quality of life, when asked about the public consultation process in Ireland, all participants stated that they were on the fringe of the process and that it was not appropriate to their situation in its current from. Others chronicled their previous interactions with the process depicting irregularities and misrepresentations within the process in the past. While at present there is a recommended framework for public consultation in Ireland, currently it does not consult effectively with, or meet the needs of, peripheral or isolated communities. This situation echoes Nygren's (1999) description of the domination and hybridisation of local knowledge by decision makers. Selina (individual interview) detailed preceding experiences of public consultation in Inis Oírr saying:

"I don't care how many masters or PhDs or whatever….. You've gotta live here to understand."

Many participants perceived the public consultation process as one which didn't reach their small pocket of the world and was not appropriate to their situation. As a result, participants felt that the mainland governance system didn't care what they, as a community, had to say, fostering mistrust of the external governance system. One participant commented:

"They don't consult us; they don't really consult us, at all. Was there a meeting…? Well, there probably was, but those meetings are just about dividing the money out or whatever."(Alice, focus group 5)

The public consultation process in Ireland and the UK is based on the Information Deficit Model (Catney et al., 2013, Burgess et al., 1998) and is structured in the form of a feedback loop. Nightingale (2016) addresses the problem of the multiple epistemologies that exist in the planning process and describes how the crude nature of feedback loops is unable to deal with the subtleties inherent in the interaction between local and expert knowledges. Nightingale reaffirms the point that all points of view are valid but that triangulating equally between them is the most difficult parts of the process. Ultimately, during the process of triangulation, the expert views gain prominence and the local knowledge is blurred and no longer authentic knowledge (Nygren, 1999). Participants were keenly aware of how their feedback was not accurate when it reached those in power with one participant stating:

"We have these nice little meetings where you can all say what you want and then we go off and find reasons to do something else anyway. I would be quite cynical about them, honestly." (Aoife, individual interview)

Trust is a multi-faceted entity (Misztal, 2013) and debates over its importance in policy implementation and collaborative projects are becoming ever more popular (Büscher and Sumpf, 2015, Walker et al., 2010, Misztal, 2013). Misztal (2013) argues that there has been an *"emergence of a widespread consciousness that bases for social cooperation, solidarity and consensus have been eroded and that there is a need to search for new alternatives".* Furthermore, trust must be part of any "package" to develop a community energy project to facilitate their success (Walker et al., 2010). Participants perceived a lack of honesty in the public consultation process in Ireland and this fostered distrust of the external governance system. This was evident in their narratives with one participant recounting his experience of the public consultation process as:

"So, you know, when people are giving information, it depends on where they are coming from and ……. they give information that is relevant to that……. So that is not good enough, you know, to leave the homework to the community………. information needs to be precise and truthful." (Muireann, individual interview)

The localised governance system in Inis Oírr acquired the existing trust of the community over generations through social interactions. As a result, the co-operative has successfully fostered goodwill towards renewable energy technologies in the community. Consequently, a more participative community exists and 25% of the community were eager to participate in a study on community energy perceptions and needs. Participants were eager for the information from the study to be included in their own community renewable energy project. The trust and community collaboration, the co-operative created, better enables them to implement proposed community renewable energy proposals than external governance organisations. This is as a result of the formation interpersonal relationships within the community. This level of interpersonal interaction is fundamental to fostering trust in small peripheral communities like Inis Oírr. According to Lange and Gouldson (2010) trust is something that *"informs personal relationships and can infuse social structures"*. As a result, trust must have an interpersonal dimension not inherent when there is remote governance. However trust in Inis Oírr's co-operative did not automatically mean that all members of the community were willing to get involved in the study as trust does not always mean participation, but sometimes can only mean passive tolerance (Büscher and Sumpf, 2015).

CONCLUDING DISCUSSION

Situated knowledge is a rich and varied field of thought which explores essential theories within the field of place-based knowledge. This paper does not have scope to delve into these philosophical beliefs themselves, but has adopted concepts from situated knowledge theory to examine how understandings and perceptions of knowledge are place-based. Debates around situating the production of geographical knowledges has been a fundamental consideration of many discourses of feminist research methodologies for some decades, and have recently begun to be recognised as critically important within the field of environmental policy (Nygren, 1999, Nightingale, 2015). This paper explores the contribution that situated knowledge and community knowledge approaches make to debates on island energy governance by highlighting the study's key findings. This paper continues to reflect on its methodological limitations, before offering initial suggestions for policy and practice. Findings suggest that, in the place-based context studied, there are several understandings and perceptions of energy governance. The study has found that the relationship between social, cultural and place-based contexts and energy needs and understandings is complex and multi-layered, supporting past findings such as those of Devine-Wright (2009) and Walker et al. (2010) . However, this study identified three further instruments where situated energy knowledges mould perceptions and understanding of energy governance in the case-study community. First, there is the role of the case-study community's periperality in shaping its energy governance structures. Second, there is the geographic and climate based experiences; the unpredictable pattern of daily lives in islands

and household energy adaptations to account for them. The third instrument is previous experiences of external energy governance; including interactions with "experts" and the Irish public consultation process.

This paper has outlined how perceptions and understandings of energy governance must be considered within the background of social, cultural, political and place-based contexts. This is of considerable significance in island communities where these contexts are extremely divergent from mainland community contexts. Royle (1989) describes how islanders tend to be more resilient as their isolation creates a more collaborative environment. Geographical isolation leads to a more co-operative community where problems are shared and dealt with collectively. The description of local knowledge as an internally "uncontested system" (Browder, 1995, Heyd, 1995) was reiterated by the participants in the study. Participants' narratives evidenced this collaborative approach through chronicles of the communities need for local governance systems. Cass and Walker (2009) discuss the two main factors that affect opposition to community renewable energy projects: place attachment and fairness. Devine-Wright (2005) defines place attachment as emotional bonds between people and places that often affected by local developments. He also defines fairness as the perception of both procedural and distributional justice. The central principle that they outline is that fact that a community has the right to be involved in a decision in some way and in the processes of decision making (Renn and Webler, 1995, Cass, 2006). Participants of the study perceived that, thus far, those that were governing the community externally had not given islanders the same consideration as those on mainland Ireland. Nygren (1999) describes the typical format of indigenous consultation as one where local knowledge is "extracted", categorised by experts' standards and then discarded when inconvenient. Furthermore, the "They" that is "the invisible conspiracy of developers" (Haraway, 1988) was repeatedly used with resentment as a term to describe those that remotely governed and were not from the island.

The unpredictable nature of life in Inis Oírr resulted in self-governance becoming a key component of their survival and the community's need to adapt their approaches to energy in their daily lives. As a consequence of this need for adaptive approaches to their daily lives, Inis Oírr, as a community, became responsible as individuals for the organisation of their community and their energy provision. Because of their proactive and informed approach to community issues, many of the participants were keenly aware of the faults within the current consultation process in Ireland. Often, Inis Oírr is a place that is portrayed as an overly romanticised image of something from the Ireland's cultural past (Moran, 2011, Royle, 2002). As a result, "Outsiders" view Inis Oírr as part of a past culture in Ireland where modern advancements are seen as something threatening their unique way of life (O'Leary and Deegan, 2003). However, participants expressed their discomfort with this perception of Inis Oirr and stressed how Inis Oírr community is their home and more than a means of

preserving Irish history. All participants in the study perceived modern, renewable technologies as the most appropriate method of preserving quality life in Inis Oírr, giving islanders' independence from external sources and reducing their energy costs.

The centralised system in the UK produces an energy public that is *"overwhelmingly characterised by deficits: of interest, of knowledge, rationality and environmental and social responsibility"* (Devine-Wright, 2007). However, participants were cognisant of the shortcomings in the Irish consultation process, leaving them wary and disinclined to participate in future consultation processes with external governance systems. This stemmed from their willingness to become involved in previous public consultation processes and their subsequent outcomes. Catney et al. (2013) critique the notion that people are empty vessels waiting to be filled and recognise that local knowledge is also valuable. The current pubic consultation process in Ireland operates on the deficit view of individuals as empty vessels that will act if given information (ibid.). This is certainly not palpable in Inis Oírr as all participants in the study were extremely knowledgeable about their community and able to critically engage with, and examine, previous public consultation processes they had engaged in. Current practices involve an information deficit and information provision approach to energy practices, which does not nurture energy knowledge in all cases (Cass and Walker, 2009). One major drawback of the information-deficit model approach to community engagement is that sufficient information is not given to communities to make informed decisions. Participants in the study described how this led to opposition to infrastructure projects in their community as they were unable to determine the most relevant information to their specific situation (Walker et al., 2010, Devine-Wright, 2009).

It should be noted that participants' narratives are not absolute and are not neutral portrayals of past experiences. They are reconstructions that are embedded in context and multiple interpretations that mature and evolve with each reiteration. While snow-ball sampling supplied a varied mix of participants' in terms of gender, age and energy action levels, this strategy can result in the data being limited in some respects. Moran (2011) argues that environmental understandings and perceptions may be misinterpreted by those that are not members of a community. How and why these barriers to communication are formed is an important area for future study. A final methodological issue is that the snowball sampling method, although highlighting the role of social networks and interpersonal relationships provides an incomplete picture of these networks by accessing those participants most embedded in them. While social contexts are evidently important to those who participated in the study, further research, using more independent sampling within the other island communities is needed to confirm generalisability of these findings. However, reflections for policy in the field of energy governance can be tentatively offered. First, this study confirms the notion that perceptions and understandings of energy are

place-based and socially constructed. This hypothesis could offer opportunities to focus on the social, cultural and political contexts within which communities engage with energy policy. Policy could create opportunities for the in-depth exploration of the social and place-based influences in community energy demand and perceptions. Equally, policy could create a more dynamic community consultation and engagement process that can adapt to the subtleties of community needs. In particular, this study poses the need to consider how situated knowledges can be integrated into the planning and development of community energy processes. These solutions would recognise that individuals' demand and perceptions of energy are shaped by the contexts that they live in. While the application of situated knowledge theory to energy planning is a somewhat emerging area it is one that offers considerable prospects for future research. In particular it offers the opportunity to create more inclusive energy planning environments for marginalised communities through enabling better integration of their knowledge into the planning process. Increased collaboration across disciplines and knowledge epistemologies is needed to enable new discoveries in energy governance that are of the crucial in Ireland's sustainable energy transition.

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