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**In sight and in mind: social implications of  
marine renewable energy**

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PhD Sociology

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# Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference or acknowledgment, the work presented is entirely my own.

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# Abstract

Scotland has significant marine energy resources and is at the forefront of the research and development of wave and tidal marine renewable energy technologies. Much of this research has focussed on the technological challenges of marine renewable energy (MRE) development, and accordingly there has been an important gap in understanding the social implications of the technology. This PhD contributes important new knowledge to the emerging field of the sociology of marine renewable energy.

Previous studies have explored the many and varied grounds on which publics might come to support or oppose other low-carbon energy technologies, though to date there has been limited research into whether the same range of factors also inform social responses to MRE. This thesis presents new understanding of social responses towards MRE projects and the social impacts MRE may have on communities.

Findings from eighteen months of ethnographic fieldwork, living, working, and coastal skiff rowing, on a Scottish island are presented, along with the results from a series of public dialogue workshops held in six Scottish communities. This innovative twin-track qualitative research approach provides a rich understanding of everyday life and practice in relation to community, environment and energy, and insight into some of the more intangible ways in which MRE projects may affect communities.

The research shows that the strong and unique cultural and historical identity of coastal communities, together with the economic fragility of the areas, influences how MRE, and those promoting it, are perceived. Responses to energy projects depend on the perception of change that will occur as a result of the project and vary significantly both within and between communities.

The data obtained show that MRE projects that are perceived to positively benefit the local area are welcomed, and that project developers and policy makers should focus as much on ameliorating positive benefits to communities as mitigating negative impacts. Planning processes that appropriately understand and negotiate these concerns are therefore required, in order to engage with communities and maximise the potential opportunities that MRE technologies present for marginal rural communities.



# Lay summary

Scotland's seas have large waves and strong tides. These natural energy resources can be harnessed by innovative marine renewable energy technologies to generate electricity. In this research I focus on understanding the social implications of marine renewable energy, looking at both how communities located near to marine renewable energy projects will react to these new technologies being developed and how the technologies will impact these communities.

In order to investigate this I completed two research activities: lengthy independent fieldwork on a Scottish island where marine renewable energy projects have been proposed and workshops with members of six other communities around Scotland organised by the Scottish Government.

My findings suggest that people in Scotland are generally supportive of marine renewable energy projects believing that they could have a positive impact on Scottish communities. However, support for individual projects cannot be guaranteed as there are many reasons why some community members could withhold their support or come to oppose projects.

The results show that whilst marine renewable energy devices are less visually intrusive than wind turbines, they are not necessarily certain to have more public support than wind energy. There have been negative public reactions to many previous wind energy projects and this research finds that all the reasons that influence community responses to wind energy projects seemingly also inform how people might react to marine renewable energy.

People's reactions to marine renewable energy projects appear to be based on their perception and understanding of several factors, including: the visual impact the project will have, the scale of the project, the fairness and transparency of the planning process, the trust that they have in decision-makers and developers, the local community context, and the positive community benefits that a project will have.

The research highlights the importance of involving community members in planning processes, listening to their concerns, and utilising their local knowledge. In this way projects can be developed which are appropriate for a community and maximise both positive social responses and social impacts.



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# Glossary

## List of terms found in this thesis that may be uncommon to the reader.

Blether: Scots, verb; to talk in a long-winded way without making much sense. Noun; long-winded talk with no real substance.

Comhairle: Gaelic, noun; council or local authority.

Croft: noun; a small enclosed area of arable land in the Highlands and Islands of Scotland.

Cruach: Gaelic, noun; peat stack located next to a house.

Fank: Gaelic, noun; sheep pen, found in each crofting township and shared amongst crofting shareholders and used for communal sheep dipping.

Machair: Gaelic, noun: fertile sandy soil found near the coast which is good for growing crops.

MRE: Marine renewable energy, term to describe wave and tidal energy.

ORE: Offshore renewable energy, term to describe offshore wind, wave and tidal energy.

OWC: Oscillating water column, a type of wave energy device that works within a breakwater or seawall.

Sgoth: Gaelic, noun; skiff, particularly a traditional sailing boat common to the Hebrides.

Shieling: noun; seasonal dwelling and pasture used for grazing animals in the summer.

Tarasgeir: Gaelic, noun; peat iron, tool for cutting peat slabs from the peat bank.

Thrawn: Scots, adjective; perverse or stubborn.

Urras: Gaelic, noun; a trust for administration of an organisation or business.



## Chapter 1 Introduction

Marine renewable energy, electricity harnessed from the power of waves and tides, is being pursued in the UK, and many regions around the world, as a secure, renewable, low-carbon energy supply. This is in response to the need to reduce carbon dioxide (CO<sub>2</sub>) emissions in order to mitigate climate change, and the geopolitical desire to increase security of energy supplies by producing more energy domestically.

The UK and Scottish Governments have both set a target to reduce CO<sub>2</sub> emissions by 80% from 1990 levels by 2050 (CCC, 2008; The Scottish Government, 2011). Electricity generation accounts for about one-third of the UK's CO<sub>2</sub> emissions, therefore increasing the supply of electricity generated from low-carbon sources such as renewables is important to meeting this target. The UK is aiming for 30% of electricity to come from renewables by 2020, while in Scotland the ambition is for 100%. It is widely recognised that a portfolio of technologies, including low-carbon generation technologies and energy efficiency technologies, will be required in order to meet these targets (CCC, 2008).

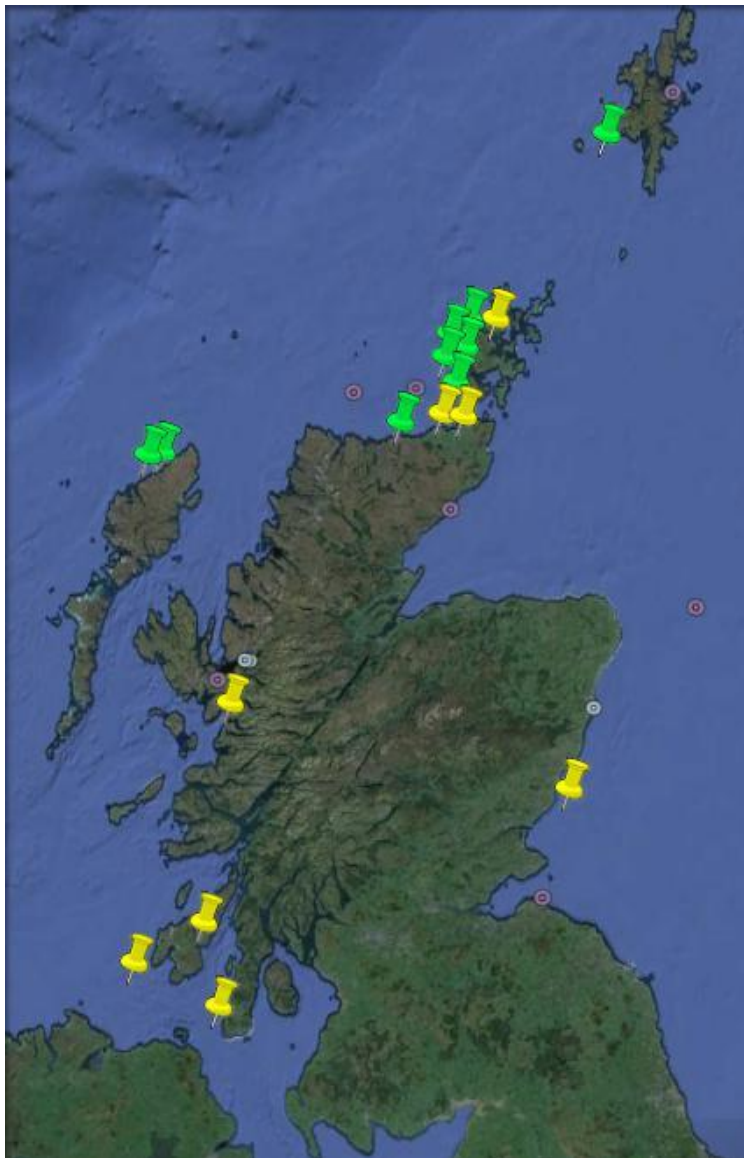
At present, the majority of renewable energy generation in the UK is from wind energy, and the sector is far more mature than the marine energy sector which is still in a developmental phase. There has been extensive development and testing of marine renewable technology in the UK, and particularly Scotland, for the past several years and several plans for commercial developments have been proposed around the coast. It is expected that as marine energy technologies approach commercial deployment, they will increasingly contribute to the energy portfolio in the future (DECC, 2013).

### 1.1 Marine renewable energy in Scotland

As an emerging industry and subject of academic interest, the terminology used to describe energy harnessed in the marine environment has not been settled, and the terms 'marine renewable energy', 'offshore renewable energy', and 'ocean energy' are all in use. In this thesis I am focused on wave and tidal energy which I collectively refer to as marine renewable energy (MRE). In addition, I consider offshore wind energy, which together with wave and tidal energy I term offshore renewable energy (ORE).

In this research I focus on MRE and ORE within Scotland. Scotland has the most substantial MRE resources in the UK and is leading in the development of MRE technologies with many

In sight and in mind: social implications of marine renewable energy technology companies and research centres based in the country. For instance, the European Marine Energy Centre (EMEC) has been established in the Orkney Islands since 2003. The facility allows technology developers to test their prototype devices in the marine environment before they are commercially deployed. The first wave and tidal power sent to the National Grid was done so from the EMEC test facilities. In 2014, the FloWave Ocean Energy Research Facility was opened at the University of Edinburgh. This circular tank is a world-leading MRE test facility. The majority of the planned MRE projects in the UK are located in Scotland, with nine wave projects and eight tidal projects having received planning consent (Figure 1-1).



**Figure 1-1: Map showing consented marine renewable energy projects in Scotland. Yellow pins = tidal projects, green pins = wave projects (Source: Adapted from ORJIP Ocean Energy, n.d.)**

In sight and in mind: social implications of marine renewable energy

Scotland has been at the vanguard of MRE technology since the 1970s when Stephen Salter invented his eponymous 'duck' wave energy device (Salter, 2016). Subsequently, Scottish companies and inventors have designed and tested a range of different devices to turn marine energy into electrical energy. The Pelamis and the Oyster were two of the most notable wave devices that were developed in Scotland by Scottish companies.

The Pelamis is a long metal 'snake' which floats on the water and generates electricity as the five linked sections move up and down on the waves (Figure 1-2). Pelamis operates in water depths greater than 50m and is typically installed between 2 and 10km from the coast. The Oyster device is a buoyant hinged flap which pitches backwards and forwards in near shore waves (Figure 1-3 and Figure 1-4). The Oyster is attached to the seabed at depths of between 10 and 15 metres, around half a kilometre from the shore. Another way to harness energy from waves, which has been proposed for deployment in Scotland, is through an oscillating water column (OWC) which sits within a breakwater or seawall. An OWC generates electricity as the waves contact the wall and displace air located within it.

The power of the tides can be converted to electrical energy either through tidal barrages or tidal stream turbines. Tidal stream technologies are being mainly considered in Scotland, and the world's largest tidal stream array was recently completed in the Pentland Firth (Hannan, 2018). Tidal stream turbines work similarly to wind turbines, except that the turbine is located underwater and is rotated by the tidal current rather than by the wind. The energy is then turned to electricity and sent ashore via cables on the seabed.



**Figure 1-2: "Pelamis P2 wave energy device" by Scottish Government is licensed by CC BY-NC 2.0**



**Figure 1-3: "Aquamarine Power's Oyster 800 wave energy converter in operation at the European Marine Energy Centre (EMEC) in Orkney, Scotland" (Source: O'Boyle et al., 2015)**



**Figure 1-4: "Aquamarine Power's first full scale Oyster 1 wave energy device" by Scottish Government is licensed by CC BY-NC 2.0**

The Scottish Government has actively promoted the MRE industry with the aim of Scotland becoming the “Saudi Arabia of renewable marine energy” (Murray, 2008). In 2008 the Scottish Government launched the Saltire Prize, a £10 million award to the MRE technology that achieved the greatest volume of electrical output over a continuous two year period, using only the power of the sea (Bennett, 2018). In 2011, then First Minister Alec Salmond predicted that MRE devices would be commercially viable by 2015 (Carrell, 2011).

The progress of MRE development in Scotland has however not been as rapid as initial policy expectations (Jeffrey et al., 2013; Carcas et al., 2017). The Saltire Prize remains unclaimed (Bennett, 2018) and several of the companies that had been vying for it are no longer in business (BBC, 2014; BBC, 2015). This suggests that a slower, more iterative approach to technology development may be required rather than a rush to commercialisation (MacGillivray et al., 2014).

The technological development of MRE (e.g. MacGillivray et al., 2014), and the possible environmental and ecological impacts (e.g. Bell & Side, 2010) of the technology have been well studied and remain the key research of the MRE industry as it continues to seek the commercialisation of devices (ORJIP Ocean Energy, 2017). Equally important, and less well studied, are the social implications of MRE (Uihlein & Magagna, 2016). There have been limited studies into both social responses to MRE and the social impacts of MRE projects. Where studies have considered social implications of MRE these have mainly focussed on economic impacts (e.g. Allan et al., 2014; Dalton et al., 2015; Dalton et al., 2016) and the effects on other marine space users and business such as fishers (e.g. Todd, 2012; Alexander, Potts, et al., 2013; Alexander, Wilding, et al., 2013; Reilly et al., 2015; Reilly et al., 2016).

A limited number of studies have considered social responses to MRE (McLachlan, 2009b; Bailey et al., 2011; Devine-Wright, 2011a; Devine-Wright, 2011b; McLachlan, 2011; Heras-Saizarbitoria et al., 2013; de Groot & Bailey, 2016) which is the focus of this thesis and which I will expand on next.

## 1.2 Out of sight, out of mind? Social responses to marine renewable energy

To date, there has been limited research into social responses towards MRE projects as there are very few projects in operation. There is, however, a wide body of research into other low-carbon energy developments such as wind and CO<sub>2</sub> capture and storage (CCS) from which parallels can be drawn to MRE. Research into wind energy (e.g. Warren et al., 2005) and CCS projects (e.g. Feenstra et al., 2010) has shown that these technologies have experienced public opposition. The lesson from these projects is that however technically viable they may be, energy developments will not be built if there is effective public opposition, and that this is the key reason why a project may be rejected (Toke, 2005).

Whilst onshore energy projects have experienced opposition, there is a common conception that moving energy projects offshore solves the problems that have been encountered onshore, particularly with regard to public opposition (McLachlan, 2010; O’Keeffe & Haggett, 2012). Indeed, this view was conveyed by the director of a now defunct Scottish wave energy company, who claimed during a public lecture at the University of Edinburgh in 2014 that, in contrast to wind energy, public opposition to MRE would not be a problem as the technology is “out of sight and out of mind”.

Preliminary research has shown, however, that this is not always the case, and that objections to offshore wind projects have been just as vocal and vociferous as to those onshore (Haggett, 2008). The small body of literature on MRE projects suggests that a range of social responses, including oppositional ones, are just as likely towards wave and tidal energy (McLachlan, 2009b; Devine-Wright, 2011b; Heras-Saizarbitoria et al., 2013).

Research exploring responses to three MRE projects that have been deployed illustrates this point. Devine-Wright (2011a) reported on the responses of local residents to the world’s first grid-connected tidal device, the SeaGen tidal energy converter in Strangford Lough, Northern Ireland (Figure 1-5 and Figure 1-6). Although this project was predominantly viewed positively, there were also negative feelings expressed by residents with concerns that ecology could be affected, that there were no direct local economic benefits, and that the planning and consultation process lacked fairness (Devine-Wright, 2011a).



*Figure 1-5: "Tidal energy generator, Strangford Lough" by Kenneth Allen is licensed under cc-by-sa/2.0*



*Figure 1-6: "'SeaGen' tidal energy generator, Strangford Lough" by Rossographer is licensed under cc-by-sa/2.0*



**Figure 1-7: "OWC power plant at Mutriku"** (Source: Garrido et al., 2015)

Similarly, research (Heras-Saizarbitoria et al., 2013) on Europe's first commercial wave energy device, deployed in Mutriku, Spain (Figure 1-7), found a range of attitudes towards the project among local stakeholders and contended that positive social attitudes towards wave energy projects cannot be taken for granted. Furthermore, research into responses to the Cornish Wave Hub, a UK marine energy test centre, suggests that wave energy in general, and the Wave Hub in particular, are not universally viewed positively (McLachlan, 2009b; McLachlan, 2011; Bailey et al., 2011). McLachlan (2009b) concluded that the sense that MRE will be an opposition-free alternative to wind energy is misplaced.

Anecdotal evidence from other proposed MRE projects also reveals that negative opinions can form in the community. The proposed tidal devices in Kyle Rhea in the West Highlands met with objection from local leaders (BBC, 2011; Kerr et al., 2015). There was also local opposition to the Galway Bay Marine and Renewable Energy Test Site when its lease was considered in 2017 (Bradley, 2017).

This evidence suggests that the social implications of MRE devices should not be ignored. Furthermore, despite being located offshore MRE projects will provide intrusion into host communities (Johnson et al., 2012). Therefore, from the industry and project developers' point of view, consideration of the social implications is important for ensuring that social

In sight and in mind: social implications of marine renewable energy opposition does not lead to the cancellation of projects. Indeed, given the limited locations around the UK coast that are suitable for MRE, particularly tidal energy, social opposition in these locations could be highly problematic for the industry (Kerr et al., 2018).

From the host communities' point of view, the social implications of MRE should be considered to ensure that their views towards projects are heard and respected, and that the social impacts of projects, both positive and negative, are evaluated. This thesis is therefore focussed on understanding the relationship between host communities and MRE technology and the subsequent implications for policy.

There is a significant knowledge and research gap on publics' responses to MRE, and what factors inform and shape these responses, and a critical requirement to develop expertise on the social aspects of MRE to match the corresponding technological expertise. This research addresses this gap by exploring the responses of potential host communities to MRE developments in Scotland. It determines what factors inform these responses and ascertains how public engagement and project planning can be best conducted in order to lead to optimal outcomes. In so doing it generates a new understanding about how planning and public engagement for MRE devices might best be conducted.

Wave and tidal technologies present a new opportunity for policy makers, planners, developers, and communities to learn the lessons from the (at times problematic and poor) implementation of wind energy, and develop with people and communities, rather than against them; which is precisely the issue on which this thesis is focussed.

This research thus investigates whether, and in what circumstances, social opposition to MRE will occur. Moreover, it explores what factors influence social responses to MRE, and what impacts MRE may have on host communities. An overview of the research programme is presented in the next section.

### **1.3 Research questions and approach**

This thesis asserts that there is a requirement to develop a sociology of marine renewable energy, and at the same time makes a significant contribution to this novel field of study. This sociology of MRE is concerned with demonstrating why the social implications of MRE are an important area of study and understanding the relationships between MRE technologies and the communities that will host these new and emerging technologies.

As outlined earlier in this chapter, to date there have been few MRE projects deployed which means that there is limited empirical evidence of the impacts that projects have had on communities and the responses that publics have had towards projects. Therefore, finding out in advance of technology deployment what social responses and social impacts are likely to be, could inform the development of best practice in planning and community engagement and the development of the industry.

In Chapter 3, the literature around social responses to MRE is discussed in detail. The review of this literature identifies several research gaps that need to be addressed in order to better understand the social implications of MRE, and it is these gaps which this thesis is based upon. These gaps will now be summarised before the research questions are outlined in order to provide context for the questions.

The examination of the literature reveals that there is a limited knowledge of publics' responses towards MRE in general, and in potential host communities in particular. Following on from this there is a lack of understanding around how the complex set of factors that have been shown to influence responses towards other low-carbon energy projects will apply to MRE. A range of issues such as visual impacts, the local context and place attachment, the scale of projects, publics' trust in project developers, and public participation in planning processes, have all been shown to inform responses to offshore wind energy (Haggett, 2011). From the existing literature it is not clear to what extent these factors may influence responses to MRE, or whether MRE is indeed out of sight and out of mind.

Another important factor in determining social responses to low-carbon energy projects is individuals' interpretation of the change that will result from project development (Devine-Wright, 2009). At present, there is no comprehensive understanding of the relationship that host communities have with their environment (both marine and terrestrial) or the sense of

In sight and in mind: social implications of marine renewable energy 'place' that people in these communities have. Without understanding the local context including levels of place attachment, notions of resource ownership and ideas about sustainability and energy provision in remote communities, it is hard to determine how people may interpret the changes in their locales that result from MRE projects.

In terms of the social impacts of MRE, there has to date been no consideration in any of the literature of what the possible social impacts on host communities will be, and there is a recognition in both the MRE industry and policy sectors that more research is needed (PSEG, 2014; ORJIP Ocean Energy, 2017). This knowledge gap is reflective of an under appreciation of the social impacts of infrastructure projects, including energy, in general (Burdge, 2002). Whilst there are legal requirements on developers to conduct environmental impact assessments (EIA) as part of the planning process (Cashmore, 2004), there is not the same obligation to conduct a social impact assessment (SIA) (Slootweg et al., 2001). In order to address this research gap there is a need to identify the range of positive and negative social impacts that may result from MRE projects and understand how these impacts may be felt in host communities.

Following from the knowledge gaps on social responses and social impacts, there is a further requirement to better understand how and why community engagement and public participation processes should be conducted for MRE. Ineffective engagement has been shown to contribute to negative social responses towards wind energy (Gross, 2007), while effective engagement is a requirement for determining social impacts (Voyer et al., 2012).

In order to address this issue and fill the gaps in existing knowledge, in this thesis I have explored three broad research questions relating to social responses, planning processes, and social impacts:

- What social responses do host communities have towards proposed MRE developments? Can MRE be considered to be 'out of sight and out of mind'? If not, what factors do inform social responses to MRE?
- How do planning and engagement processes inform social responses to MRE? How should these processes be organised for MRE?
- What social impacts will MRE have on host communities? How should social impacts of MRE projects be assessed?

These questions are investigated through a twin-track research approach. Qualitative data have been collected from a series of public dialogue workshops held in six Scottish communities, and from extended ethnographic fieldwork in a potential MRE host community on a Hebridean island. The Dialogue workshops engaged invited members of the public in discussion about their responses to three ORE scenarios and what social impacts these scenarios might have on the host community. The Island fieldwork established an in-depth understanding of the community to explore the social responses and social impacts likely to result from MRE projects.

Together, these two research components explore both the breadth and depth of social responses and social impacts related to MRE. Recognising that social responses are socially constructed - that they depend on the language, words and discourses used in each community to articulate them - the research has taken an inductive approach and developed recommendations out of the data gathered from the workshop participants and Hebridean islanders.

The findings from these two research components reveal that a range of social responses to MRE should be expected. Responses towards MRE are largely positive, though not universally so. Responses depend on a range of factors relating to both the local community context and the specific project context. Support for MRE appears to be qualified by the interpretation of local impacts, with greater support when it is interpreted that MRE leads to positive social impacts, and support rescinded in the perceived absence of positive impacts. This has significant policy implications, as in order to better realise the positive impacts of MRE it is necessary to engage communities, rather than bypass them, and give them a stake in MRE projects.

To this end, MRE cannot be considered to be out of sight and out of mind for host communities. Instead, it might be helpful to consider MRE as 'in sight and in mind' and to focus on engaging communities with MRE planning and deriving positive social impact from MRE projects, rather than seeking to bypass communities. For its part, this thesis calls for a sociology of MRE that puts the social implications of MRE in sight and in mind for academic researchers, policy-makers, and industry.

In this chapter I have introduced the rationale for this research and given a general overview of the research programme that forms this thesis. In Chapter 2, I provide more

In sight and in mind: social implications of marine renewable energy detail on the context of MRE development and social impact assessment in Scotland. This is followed in Chapter 3 by a review of the academic literature pertaining to the study of social responses to MRE. In Chapter 4, I introduce the twin-track methodology undertaken in this study and the rationale for it. I then briefly preface the energy context in the Island case study location in Chapter 5, before introducing the findings from the Island fieldwork in Chapter 6. In Chapter 7 I introduce the Dialogue workshop findings. These two sets of findings are further discussed in Chapter 8, with final conclusions made in Chapter 9.



## Chapter 2 **Context**

There are a number of policy areas which affect the development of MRE in Scotland. Similarly, the potential host communities for MRE projects are affected by a range of local and national planning and policy areas. Many policy areas therefore inform the real-world context in which this research is situated. In this chapter I introduce the policy and social context relevant to the sociology of MRE in Scotland. This context both informs the rationale for this research and the findings that come from it. First, I focus on Scottish Government policies that relate to marine planning and community planning. I then introduce the concept of social impacts and discuss their relevance to MRE.

### **2.1 Marine planning and community localism**

I begin by setting out two key Scottish policy directions which influence the research undertaken in this thesis: marine planning and community localism. I first outline how the development of marine planning policy in Scotland relates to the sociology of MRE, before then looking at how the Scottish island local authorities are looking for greater decision-making power in respect of their marine resources, and how the Scottish Government is seeking to give more decision-making power to local communities through land reform and community empowerment.

#### **2.1.1 Marine planning in Scotland**

“Ask not what your marine planner can do for you – ask what you can do for your marine planner.” Scottish Government marine planner speaking at Sea Scotland Conference 2016

I begin by considering the Scottish marine planning context. Scotland’s seas are managed separately to the terrestrial environment and understanding how this system works is important for considering the social implications of MRE.

MRE developers are required to work with both the Crown Estate and Marine Scotland who between them manage Scotland’s seas. The seabed around the UK, and half of the foreshore, is managed by the Crown Estate on behalf of the Crown with any company wishing to develop MRE projects needing to get a lease for the area of seabed they wish to use from the Crown Estate. The Scottish marine environment is under the regulatory control of Marine Scotland who manage Scotland’s seas for the Scottish Government. Statutory consent to develop an MRE project is given by Marine Scotland.

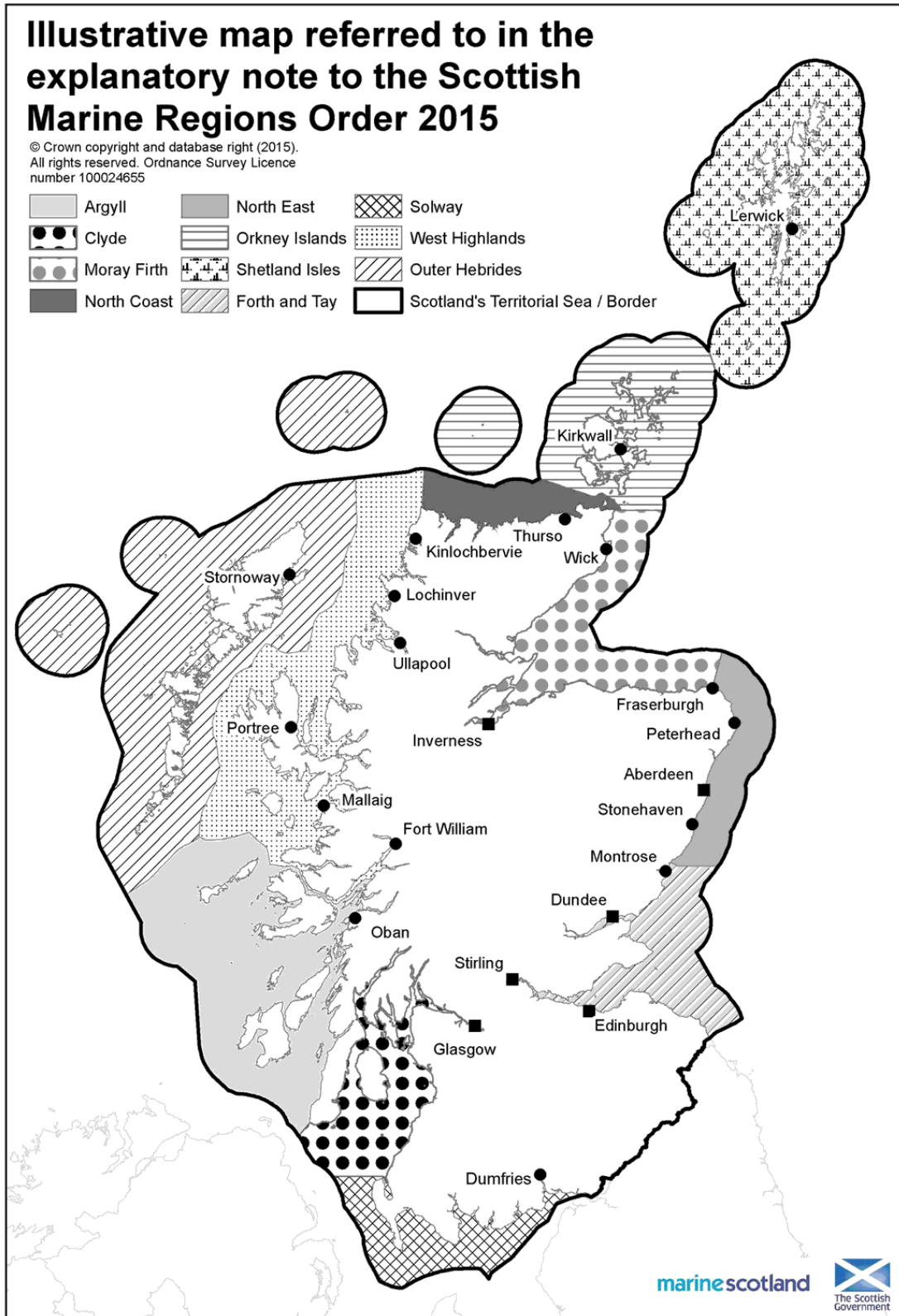
Much like the MRE industry, the marine planning sector is a nascent sector compared to the more established terrestrial planning sector (Jay, 2010). This means that the rules and regulations, and the epistemology and ontology, of marine planning are under development and evolving. Furthermore, as illustrated by the quote at the beginning of this subsection, marine planners recognise the limits to their expertise and experience in this new sector and are actively looking for academics and other civil society organisations to contribute to live policy development, and this is exactly what I set out to do with this research.

Following the Marine (Scotland) Act 2010, a National Marine Plan (Marine Scotland, 2015) has been developed to set strategic priorities for the sustainable management of the marine environment. Underneath the national marine plan, eleven Scottish Marine Regions (Figure 2-1) have been created with Marine Planning Partnerships to be set up in each area to create regional marine plans and promote local decision-making within each area.

Further devolution of marine planning is due to occur following the devolution of the Crown Estate in Scotland under the Scotland Act 2016. An independent Crown Estate Scotland is now responsible for Scotland's coastal and marine assets. In 2018, a new Scottish Crown Estate Bill is being enacted to determine how the business is run and potentially further devolve the management of these public assets to local communities.

In terms of MRE, the Crown Estate Scotland (2017) has three strategic objectives: to contribute to Scotland's economic, social and environmental wellbeing; grow revenue and enhance capital value of the estate; and, develop local decision-making and success, with a particular emphasis on communities and coastal local authorities. These objectives show a commitment to the three pillars of sustainable development, with added emphasis on both the economy and community participation.

The importance of community participation in marine planning has been recognised within the literature (Ritchie & Ellis, 2010; Gopnik et al., 2012), however many authors contend that despite this focus on community engagement, to date practices have not been as inclusive as they might have been (Flannery & Ó Cinnéide, 2012; Flannery et al., 2016; 2018) and that existing power relations have not been altered (Smith & Jentoft, 2017) in the same way that they have been with land reform (Smith, 2018).



**Figure 2-1: Map of Scottish Marine Regions** (Source: The Scottish Government, 2015)

In sight and in mind: social implications of marine renewable energy

Whilst the benefits of a move towards greater community participation in marine planning have been recognised, MRE planning and decision-making however, seems set to remain at the national level. Unlike wind energy and other terrestrial planning issues where planning decisions are generally taken by the local authority, MRE planning has always been decided on at Holyrood. The Scottish Government has been keen to grow the MRE industry and therefore wanted to control it and keep power away from local authorities which may have opposed nationally strategic projects (Johnson et al., 2013).

MRE planning and licensing is conducted under the marine planning framework with geographic areas of MRE potential identified, and guidance issued on what is acceptable development and what planning processes should be followed. This process is top-down with central government at Holyrood deciding which areas are suitable for MRE.

Whilst there is a clear move for devolving marine planning through Marine Planning Partnerships and the Crown Estate Scotland, MRE continues to be viewed as a nationally significant issue and is currently set to continue being decided on at a national rather than local level. Graziano et al. (2017), however, believe that a transformation in MRE planning is required in order to maximise the positive social impacts that MRE technologies could have in coastal Scottish communities.

Graziano and colleagues argue that in order for MRE to have a greater impact on the sustainable development of Scotland's coastal communities, it should be developed incrementally, and in collaboration with communities, in order to build skills and entrepreneurship in the local area, and not simply as an export commodity to serve other areas. Without local ability to influence MRE planning and secure local benefits it is possible that national objectives could take priority over local needs and wishes. Withholding planning control and decision-making from the local communities who will be affected by MRE developments has the potential to influence social responses, particularly at a time when there is a move towards giving communities more control over local planning in other realms.

Having introduced the Scottish marine planning context, I now further consider the potential for devolving MRE decision-making to local communities.

## 2.1.2 Our Islands, Our Future

“We believe that the people who live and work in Scotland are best placed to make decisions about our future – the essence of self-determination; therefore we support subsidiarity and local decision making.” “Lerwick Declaration”, First Minister, Alex Salmond MSP, 25 July 2013

In the run up to the 2014 Scottish independence referendum the three island councils, the Western Isles, Orkney, and Shetland jointly initiated the ‘Our Islands, Our Future’ campaign. The campaign called for greater devolution of powers to the local authority level within the islands. Specifically, in terms of MRE, it called for local control over the seabed, which is currently held by the Crown Estate, and sought greater control over renewable energy planning to maximise the opportunities that the industry represents to the islands.

In response to ‘Our Islands, Our Future’ the Scottish Government recognised that “local communities across our islands should be primary beneficiaries from income extracted as rental and royalty payments on activity around their shores” (The Scottish Government, 2014: 36) and issued the Lerwick Declaration affirming the principle of subsidiarity for Scotland’s islands. The Government subsequently set out a prospectus for empowering Scotland’s islands based on three underpinning objectives: promoting the voice of island communities, enhancing the wellbeing of island communities, and harnessing island resources (The Scottish Government, 2014). Specifically, in terms of MRE, the Government promised that in an independent Scotland, 100% of the revenues from MRE leases would be returned to local communities (ibid.).

Following from the Lerwick Declaration the Islands (Scotland) Bill was passed in Holyrood in May 2018 and will give the island councils extra powers over activities on and around their coastline. However, as mentioned in 2.1, MRE is being reserved at Holyrood and Graziano et al. (2017) contend that a move away from top-down planning is required to maximise the local opportunities that MRE represents.

In this thesis I am focussed on understanding the linkages between MRE and the objectives to promote island voices, harness island resources, and enhance island wellbeing. As MRE remains outside of local devolution to the islands, it is not clear what role island voices will have in decisions about harnessing islands’ MRE resources, or to what extent MRE can or will enhance island wellbeing.

Having considered policy innovations in regard to marine planning and subsidiarity, I now step back to discuss the wider social context of devolution in the Highlands and Islands.

### 2.1.3 The Highlands and Islands

Scotland's Highlands and Islands have unique cultural and geographical features which as well as making them physically suitable for MRE, mean they have a specific social context which is different from the Lowlands and Central Belt. This context is important for understanding how island voices, the use of island resources, and island wellbeing relate to the sociology of MRE in the region.

The Our Islands, Our Future campaign was not the first call for greater devolution to the Highlands and Islands. Crofters and indigenous Highlanders and Islanders have felt that their voices have not been heard by central government policy-makers since the sixteenth century (Hunter, 1999). Since then, the policies enacted by Scottish and British governments, most notably the Highland Clearances (Richards, 1982), have exploited natural resources for outside gain, and eroded the culture, language and traditions of the Highlands and Islands. Cultural memories of these perceived injustices endure and Kerr et al. (2015) hypothesise that communities that suffered the worst effects of the Clearances will have more negative social responses to MRE.

Today, Gaelic language which was once ubiquitous throughout the Highlands is only spoken in a few areas, mostly on the west coast and in the Hebridean islands (Figure 2-2), and many of the glens which once contained human settlements are now unpopulated (Hunter, 2014). This cultural context is important to understanding social responses to projects in the Highlands and Islands and the positive social impacts that people in these communities hope to gain. This context is discussed further in 3.1.1 and extensively in the research findings where I use poems and songs to illustrate the social construction of ideas.

Similarly, poetry illustrates social context of the Highlands and Islands. In his poem *Language*, the Hebridean writer Donald S. Murray reveals the attachment to Gaelic language and traditional crofting practices, and how their simultaneous decline affects Highlanders' sense of self, and views towards the environment and place today.

***Language*** by Donald S. Murray

Gaelic was sewn into us like grains  
of oats, turnip-seed, split potatoes  
ploughs folded below each earth spring.

It took root among the small talk  
villagers stacked at peat-banks  
or found gleaming in green fields,

Or when the sharp blade of their tongues  
cut through each drop of scandals  
that was the season's harvest in some homes.

Yet now croftland lies fallow.  
Winds keen through rush and nettle.  
Cold showers of thistledown blow

Where potatoes stalked and blossomed  
and the words of English broadcast on the air  
find strange, new seed-beds on our lips.

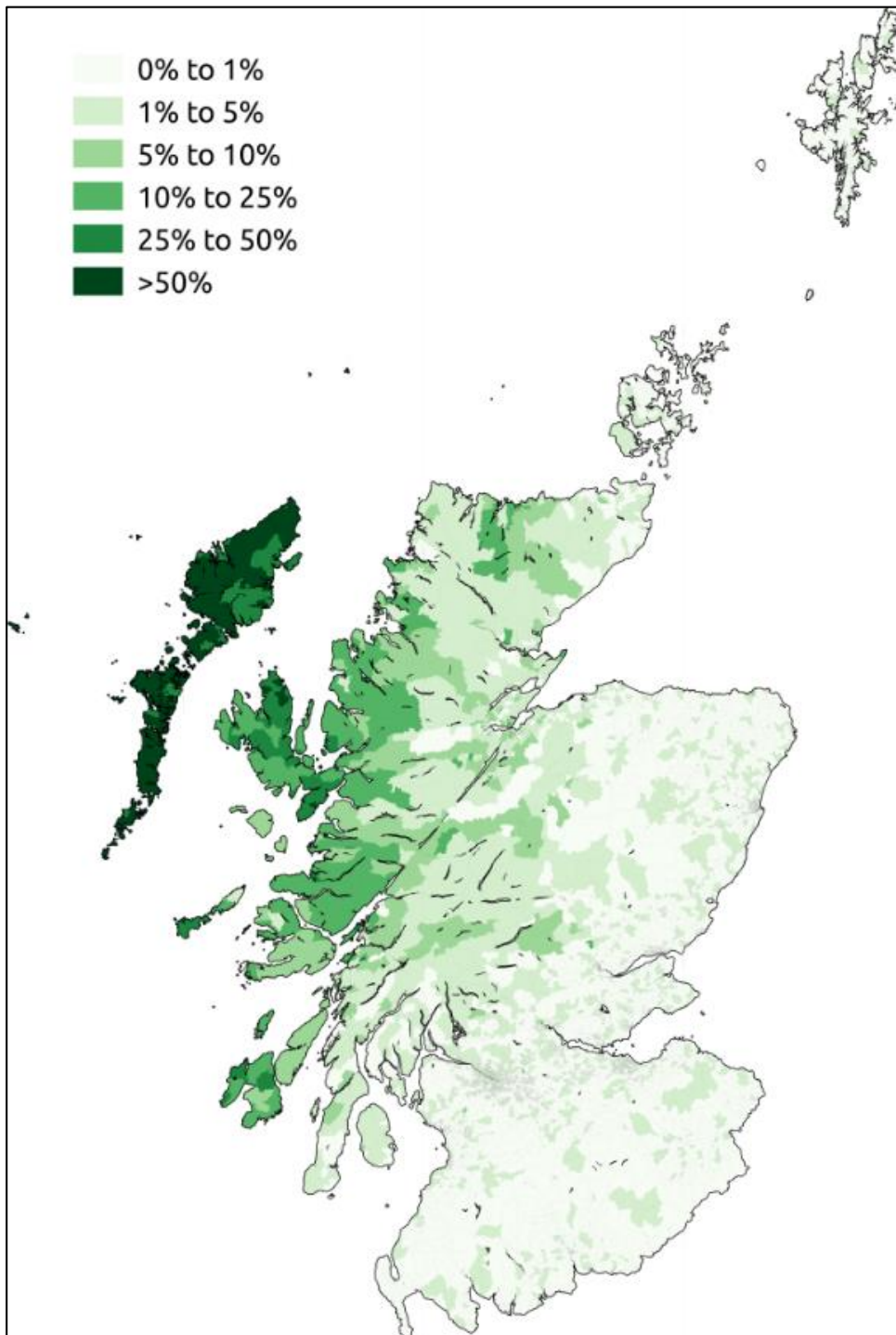
Calls for devolution in the Highlands are not just about contemporary decision-making, but also about correcting the perceived injustices of past policies that have eroded traditional culture, practices and language. As the Scottish Crofting Foundation states, government should “devolve power and decision-making on indigenous issues to the people who maintain the indigenous cultures of the Highlands and Islands” (MacKinnon, 2008: 8).

In his millennial history of the Highlands and Islands, Hunter (1999) contends that throughout history the Highlands and Islands have thrived and been more successful when Highlanders and Islanders have had autonomy over their own areas. Self-determination is thus seen as essential for sustainable development and wellbeing in the Highlands.

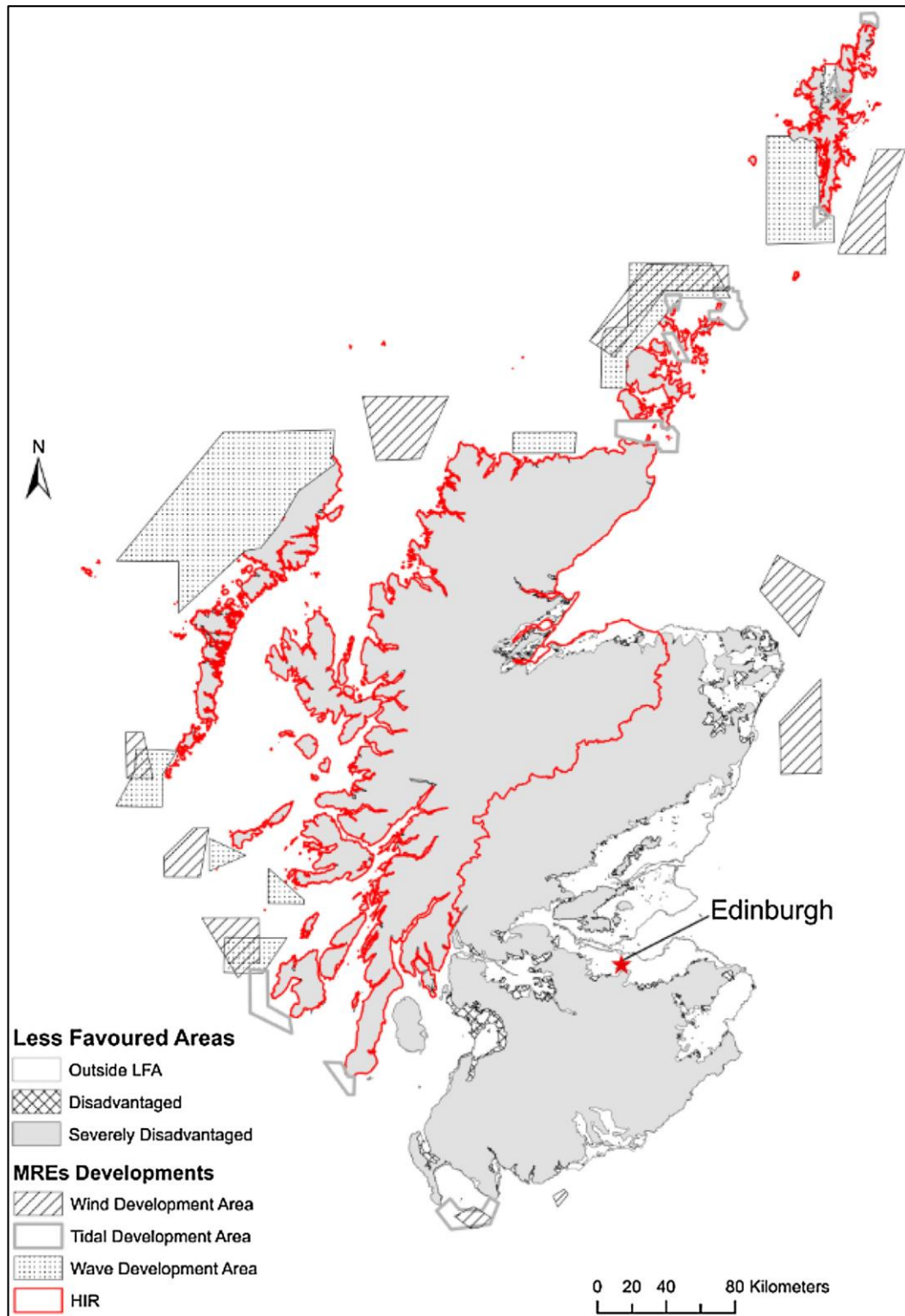
As well as being culturally, linguistically and historically distinct from Lowland Scotland, the Highlands and Islands are also economically disadvantaged with less developed infrastructure and economic opportunities. Graziano et al. (2017) visually highlight how potential ORE energy locations in the Highlands and Islands are largely located in less economically favoured areas (Figure 2-3). MRE thus represents an important opportunity for economic development in the Highlands and Islands.

Having presented the cultural and economic context of the Highlands and Islands that relates to MRE and regional devolution, I next consider other contemporary Scottish

In sight and in mind: social implications of marine renewable energy policies which have recently been enacted to increase local autonomy and self-determination, land reform and community empowerment.



**Figure 2-2: “Geographic distribution of Gaelic speakers in Scotland (2011)” by SkateTier is licensed under cc-by-sa/3.0**



**Figure 2-3: Map of Scotland with Identified Potential Site for MREs, and economically Less Favoured Areas** (Source: Graziano et al., 2017)

## 2.1.4 Land reform

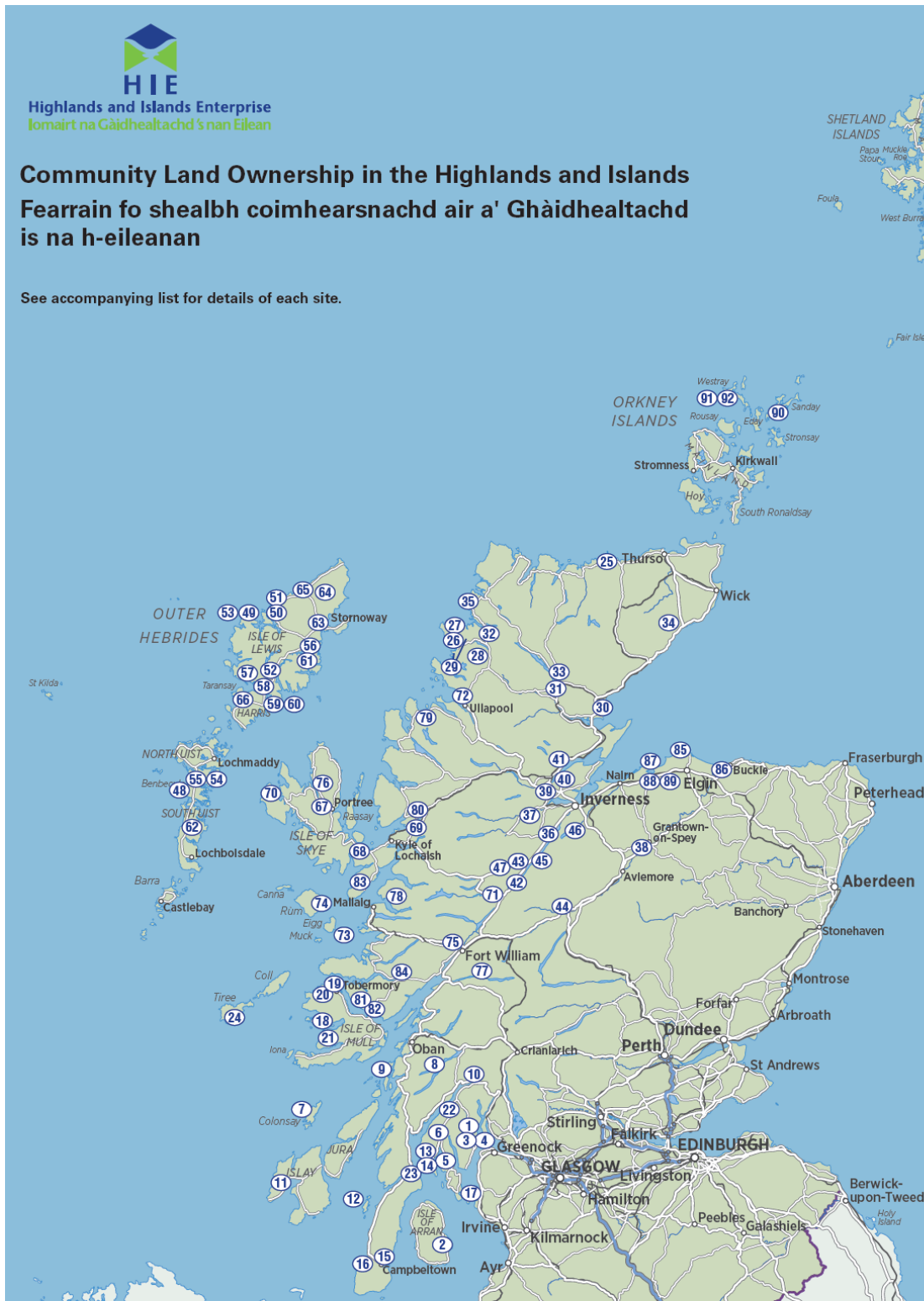
“In an age when communities are becoming increasingly dislocated, there is something inherently right about the people of these islands taking responsibility for the land. It is the most precious resource we have; it is our most tangible legacy from the past; and we have a duty to cherish it for future generations.”

Agnes Rennie Chair of *Urras Oighreachd Ghabhsainn*, quoted in (Hunter, 2012: 156)

As a result of policies over the last five-hundred years, today the majority of land in Scotland is owned by a small number of individuals (Wightman, 1996; 2013). This concentration of land ownership has been widely criticised for its democratic deficit as the people who live on the land have little involvement in how it is managed or opportunity to gain benefit from it (Hunter, 2012). In terms of MRE, Kerr et al. (2015) associate imbalances of land ownership with negative social responses to MRE, as communities which have previously been denied access to their terrestrial resources will disapprove of new enclosure of the marine commons.

A priority of the Scottish Government since its inception in 1999 has been to address the issue of land ownership (Warren & Mckee, 2011). The 2003 Land Reform (Scotland) Act gave rural communities the right to bring privately owned estates into community ownership. Since the introduction of community right to buy, communities across the Highlands and Islands and have taken ownership of their land. There are now 563,000 acres of land owned by ninety-two local communities in Scotland (Community Land Scotland, n.d.), mostly in the Highlands and Islands, and with two-thirds of this land area located in the Outer Hebrides and much more situated around the coast (Figure 2-4).

Community ownership has effected a shift in power away from landowners to communities (Warren & Mckee, 2011), and given local communities the opportunity to guide the development of local resources and ensure that the wealth generated from these resources remains within the community (Mackenzie, 2010; Moore & McKee, 2012; Rennie & Billing, 2015). Further, land reform has seen a shift from a focus on wealth creation and market driven entrepreneurship to a focus on effective local democratic governance and long-term community benefits (Hoffman, 2013) which has made community building and the generation of social capital a primary goal (Bryden & Geisler, 2007).



**Figure 2-4: Map of community-owned land in Scotland** (Source: Highlands and Islands Enterprise, 2017)

Renewable energy is central to ensuring the long-term sustainability of community land ownership with many community-owned estates' business plans predicated on community-owned energy projects (van Veelen, 2017). Community-owned wind, hydro or solar projects ensure a reliable income stream that the community landowners can use to sustainably manage the estate and invest in it. Implicit in taking control of the land, is taking control of renewable energy resources and harnessing them to boost community wellbeing.

Community land ownership further requires external renewable energy project developers wishing to develop projects on community-owned areas of land to directly engage with the community landowners as they make decisions about what can be built on their land.

Land reform thus is an effective strategy for promoting community voices, developing local resources and contributing to community wellbeing. It puts emphasis on community involvement and priorities in a way that marine planning as yet does not. Community land ownership therefore has several implications for MRE.

As stated in 2.1.1, the marine environment remains under the ownership of the Crown, managed through Crown Estate Scotland, and communities cannot take the same control of MRE resources as they can with terrestrial renewable resources. Accordingly, communities have less voice over how MRE resources are developed as they can towards terrestrial renewable resources. MRE projects at sea do, however, require onshore infrastructure and if this is to be placed on community-owned land then communities will have a voice over whether to allow this, and an opportunity to earn rental income from hosting it.

Land reform then is reducing imbalances in land ownership and with it making renewable energy an important part of community development. To this extent it may have a positive impact on social responses to MRE as it reduces the imbalances of control over natural resources that Kerr et al. (2015) associate with negative responses. On the other hand, MRE may be compared negatively to terrestrial renewables over which communities have more control and from which they are able to derive more benefits.

In the next section I continue this theme of community control and decision-making by looking at the community empowerment policy context.

### 2.1.5 Community empowerment

“Community empowerment is a process where people work together to make change happen in their communities by having more power and influence over what matters to them.” (The Scottish Government, 2009: 8)

Alongside land reform another important part of the Scottish Government’s localism agenda is community empowerment to enable greater community participation in local decision-making.

The Community Empowerment (Scotland) Act was passed into law in 2015 and sets out a range of measures designed to empower communities “to do things for themselves, and to make their voices heard in the planning and delivery of services” (The Scottish Government, n.d.). The measures contained within the Act give communities a right to be involved in various types of decision-making at local and national levels, and extend the measures contained in the Land Reform (Scotland) Act to enable more communities to acquire land and other assets.

Like land reform, empowerment is “a continuous process of increasing capacity to influence decision-making, of connecting people with power” (Gilchrist, 2009: 66). For Barr (1995) empowerment is very personal and involves giving people self-belief in their effectiveness to engage in relationships and advocate for their community needs. This is very important in the Highlands and Islands where past policies led to a ‘cultural invasion’ (Freire, 2004) which has resulted in some people viewing their indigenous Gaelic culture and language as inferior (MacKinnon, 2008). Community empowerment is therefore important in order to increase participation in decision-making and make the most of the opportunities that MRE and land reform offer to communities in the Highlands and Islands.

With a push towards community localism and empowerment, and more citizen participation in decision-making in general, it remains to be seen how this will influence social responses to MRE, the one area where localism and devolution of decision-making is not being offered.

## 2.1.6 Summary

In this section I have discussed the Scottish policy contexts around marine planning and localism. The overarching policy context in Scotland is focussed on giving communities more powers not less, and on developing local businesses and industries to provide long-term sustainable benefits to communities. It is within this wider political context that marine planning and MRE planning is taking place.

MRE planning, however, is not currently included within this push for local self-determination. It therefore remains to be seen to what extent MRE projects have the potential to contribute to this agenda by involving communities in planning and realising benefits for communities.

The localism, land reform and community empowerment agendas are about hearing community voices and harnessing community resources for the betterment of community wellbeing. In short, it is about having a positive social impact in Scottish communities.

The extent to which marine planning and MRE can have a positive social impact on coastal communities is not yet clear, but is an area of interest for the Scottish Government (PSEG, 2014). It was the Scottish Government's desire to better understand the social impacts of marine planning decisions, including MRE, which led to my collaboration with them as part of this PhD research.

I now turn to look at social impacts in the context of MRE in Scotland.

## 2.2 Social impacts

“By *social impacts* we mean the consequences to human populations of any public or private actions – that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society.”  
(Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1995: 11)

Like all new infrastructure developments MRE can have an impact on people, particularly those located near to it. Understanding what these impacts might be is important for mitigating negative impacts and ameliorating positive ones on the affected populations. It is also important for understanding how these populations might respond to the developments and determining whether developments are appropriate for communities. As I discuss in this section, measuring these impacts is not straightforward and is not widely undertaken. I start this section by considering what constitutes a social impact, before moving on to discuss how they are measured and why they should be systematically assessed. I conclude it by discussing the theory of social capital as a marker of social impact.

### 2.2.1 Understanding social impact

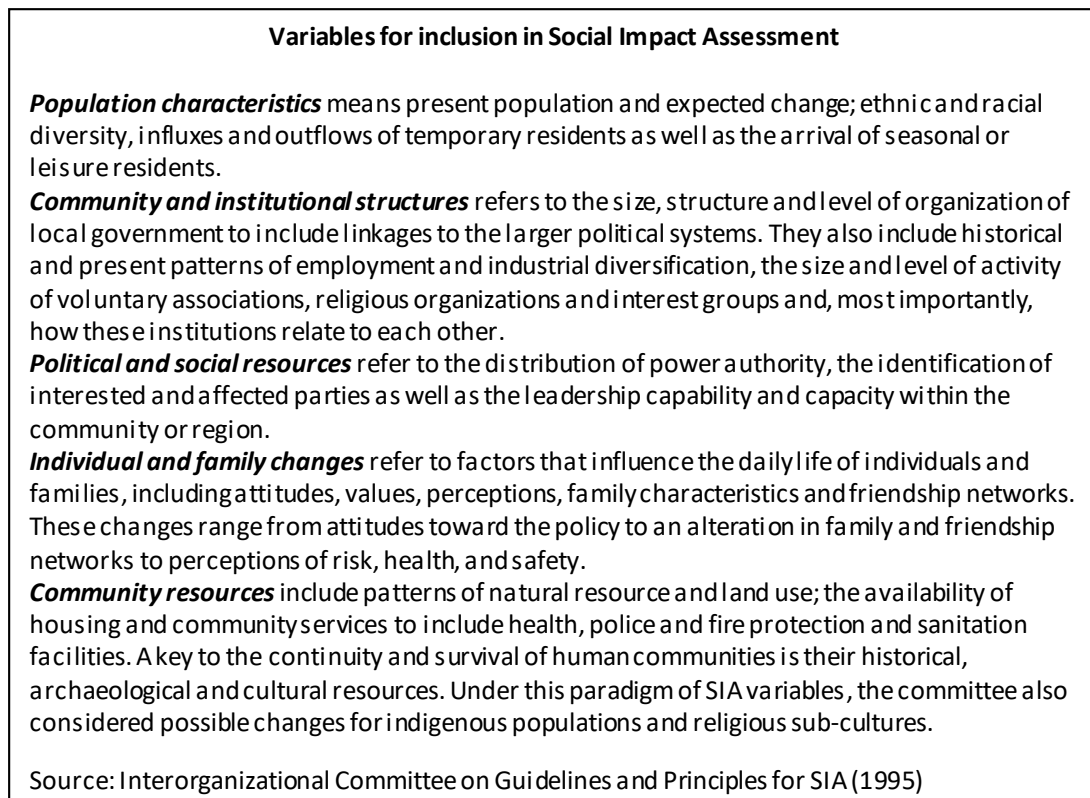
Existing planning regulations typically oblige any project developers to consider the likely biophysical impacts of the proposed project in the form of an Environmental Impact Assessment (EIA) (Cashmore, 2004). This is true with MRE which requires developers to consider how this novel technology will affect the marine environment and to conduct continued monitoring to establish what environmental impact technologies actually have (Wright, 2014). There has also been detailed consideration of how EIA methodologies can be improved for application to the marine environment (Copping et al., 2014; Leeney et al., 2014; Maclean et al., 2014) and the public can be involved in the process (Portman, 2009).

In contrast, the planning process does not incorporate consideration of the social impacts of projects to the same extent, and there is no requirement for ongoing monitoring of social impacts after deployment (Slootweg et al., 2001; Burdge, 2002). Where social impacts are considered in the project development phase they are largely confined to socio-economic issues such as population data, employment opportunities and community infrastructure (Chadwick, 2002; Voyer et al., 2012). This is also the case in regards to marine planning and MRE in Scotland with a recognised need to improve the monitoring of social impacts (Kerr et al., 2014; Bonar et al., 2015).

Some scholarly work has started to consider the social impacts of marine planning (e.g. Vanclay, 2012) with regard to Marine Protection Areas (Voyer et al., 2012; Rees et al., 2013; Voyer et al., 2014) and offshore wind energy (Hattam et al., 2017). However, social impacts are not yet routinely monitored, and the methodologies employed vary and do not assess the full range of social impacts that can be incurred by community members.

The Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (ICGPSIA, 1995) outline the breadth of social impacts that can result from new developments and that should be monitored. The committee organise these impacts according to five variables: population characteristics; community and institutional structures; political and social resources; individual and family changes; and community resources (Figure 2-5).

The breadth of these variables underlines the extent of possible changes resulting from renewable energy projects and the broad range of impacts that communities can potentially feel. Interpretation of the changes occurring across this range of factors can help to determine social responses to a project (Vanclay, 2012; Voyer et al., 2014).



**Figure 2-5: Variables for inclusion in Social Impact Assessment**

In sight and in mind: social implications of marine renewable energy

Standard socio-economic focussed assessments ignore many of these variables, such as the importance of aspects that contribute to community wellbeing such as culture, history, tradition and ‘sense of place’ in the lives of communities (Howell & Haggett, 2014). It is difficult to place an economic value on the sense of worth that individuals place on marine environments or the loss of amenity or disruption to way of life that can result from projects (Voyer et al., 2012). In addition, other important social impacts such as fear and anxiety are more ephemeral and hard to measure as they are highly personal impacts and are felt differently by each individual in a community (Vanclay, 2012). Vanclay (2012) further observes that unlike environmental impacts which do not typically occur until project construction begins, social impacts can manifest as soon as there is rumour of a possible project being taken forward.

There is therefore a need to adapt social impact assessment methodologies to better consider how projects impact on the lives of people in the community or region (Haggett et al., 2014). Haggett et al. (2014) conclude that novel, place-specific, qualitative methods are required in order to capture people’s attachment to place and landscape and their reactions to changes to it. These methods should be employed both ex-ante and ex-post (Baines et al., 2012; Haggett et al., 2014). Tellingly, Vanclay (2012) notes that developing these methods is challenging as it entails a focus “on what counts, not on what can be counted” (p.153).

The Scottish Government recognises this requirement to better evaluate social impacts In order to understand how MRE and other marine activities impact local communities and contribute towards the expressed aim of improving community wellbeing (PSEG, 2014). As marine planning processes develop in Scotland, there is a desire to incorporate the routine assessment of social impacts within these processes and to identify suitable methodologies with which to do so (The Scottish Government, 2015b). It was this desire that led to the public dialogue that I report in Chapter 7 being undertaken. Accordingly understanding the potential social impacts of MRE projects on host communities is at the heart of this thesis.

Having outlined the concept of social impacts, and their relevance to MRE planning, in the next section I consider the practice of measuring them. I look in more detail at Social Impact Assessment as a tool, why it has been underutilised and how it can be better utilised in future.

## 2.2.2 Social Impact Assessment

A more complete evaluation of social impacts could be gained by conducting a Social Impact Assessment (SIA). The concept has existed for forty years; however, it is yet to be routinely adopted as a component of the project planning process (Burdge, 2002).

Lane et al. (2001: 5) define SIA as an “assessment tool designed to facilitate understanding of the costs and benefits of particular resource developments, policies and plans at local and regional levels”. Meanwhile, (Vanclay, 2003: 6) understands SIA as the “processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions”.

While slightly different, what these definitions share is an understanding that SIA involves a wide-ranging analysis of the spectrum of factors that inform ‘social life’ or comprise ‘social value’. This goes beyond looking at social impacts through an economic lens by considering elements such as culture, history, tradition and place that constitute social fabric more widely. An effective SIA will therefore explore the ephemeral, place specific impacts that Vanclay (2012) and Haggett et al. (2014) assert are important to measure.

In a broad assessment of SIA practice, Lane et al. (2001) identify a number of reasons why social impacts can be overlooked. First, poor selection of research methods leads to limited and flawed data collection. Second, research is often poorly guided by relevant social theory. Third, there is generally little attempt to draw upon knowledge gleaned from social assessments of similar projects. As it is not known what impacts occur until after a project has been completed it is important to return and conduct ex-post facto studies (Burdge, 2003) and to use these studies in assessing likely impacts of subsequent projects (Vanclay, 2003). Fourth, is a lack of disciplinary expertise with many impact assessors trained in biophysical sciences rather than social sciences. Fifth, is a limited role for public participation reflecting that many practitioners undervalue and misunderstand the role of consultation. Finally, and most importantly is the politicisation of impact assessment, with ideological commitments often turning social assessments into exercises in policy, planning or project advocacy.

In order to make SIA a more central part of planning processes, Lane et al. (2001) believe that reform must happen on two levels. First, there is a requirement for improved technical

In sight and in mind: social implications of marine renewable energy competence among practitioners and personnel involved in impact assessments. Second, there is a need to reassess the role of social assessment to ensure it does not support ideological developmentalism and moves away from being used to justify a particular policy, plan or project.

SIA can thus be used to democratise policy-making, planning and development, and ensure that all perspectives within a community are fully articulated by giving a voice to the plurality of interests which exist within a population. Essentially, this is a call for collaborative, substantive public participation in order to make use of lay knowledge to ensure that there is fairness in process and outcomes, a topic which I discuss in more detail in 3.2.6.

Buchan (2003) highlights the role of public participation in SIA and the benefits that can accrue if this is done properly. Participation can do much more than just identify impacts, it can share local knowledge and build awareness about the components of a local community. It can help build consensus among those with disparate views and experiences as to what is important and what should be done and can make decision-makers more accountable to the people they serve.

Looking at the role of public participation in Marine Protected Area (MPA) planning in Australia, however, Voyer et al. (2012) observed that consultation is used as an end rather than a means – a substitution for SIA rather than a tool within it. That is, consultation is being undertaken in an attempt to minimise social impacts without considering what they might be or who will feel them. Tellingly, while consultation exercises are being increasingly used in MPA planning, there is a concurrent increase in oppositional activities to MPAs (ibid.). Voyer et al. conclude that public participation is a way of informing SIA and that by separating the two the effectiveness of both is reduced.

Vanclay (2012) and Voyer et al. (2012) all see effective SIA as an integral part of marine policy planning. They perceive SIA as an investment in a project or area, rather than a cost, as numerous benefits can accrue to marine policy-makers and planners through the implementation of SIA. By incorporating local knowledge into initial decision-making, SIA can lead to better siting decisions and reduce the harm that may occur, as well as increase the benefits that flow from a project. It can also identify potential issues from the outset and in so doing reduce the risk of opposition, legal challenges, costly delays and remedial

In sight and in mind: social implications of marine renewable energy actions. The authors claim that SIA can increase the legitimacy of decision-making by giving all stakeholders a voice in the process. Oppositional activity can result from a lack of trust in the process and the people co-ordinating the process, and a well conducted transparent SIA can help to build trust and is more likely to get all sides to accept the outcome.

The impacts of projects can be positive as well as negative and projects can therefore have a significant impact on social development, particularly in marginal communities (Esteves & Vanclay, 2009). Of particular relevance to MRE projects in marginal Highland communities, Vanclay (2003) argues that SIA is about facilitating positive social development outcomes rather than mitigating negative outcomes, asserting that “assisting communities and other stakeholders to identify development goals and ensuring that positive outcomes are maximised, can be more important than minimising harm from negative impacts” (p 6).

By engaging with communities early in the project development process and getting community input and local knowledge it should be possible to develop projects to maximise both community benefits and community support. By delaying engagement there is increased possibility that people will interpret impacts negatively and develop oppositional responses to the project.

In this section, I have shown that there is a recognised approach to assessing the full range of social impacts and the challenges of this underutilised SIA process. I have further discussed the potential benefits that the literature on SIA believes can result from engaging the public and building trust and fairness in processes and outcomes. Scholars claim that SIA can increase the legitimacy of decision-making and allow communities and individuals to feel greater ownership of projects. Given that SIAs are rarely conducted, it is not clear whether this theory will work effectively in practice. However, the evidence presented here suggests SIA could play a role in informing the development of MRE projects.

This discussion of social impact has shown that social impacts can be hard to measure and that they are likely to vary between people and communities due to the different ways in which they are interpreted. For instance the noise and visual impacts of wind turbines are not felt universally and depend on individual perceptions of aural and visual disamenity as much as the scientifically observed physical properties of the sound or sight (Haggett, 2012; Firestone et al., 2015); in Chapter 3.1 I expand on how the theory of social constructionism helps explain these different interpretations.

This discussion has further suggested that undertaking social impact assessments for MRE projects that involve public participation could lead to more positive social responses and identify and institute more positive social impacts. There is therefore a challenge for policy-makers in identifying relevant social impacts and designing SIA methodologies that capture them. With its in-depth focus on MRE host communities, this research explores important social impacts and how they manifest. To this end, the research uses the concept of social capital as a potential framework for measuring social impact in MRE host communities, and I briefly introduce this theory now.

### 2.2.3 Social capital

Social capital is introduced in this thesis for two reasons. First, it is helpful for recognising how a potential host community, such as that in the Island case study contained in this thesis, might engage with MRE planning. Second, the development of social capital could be a positive social impact and therefore is worth understanding from a policy perspective.

The concept of social capital provides a lens through which the strength of community relationships can be measured. Social capital encompasses relations of trust; reciprocity and exchanges; common rules, norms and sanctions; connectedness, networks and groups (Gilchrist, 2009). These aspects create a social structure which gives individuals the “confidence to invest in collective activities, knowing that others will also do so” (Pretty & Ward, 2001: 211). Most simply, social capital can be described as “the glue that holds societies together” (McKenzie et al., 2002: 280). It has also been described as “networks, together with shared norms, values and understanding, which facilitate co-operation within or among groups” (Healy & Cote, 2001: 41).

A key text on the concept of social capital is Robert Putnam’s *Bowling Alone: The collapse and revival of American community*. In it, Putnam (2000: 19) refers to social capital as the “connections among individuals - social networks and the norms of reciprocity and trustworthiness that arise from them”. Putnam’s thesis is that Americans have chosen steadily to withdraw from common public life, and he uses evidence of the decline of league bowling in America to illustrate his point.

Summarising Putnam’s work, Field (2003: 5) states that Putnam “believes that social capital is a Good Thing and its collapse a Bad Thing; he believes that there is one great villain (television) and many minor bad guys (cars, loss of free time, the aging of the generation

In sight and in mind: social implications of marine renewable energy that confronted the big collective challenges of war and depression) and he wants action to restore it to health”.

High levels of social capital are generally considered to be a positive thing for a community. When social capital is high it would be expected that the community would have the confidence, motivation and capacity to work together to solve problems, and undertake programmes that benefit the area. As individuals are more likely to feel as though they are part of the community, and that they are able to make an important contribution to the community by participating in decision-making processes. They are also more likely to welcome new people and ideas and embrace change.

If social capital is low, it will likely be harder for local community development projects to develop and prosper. This will often be the case in communities where communication is poor, and there exists a lack of facilities to meet and interact with others such as community centres, or where the human, economic and physical infrastructures are available but are underutilised.

Gilchrist (2009) outlines the desirability of a ‘well-connected community’ where social capital is strong, community members have strong bonds with each other, and are empowered and able to build bridges and make links with others in order to further opportunities and wellbeing within the community. Without social capital and vibrant neighbourhood and community networks, it is therefore harder to achieve community development and positive social impacts within a community.

Social capital, however, is not necessarily always positive; high levels of social capital can exist without high levels of empowerment, or with negative connotations. Networks, norms and trust can be exclusive, secretive and unaccountable; close ties can be oppressive and facilitate social stagnation and resistance to change. Strong bonds can lead to: the exclusion of ‘outsiders’ or newcomers; the formation of ‘cliques’; the maintenance of ‘traditional’ ways; the enforcement of group ‘norms’; and be barriers to change (Gilchrist, 2009).

To summarise this subsection, I have introduced the concept of social capital and shown that it can be both a measure of social impact in a community, and a driver of community development and action that leads to further positive social impacts.

## 2.3 Summary

In this chapter I introduced the real-world policy context surrounding MRE development in Scotland. This context includes the marine planning framework and the policy push towards local devolution of decision-making and community empowerment. Notably, however, as a nationally strategic sector, MRE planning is excluded from the local devolution agenda and remains a nationally determined policy area.

I also outlined the cultural and economic context of the Highlands and Islands of Scotland where MRE projects are to be located. This region is generally economically disadvantaged and has suffered from centuries of policies which have eroded local language and traditions and excluded community members from policy processes. MRE represents a new opportunity to develop the region's natural resources to the benefit of the people and communities in the Highlands and Islands.

Finally, I introduced the concept of social impacts and outlined the Scottish Government's desire to develop policies and methods that will determine the social impacts of marine plans and MRE projects, particularly more ephemeral social impacts which are hard to quantify but have a tangible effect on people's wellbeing. The evidence presented suggests that social impact assessment can democratise decision-making by involving community members and lead to both more positive social responses to projects and more positive social impacts for communities. I also introduced social capital as a tool which uses the strength of community relationships to evaluate social impacts.

Following this context, I next discuss in more detail the literature related to the sociology of MRE. I start with a discussion of the theory of social constructionism, before discussing the literature on social responses to MRE and how it applies to my research.



## Chapter 3 Literature review

In this chapter I present a thorough analysis of the literature related to a sociology of MRE to give a detailed picture of the complex factors involved in understanding social impacts and social responses. I first discuss the importance of social constructionism for understanding the depth of social impact and social responses to MRE, before introducing the literature on social responses to MRE that guides this sociological research.

### 3.1 Social constructionism

In chapters 1 and 2, I discussed how publics can have different social responses to MRE and different interpretations of the social impacts that MRE projects may have. These differences in interpretation can be understood by looking at how different publics 'construct' the world. In order to better understand these phenomena, in this thesis I draw on the concept of social constructionism which I now introduce.

Social constructionism is a social psychology theory which asserts that "our knowledge of the world, including our understanding of human beings, is a product of human thought rather than grounded in an observable, external reality" (Burr, 2015: 222). Social constructionism adopts a relativist epistemological position which argues that there is not one 'true' account of phenomena, but that there are many different perspectives on events. Social constructionism therefore challenges the conventional epistemological paradigm that knowledge is based on objective, unbiased observation of the world, and is in opposition to the positivist and empiricist positions that the nature of the world can be revealed by empirical inquiry (Burr, 1995).

An early and influential proponent of the social constructionist approach, Gergen (1973) argues that the world is not ready categorised but is constructed as people talk, write and argue it. Categories such as urban/rural, marine/terrestrial, renewable/non-renewable, are not objective descriptions of the world, but instead human constructions. Accordingly, the way the world is viewed and categorised can vary temporally, geographically, culturally and linguistically. Historical and cultural specificity is thus a feature of social constructionism which asserts that all ways of understanding are historically and culturally relative and that they are specific to the prevailing social and economic conditions at the time (Burr, 1995).

Potter (1996) uses the metaphor of a construction yard to explain how descriptions and accounts construct the world. On a building site, builders can use a variety of materials,

In sight and in mind: social implications of marine renewable energy tools and processes to build a house, and depending on which ones they use they will create different buildings. Similarly, people can use different materials, tools and processes to create accounts of the world. Words and language are people's materials and tools and with them people create accounts of the environment and their relationship to it, with different peoples and languages having different words with which to create their versions of the world and relationships to the environment (Macfarlane, 2015).

Looking further at constructions of the environment, Greider and Garkovich (1994: 1) contend that landscapes "are the symbolic environments created by human acts of conferring meaning to nature and the environment, of giving the environment definition and form from a particular angle of vision and through a special filter of values and beliefs". Each physical environment thus has "the potential to embody multiple landscapes, each of which is grounded in the cultural definitions of those who encounter that place. Every river is more than just one river. Every rock is more than just one rock" (Greider & Garkovich, 1994: 2). Different publics can imbue different meanings on the same physical environment which can lead to different social responses to changes in that environment.

Another important aspect of social constructionism is therefore the role of processes in sustaining knowledge (Burr, 1995). Social constructionism explains that individuals' subjective experiences result from culturally embedded discourses. There are numerous possible social constructions, but certain discourses are sustained whilst others are excluded through social action. The language, norms and customs within any social network or set of social relations therefore come to define how people within each network see the world, rather than objective observations (ibid.).

The philosopher Michel Foucault (1972) contends that the prevalent ways of talking in a society produce discourses which form the 'archaeology of knowledge' through which people understand things in social life such as mental illness (Foucault, 1967) and sexuality (Foucault, 1979). As a result of dominant cultural discourses, "human meanings are no longer understood as world-producing but as being, in their turn, products of the 'nature of things'" (Berger & Luckmann, 1966: 89). This is a reversal of the common sense understanding that experience comes first and then is described through language. Instead, language and discourse come first and then create our experience. They are experienced as concrete things but are only brought into being through language.

Power is thus an important part of social constructionism as those people able to disseminate and sustain discourses have the ability to set the norms and customs from which accepted knowledge or truth stems (Burr, 1995). This is typically scientists, policy-makers, and the media. For instance, climate science and the 'climate problem' are socially constructed phenomena which have been reified by scientists (Demeritt, 2001; 2006; Wynne, 2010), and while most publics agree with the need to mitigate climate change there also exists a strong oppositional discourse (Hobson & Niemeyer, 2012). While the physical measurement of the concentration of carbon dioxide in the atmosphere is undertaken according to agreed scientific principles, the legitimacy of climate science is challenged by sceptics and the uncertainty around scientific climate knowledge is used to deny the anthropogenic causes of climate change (Wynne, 2010; Hampel, 2016).

Climate change is thus socially constructed as it enters public discourse, and the way that it is constructed depends on how scientists and the media talk, write and argue it (Ryghaug & Skjølsvold, 2010; Hulme, 2010; Young & Dugas, 2011). This in turn influences the way that climate change is experienced and responded to (Yearley, 2009; Wynne, 2010).

Acknowledging competing discourses around climate change and renewable energy and recognising who sets dominant discourses is therefore important for studying the social implications of MRE (Walker & Cass, 2007; Walker et al., 2010). At present the need for low-carbon energy is primarily based upon mitigating global climate change, and international climate talks are framed around limiting warming to 2°C in order to avoid dangerous climate change. Yet the rationale for renewable energy could be framed in other ways such as improving energy security or promoting local development.

In summary, the social constructionist approach recognises that both scientific knowledge and social processes are a construction and that there is no such thing as 'true knowledge'. I adopt this relativist approach in my research in order to understand both social impacts and social responses related to MRE. I am not concerned with determining 'true' social impacts or social responses but in understanding how different people construct and perceive these phenomena.

Having discussed the theory of social constructionism I now consider how it applies to this research with respect to first the Highland and Islands, and then the MRE context using examples from the literature around marine planning and renewable energy.

### 3.1.1 The Highlands and Islands

As stated in Chapter 2.1.3, the history and language of Gaelic speaking Scotland is unique, and accordingly so are the tools and processes used to confer meaning to physical environments, and the cultural discourses which sustain social constructions of both the physical environment and social processes in this region. This has implications for how Highland and Island communities might interpret and respond to MRE projects.

In order to understand social responses to changes in an environment Greider & Garkovich (1994) contend that it is not important to understand the physical properties of the environment, but instead to recognise the cultural phenomena attached to the environment. In the case of the Highlands and Islands and crofting communities (Hunter, 1976), crofts and peats, for example, have been transformed into symbols that represent the essence of what it means to be a part of this sociocultural group. Accordingly, understanding the perception of change in this environment requires an understanding of the cultural organisation, rather than the physical properties of crofts and peats (Greider & Garkovich, 1994).

Hunter (2014) gives a detailed account of how indigenous Highlanders and Islanders construct the physical environment, how this differs from mainstream Western constructions of the same environment, and how this leads to different social responses to change. Hunter contends that the dominant romantic view of the Highlands as an unspoilt people-less landscape, popularised by writers such as Walter Scott, which guides modern environmentalism is not how indigenous Gaels view the landscape. For them the Highlands and Islands are a place in which people have appreciated, and been closely entwined with, the environment for hundreds of years. Today, the post-clearances, people-less landscape is not a natural wilderness, but instead a place, where, in the words of the writer Hugh MacLennan “everyone who ever mattered is dead and gone” (quoted in Hunter, 2014: 20).

The social constructionist approach thus reveals how social responses and social impacts resulting from projects can be interpreted differently in different sociocultural contexts such as the Highlands and Islands. In the context of this research I set out to understand the cultural organisation in potential MRE host communities, and how this influences social responses to MRE. I recognise that the sea is more than just one sea, and that every MRE device is more than just one MRE device. As Watts (2012) and Watts & Ross Winthereik (2017) demonstrate, as new technologies the cultural phenomena that are attached to MRE

In sight and in mind: social implications of marine renewable energy are evolving and place-based. I now look further at how the social constructionist approach I have outlined here serves to elucidate the social responses to MRE that have been demonstrated in the literature.

### **3.1.2 Marine renewable energy**

Using the social constructionist lens, it is possible to identify how discourses and knowledge of renewable energy and MRE have been constructed and how social responses to MRE and other renewable energy projects develop.

As I outlined at the start of section 3.1, the primary rationale for renewable energy, climate mitigation, is a socially constructed phenomenon that has been reified by scientists and framed by media discourses (Demeritt, 2001; Wynne, 2010). Similarly, renewable energy knowledge along with the planning processes employed by developers and decision-makers have been constructed by industry and government (Aitken, 2009; Cowell, 2010). As outlined in Chapter 2.2, there is an emphasis placed on Environmental Impact Assessment and other scientific processes which are themselves constructed as measures of scientific authority (Weston, 2010). For example, a standard is set in the planning system for what is an acceptable level of noise output from wind turbines, however, this seemingly objective measurement of wind turbine noise is socially constructed, and the actual social impact of turbine noise depends on individual perceptions and does not occur at a set decibel level (Haggett, 2012).

The order, structure and stages of planning practices are formulaic and set as accepted practice. Starting with a scientific evaluation of what is a suitable site for energy technology deployment, how to consult stakeholders, which authorities to involve, and how and when to involve them - all assuming that this is the correct procedure to follow. For 'lay' community members, however, there may be different approaches and emphases on what is considered to be an appropriate approach to decision-making and planning (Aitken, 2009). Planning processes are therefore set, and their validity and appropriateness agreed on, by those in power (Aitken, 2010a), yet these are based on social constructions rather than objective scientific appraisals.

In terms of renewable energy, the way that landscape qualities are constructed (Cowell, 2010) and the public are imagined (Walker et al., 2010) by industry and policy actors influences the socio-technical configurations of renewable energy systems and planning processes (Walker & Cass, 2007). As outlined in Chapter 2.1.1, marine planning processes

In sight and in mind: social implications of marine renewable energy are currently under active development and are diverging from existing terrestrial planning processes (Jay, 2010). The social constructionist approach therefore helps to reveal how these new processes are being developed and how they may diverge from terrestrial renewable energies (Kerr et al., 2014).

Having looked at social construction of renewable energy planning, I now consider how social constructionism theory aids understanding of social responses. Following research into social responses to the Wave Hub MRE test site in Cornwall, McLachlan (2011) found individuals' symbolic interpretations of MRE technology and the marine environment suggested whether they were likely to oppose or support the project. For instance, if people viewed MRE technology as experimental and place as nature then opposition was likely, but if the technology was interpreted as pioneering and place was seen as a resource there could be support. If place was viewed as nature, but the technology was viewed as being at one with nature then support was also likely. Individuals' social constructions of place, nature and technology therefore informed their social responses to the Wave Hub.

Likewise in a Scottish context, Alexander, Potts, et al. (2013) recognise that Scottish fishers' responses to MRE are likely to be based on the interpretation of factors such as potential loss of livelihood, opportunities for alternative employment, potential benefits, and appropriateness of compensation. It is therefore important to understand how factors such as technology, place and economic opportunities are constructed by fishers and other potential MRE host community members.

Looking at the role of social construction in informing responses to Marine Protected Areas (MPAs) in Australia, Voyer et al. (2015b) identified how different interpretations of the marine environment led to different responses. Individuals with an 'ecological' cultural model which gives primacy to ecological environmental functions placed an emphasis on benevolent protection of the marine environment and supported excluding people from it. In contrast people with a 'community' cultural model emphasised the traditional and cultural use of marine spaces by local communities and supported the right to exploit marine areas. These competing discourses and social constructions of the marine environment led to different social responses towards plans for the MPA, and further revealed differences in views towards, and levels of faith in, the scientific community, external regulators, and planning processes involved in the MPA designation.

Different social responses do not only occur as a result of separate discourses leading to different worldviews. Different interpretations of the same factor can also lead to different responses (Gee, 2010; van Veelen & Haggett, 2017). Gee (2010) demonstrated how both supporters and opponents of wind energy in Schleswig-Holstein, Germany, used the same factors to justify their respective responses. Energy, economics, and visual impacts were used as arguments to both support and oppose windfarms. The way in which these issues were constructed and argued by each group, however, was very different.

As these examples show, responses to both marine plans and renewable energy are socially embedded, are shared within a community, and can also differ between them (Devine-Wright & Howes, 2010). It is therefore imperative to look at how different factors are constructed and evaluated in order to understand social responses.

By using a social constructionist approach, it is the aim of my research to do precisely this. My role as a researcher here is not to determine which interpretations are factually correct as the sociological focus is on analysing people's acceptance of knowledge. I am focussed on understanding the range of social responses and social impacts that might arise in host communities and the factors that inform them, and in this regard the social constructionist approach is helpful for revealing how and why different interpretations occur.

To summarise this section, I have outlined the importance of the theory of social constructionism to conducting research into MRE. Following on from this in the next section of this chapter I detail the existing literature on social responses to MRE and other low-carbon energy technologies.

## 3.2 Understanding social responses to marine renewable energy technologies

Until now, as I discussed in Chapter 1, there have been few MRE projects deployed anywhere in the world. This means that publics have not yet been widely exposed to the technologies and nor have their responses to them been widely researched. The premise of this research is that in contrast to public statements made by the MRE industry that the technology will be ‘out of sight and out of mind’, positive social responses to MRE cannot be assumed, and negative social responses to MRE can occur. The sociology of MRE is therefore an important area of study with real world implications for both the MRE industry and host communities.

In this section I review the literature around social responses to renewable energy projects to consider the range of factors that have been shown to inform social responses. I focus on the small number of studies that have been conducted looking at social responses to MRE projects, but as these studies are limited in number, I also consider literature on social responses to both onshore and offshore wind energy, which as more mature technologies have been more widely deployed and studied, and carbon dioxide capture and storage (CCS) which has been extensively researched due to its significant climate mitigation potential. I discuss this literature on other low-carbon technologies in order to reflect on the full range of inter-related factors that inform responses to energy technologies and to determine how these factors might apply to MRE.

Research into social responses to all of these low-carbon technologies raises a number of related conclusions and parallels which I explore here to consider their application to social responses to MRE. I first briefly discuss one theory, NIMBY, which has been disproved amongst recent literature, before going on to introduce six further factors which have been shown to inform social responses to renewable energy projects.

### 3.2.1 Discounting NIMBY

Opposition to renewable energy projects was initially characterised in much empirical research as ‘Not In My BackYard’ (NIMBY) responses. In this explanation people were simply opposed to having infrastructure constructed near to their homes and settlements. The NIMBY explanation has now been dismissed as overly simplistic and not a true reflection of the complex, interconnected factors that inform social responses (Burningham, 2000; Devine-Wright, 2005; Wolsink, 2006; van der Horst, 2007). Instead,

In sight and in mind: social implications of marine renewable energy research has now focussed on more nuanced ways of understanding publics' responses.

For example, Haggett (2011) identifies five broad factors that have been shown to affect responses to wind energy projects: visual impact; local context and place attachment; scale; relationships and trust, and; planning and participation. The question which this research is concerned with is whether the same factors that have been shown to inform social responses to renewable energy onshore will also apply offshore or whether different factors inform social responses to MRE.

Haggett (2011) demonstrates that factors which were first observed in relation to onshore wind projects are equally relevant to offshore wind projects. Similarly, in a comprehensive review of the literature on public engagement with ORE Wiersma & Devine-Wright (2014) identify that the same factors which inform responses onshore also apply offshore, but that a number of other unique offshore factors are also prevalent. As with onshore renewable projects, Wiersma & Devine-Wright (2014) conclude that the processes that influence social responses to ORE are dynamic, complex, and variable.

Wiersma & Devine-Wright (2014) further identify that responses are informed by both contextual factors which relate to the physical characteristics of projects, and personal and socio-psychological factors which relate to individuals' prior experiences of planning processes and social constructions of place and technology. Correspondingly, detailed empirical research into responses to MRE on UK Islands by de Groot & Bailey (2016) identified four factors, combining both contextual and psycho-sociological factors, which guide local evaluation of MRE: opinion forming under uncertainty - evaluating impacts on the local environment; vulnerability and economic effects; protecting existing assets; experience and opinion forming. Together these two studies, based on both a literature review and empirical evidence, show that a range of factors inform social responses to MRE.

This diverse range of factors identified by Wiersma & Devine-Wright, and de Groot & Bailey can be seen to fit within Haggett's (2011) five broad factors: visual impact; local context and place attachment; scale; relationships and trust, and; planning and participation. I now take these five factors around which to structure the following subsections of this literature review. I examine each of these factors in turn, before finally discussing a sixth factor, community benefits, which also has increasingly been shown to be important in the social responses literature (e.g. Walker et al., 2014; Rudolph et al., 2017; Kerr et al., 2017).

### 3.2.2 Visual impact

The first of these factors is visual impact or disamenity. Visual impact has long been cited as a major reason why people oppose wind turbines, and has been hypothesised as a major advantage for energy developments at sea as the visual impact is thought to be lower and turbines are considered to be 'out of sight and out of mind' (O'Keeffe & Haggett, 2012). Indeed studies by Bailey et al. (2011) and de Groot & Bailey (2016) cite reduced visual disamenity as a factor behind publics' support for wave, tidal and offshore wind projects.

Other studies have shown, however, that visual impact concerns can inform responses towards offshore projects as well as those onshore. Devine-Wright & Howes (2010) showed that if offshore wind turbines are not interpreted as a visual 'fit' for an area then they may be opposed. Haggett (2008) reported opposition to the Gwynt y Mor wind farm off the north Wales coast as people felt that the turbines spoiled the natural beauty of the area, effectively 'fencing in the bay'. Similarly, opponents of offshore wind farms in Schleswig-Holstein, Germany believed that the turbines would negatively impact on the seascape through a loss of the open horizon and the industrialisation of the sea (Gee, 2010). Gee, however, also found that project supporters ventured visual impact as a reason for their support believing that offshore wind farms had lower disamenity than those onshore.

Other studies have explored these different interpretations of visual disamenity. Ladenburg & Dubgaard (2007) reported that people in Denmark were willing to pay more for wind energy if the turbines were sited further offshore. People with a view of a wind farm from their home or summerhouse were prepared to pay up to five times more in order to move it further offshore than people without such a view, highlighting how the visual impact mattered more to those who bore it than those who did not. Similarly, people who could see an offshore wind farm in Nantucket, Massachusetts, during their daily routine, were four times more likely to be opposed to the project than those who could not see it (Firestone & Kempton, 2007). In contrast however, Firestone et al. (2018) found that there was no relationship between visibility and visual impact amongst residents near an offshore windfarm in Rhode Island. Being able to see turbines does not necessarily lead therefore to visual disamenity or negative responses as the perception of visual impact is socially constructed (ibid.).

Marine energy devices, particularly those submerged within the sea, may present lesser visual impacts than wind energy, but this evidence shows that moving wind turbines

In sight and in mind: social implications of marine renewable energy offshore has not removed people's sense of disamenity. It therefore cannot be assumed that MRE can be deployed without incurring visual impacts.

It is also important to consider the onshore infrastructure that will have to be built to support the transmission of power generated at sea and the visual impacts that this may have (Devine-Wright, 2013; Batel et al., 2013; Aas et al., 2014; Batel & Devine-Wright, 2015). More research is needed to determine how visual impacts will affect responses to MRE and this is a key consideration that is explored in the research undertaken here.

### **3.2.3 Local context and place attachment**

The second factor which Haggett (2011) identifies is the local context and place attachment. Every area is different with unique social, cultural, historical and geographic characteristics and this affects the responses of people in each location (van Veelen & Haggett, 2017). Devine-Wright (2009) proposes place attachment theory as a way of explaining responses to renewable energy projects. I first consider the theory behind this factor before discussing examples of how it applies to MRE.

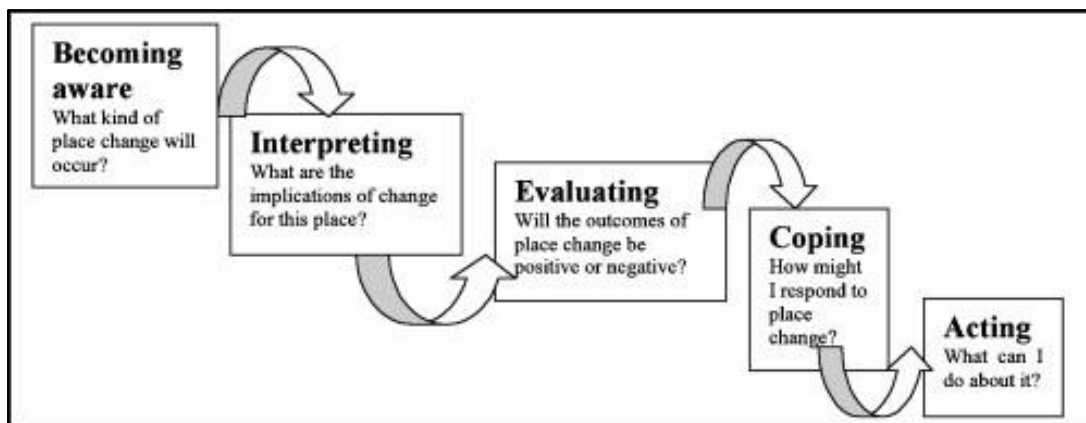
For Devine-Wright (2009), 'place' is more than just the physical aspect of a location, but also includes the "variety of meanings associated with that location by individuals or groups" (p 427). Place attachment can be understood as the complex emotional bond between people and their meaningful environments (Devine-Wright, 2009; Scannell & Gifford, 2010) with bonds formed towards both the physical and social dimensions of a place (Hidalgo & Hernandez, 2001). Physical place attachment is based on both the functional purpose of a landscape (Lin & Lockwood, 2014) and the socially constructed emotional meanings given to a landscape (Greider & Garkovich, 1994; Lewicka, 2011). Social attachment to place is formed based on the emotional and cultural connections to the people, past and present, in a location (Hidalgo & Hernandez, 2001). Devine-Wright (2009) terms the degree to which a person's identity is defined by a location as 'place identity'.

Importantly, studies have shown that people develop place attachments to the marine environment as well as to terrestrial spaces (Hayward, 2012; Voyer et al., 2015). Locating renewable energy projects offshore does not therefore mean that they will be in environments that local people are not attached to.

For Devine-Wright (2009), opposition to renewable energy projects is a place-protective action, which results from change or 'disruption' to place attachment and/or place identity.

Devine-Wright suggests that change or disruption to place attachment and/or threats to place identity can trigger emotional responses which may lead to oppositional activities. He considers that conflicts are particularly likely when restorative (wild, natural) places are affected by 'industrial' or 'technological' developments.

Devine-Wright (2009) envisages this response taking place in five stages: Becoming aware; interpreting; evaluating; coping; and acting (Figure 3-1). The first two stages involve communication from media, local people, and trusted others, and involves making sense of change. Interpretation depends on the level of attachment and whether the attachment is physical or social. Evaluating involves judging whether change is positive or negative. Coping involves responding to change e.g. denying or accepting it. Finally, acting involves doing something about the change such as participating in oppositional activities.



**Figure 3-1: Stages of public response to place change** (Source: Devine-Wright, 2009)

A number of studies have used the concept of place attachment to explore social responses to renewable energy projects and these studies suggest that place attachments and the local context will inform responses to MRE. Devine-Wright uses place attachment to explain how people respond to changes in their area resulting from projects such as the Gwynt y Mor wind farm (Devine-Wright & Howes, 2010) and the SeaGen tidal device in Strangford Lough (Devine-Wright, 2011a; Devine-Wright, 2011b), while place attachments have also been shown to influence responses towards the wave energy device in Mutriku, Spain (Heras-Saizarbitoria et al., 2013) and the Cornish Wave Hub (McLachlan, 2009a; 2009b; 2011).

These cases show that local context is important in determining responses and that projects can be interpreted differently between communities due to differing contexts. They also show that different social constructions of place and levels of place attachment

In sight and in mind: social implications of marine renewable energy can lead to different interpretations of the same project, and that these different interpretations can occur within, as well as between, communities.

Devine-Wright (2011a) reported that the SeaGen tidal energy converter was predominantly viewed positively amongst nearby residents as it was deemed a visual 'fit' with the lough that enhanced the distinctiveness of the area through its novelty. This led to enhanced place-related pride and self-esteem at the individual and collective level which contributed to the positive feelings (ibid.). This shows that place change can be interpreted positively as well as negatively and that change to places from projects does not necessarily have to be disruptive (Devine-Wright, 2011b).

It was found, however, that there were significant differences in responses between two local villages, Portaferry and Strangford. The project only enhanced place attachments in Strangford where wealthy retired residents more clearly felt positive outcomes for climate change mitigation and for the village through 'being put on the map' (Devine-Wright, 2011b). In contrast, Portaferry's younger, less wealthy and less educated residents were more likely to anticipate negative outcomes, and less likely to express support as they did not see the project addressing local economic decline (ibid.).

Devine-Wright & Howes (2010) likewise observed different responses to the Gwynt y Mor wind farm between publics in two seaside towns adjacent to the project, Llandudno and Colwyn Bay. Llandudno residents viewed their town as a traditional, beautiful seaside resort and interpreted the 'industrial' wind farm as a threat to the natural beauty of their place. In more industrial, less prosperous Colwyn Bay place attachment was less strong, and the wind farm was seen more in keeping with the area. Similarly, van Veelen & Haggett (2017) show that place attachment was both an impetus to develop community-owned renewable energy projects in Scotland, and a source of opposition to them.

Other authors have also demonstrated how interpretations of place can inform responses to marine projects. McLachlan (2009b; 2011) revealed that the way in which place was interpreted affected support or opposition to the Cornish Wave Hub. She found that Cornwall was generally viewed as economically vulnerable and that some people welcomed new industry and opportunities for the area, while others worried about possible threats to important existing industries such as surfing and tourism. The sea was interpreted both as a resource to be exploited and as nature to be protected and people's responses to the project depended on their interpretation.

Different levels of place attachment were also observed in relation to the wave device in Mutriku, Spain. The beach, which has symbolic and cultural importance to the local people, has been fundamentally altered by the large breakwater within which the device is located (Heras-Saizarbitoria et al., 2013). From the new beach created behind the breakwater it is no longer possible to see out to the horizon, while the sand is different compared to the natural sand that existed before as it has been imported. For some people the new beach is bigger and more comfortable, while for others it feels more urban, has lost its charm and is no longer worth using (ibid.). These different responses can be understood as reflecting different levels of functional and emotional attachment that people had to the old beachfront.

Ladenburg (2010) showed that people who use a beach regularly were more negative towards offshore wind turbines than people who only use the beach seasonally. These different responses to changes in the seascape could be understood to represent different levels of place attachment and/or place identity between regular and seasonal users. Indeed, other studies have shown differences in place attachments between 'incomers' and 'natives' (Hernández et al., 2007; Pitkänen et al., 2013).

These studies all illustrate that place attachment and local context is an important factor in determining responses towards MRE projects, and that different people have different place attachments as these are socially constructed and can vary both within and between communities (Lewicka, 2011).

It is not yet clear how these interpretations of place and place attachment will apply to MRE projects in coastal Scottish communities, though research suggests they will be important (Kerr et al., 2015). Fishing is a long-established, socio-economically and culturally important activity in this area, and it is generally thought that fishers will be impacted by MRE with projects potentially limiting access and navigation, and affecting fish stocks (both positively and negatively) (Alexander, Potts, et al., 2013). The authors recognise the need for more research into place-attachment of rural Scottish communities in order to understand how people in these locales will respond to MRE.

This section has considered the importance of place attachment and the interpretation of change in communities for informing social responses. The research undertaken in this thesis is designed to explore the attachments that people in potential MRE host communities have and how these attachments will be affected by MRE.

### 3.2.4 Scale

Place can be interpreted on both a local and an international scale (McLachlan, 2011), while Haggett (2011) cites the disjuncture between the local and the global as the third factor in informing responses. Governments and low-carbon energy proponents generally employ the need to reduce CO<sub>2</sub> emissions and mitigate global climate change as the rationale for project developments, though local publics tend to base their responses on local issues (Devine-Wright et al., 2015). Shared global benefits can be hard to visualise and stand in contrast to the possible local impacts of projects, including visual disamenity (Ladenburg & Dubgaard, 2007), impacts on recreational activities, wildlife and fishing (Firestone & Kempton, 2007), and threats to local industries such as tourism (Haggett, 2008), which are likely to be observable and tangible.

How this relationship between the local and the global is interpreted by the people who live and work in the local communities where the technologies are being deployed will influence responses to projects (Devine-Wright et al., 2015). For example, McLachlan (2011) found different interpretations of the Cornish Wave Hub. It was variously viewed with support for locals 'doing their bit' for climate change, scepticism as to the actual carbon reduction benefits that would accrue from it, and worry about the possible local environmental impacts. As Devine-Wright (2011b) explained, one community in Northern Ireland supported the SeaGen project as they saw how the project benefited the global climate, whilst the neighbouring community did not see any local benefits from the project.

This shows that the idea of who benefits, and who bears the impacts, also features in economic debates over projects. McLachlan (2011) found that in Cornwall the waves were generally viewed as belonging to the people, and for some the Wave Hub was viewed as outside companies 'stealing' 'our waves'. The perceived economic benefits of the wave device in Mutriku, Spain also informed people's attitudes with concern that there would be no local economic return from the project (Heras-Saizarbitoria et al., 2013). The developer, however, interpreted this as an initial investment that would lead to future renewable energy developments in the region. Similarly, in Wales, Haggett (2008) and Devine-Wright & Howes (2010) highlighted local concern that the Gwynt y Mor wind farm would impact negatively upon tourism in the area and allow outside companies to profit. Communities do not want to bear unfair or unnecessary impacts and are more likely to support a project if it has perceived direct local benefits, or if there are similar ones in other communities, thus

In sight and in mind: social implications of marine renewable energy sharing the impacts regionally or nationally (Firestone & Kempton, 2007).

Marine energy is slightly different to wind energy in that there are fewer locations where there is a sufficient natural resource to make technology deployment viable (Kerr et al., 2018). Accordingly, there is less opportunity to develop multiple projects and share the impacts across communities. MRE is also in a developmental phase meaning that projects do not generate as much electricity as other more mature technologies, raising questions about what level of global benefits may accrue. On the other hand, small-scale demonstration projects could be interpreted as having fewer local impacts than large-scale developments, whilst the distinctiveness of novel projects could put a community 'on the map' (Devine-Wright, 2011a). This discussion shows that issues of scale have the potential to inform social responses to MRE.

### **3.2.5 Relationships and trust**

Haggett's (2011) fourth factor is the relationship with outsiders, with many studies showing that trust, or lack thereof, in the project developers is crucial in informing responses. Two main trust factors can be distinguished, the perceived integrity of a trustee, and their perceived competence (Huijts et al., 2007). That is, people make decisions based on someone's perceived good intentions, and based on the outcomes of processes. The issue of trust has been shown to have more significance in people's evaluation of a project than the technical qualities of the project or the nature of the information communicated (Siegrist & Cvetkovich, 2002; Terwel et al., 2012). Likewise Terwel et al. (2011) found that acceptance of CCS is higher when competence-based trust in a CCS proponent is high, and that if integrity-based trust is low then people will take the opposite viewpoint to the proponent.

Haggett (2008) showed how the mistrust of the English developer amongst local people in North Wales influenced their perceptions of the Gwynt y Mor wind farm. There was resentment to the control and ownership of the project, as there was little local involvement and a sense that the outsiders who were developing the project were imposing local, Welsh, disadvantage for outside, English, gain. Devine-Wright & Howes (2010) also found that trust in actors was crucial in informing responses to the Gwynt y Mor wind farm. People with high trust in the opposition group had significant negative correlations between perceived threats to place and wind farm support, whilst amongst

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people who did not trust the opposition group or those with high trust in the developer  
there was no correlation between threats to place and support.

Further evidence of the importance of trust in project developers comes from Howell et al. (2014) who noted that a lot of negative responses to CCS resulted from mistrust of the oil and gas companies developing the technology. Firestone & Kempton (2007) give a suggestion as to which stakeholders are better trusted, by reporting that people were more likely to support a project led by local government than by a private developer.

As outlined in 2.1, in Scotland MRE is to be deployed in remote communities meaning that any prospective developer will likely be viewed as an outsider (Kerr et al., 2015). At present, the technology is largely being developed by small, independent domestic companies, though there are also some international and multinational companies entering the market. There is also strong technology support from the Scottish and UK Governments. It is not yet clear what level of trust there is in these companies and government agencies in potential host communities and how this will inform local responses to MRE projects. Kerr et al. (2015) hypothesise, however, that in Highland communities that have been badly affected by the highland clearances and other historic policies led by outside governors, that I outlined in 2.1, there will be opposition to MRE projects based on existing levels of poor trust and relationships. I build further on this theme with the next factor, planning and participation.

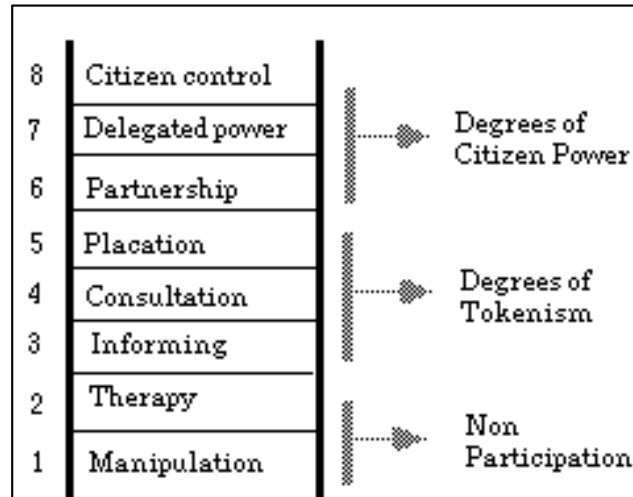
### **3.2.6 Planning and participation**

The fifth factor identified by Haggett (2011) in determining social responses to offshore energy projects is planning and participation. This focusses on the faith that publics have in the processes that inform planning and decision-making, with people much more likely to accept outcomes if they feel that the process is fair and equitable (Gross, 2007; Wolsink, 2007b; McLaren, 2012; Firestone et al., 2012). Here, I first introduce the theory behind planning and participation before considering it in relation to MRE.

Debates about the value of including the public in planning predates issues of renewable energy, with Arnstein (1969) first identifying issues of citizen participation in relation to urban planning in the United States. For Arnstein, participation equates to power, with public consultation only serving an effective purpose if those being consulted are able to influence the decision-making process and the subsequent outcomes. Arnstein categorised

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an eight-rung ladder of participation with participation and devolution of power from decision makers to citizens increasing as the ladder ascends (Figure 3-2). Arnstein asserts that in order for there to be meaningful public involvement in planning, participation should be occurring at the upper end of the ladder. It is only in this way that trust can be built between the public and planning authorities, and fairness of process and outcomes can be achieved.



**Figure 3-2: Ladder of participation** (Source: Arnstein, 1969)

At present renewable energy planning is typically conducted following a model of ‘decide-announce-defend’ in which a developer decides on their plan, announces it in the community and then defends it against criticism. This approach aligns with degrees of tokenism on the middle rungs of Arnstein’s ladder, and this lack of meaningful citizen participation in decision-making has been shown to lead to negative social responses towards offshore windfarms (Wolsink, 2010).

Other examples in the literature of poor planning processes leading to negative social responses include both onshore wind and MRE. In Australia, a perceived lack of procedural fairness in a windfarm consultation process, which divided a host community into winners and losers, resulted in the project lacking support among sections of the community (Gross, 2007). Gross (2007) concludes that both fairness of process and fairness of outcomes are vital for encouraging engagement and acceptance.

The planning process involved in the wave project in Mutriku, Spain, was shown to affect responses to the project (Heras-Saizarbitoria et al., 2013). The wave project was peculiar in that it was conceived after a breakwater project had already been proposed. There was

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some opposition to the breakwater project, particularly from environmental groups, and there was a feeling that the device was an afterthought designed to reduce environmentalists' opposition. In this way people who initially opposed the breakwater continued to oppose the wave project. Furthermore, the project was decided on by the Basque government with local people having no say over it and there was a feeling that regional and local priorities did not align (Heras-Saizarbitoria et al., 2013).

Examining the process used in the SeaGen tidal energy project, Devine-Wright (2011a) found that a strong apathy towards the planning and consultation process meant that people were not upset about it as they did not expect it to be any better. However, Devine-Wright notes that if there were less positive perceived outcomes of the project, the lack of effective consultation may have led to more opposition being expressed.

'Top-down' or technocratic planning approaches have now been widely recognised as deficient and there has been a recognition that greater public participation in renewable energy policy and planning is desirable (Chilvers, 2009; Haggett, 2009; Kerr et al., 2014). Wilsdon & Willis (2004) identify three reasons for wanting to conduct public engagement in planning: normative, instrumental and substantive. The normative view is that engagement is conducted because it is the right thing to do and forms part of a healthy democracy. The instrumental perspective is that engagement can help to serve particular purposes and interests such as increasing trust and legitimacy in governing institutions (Irwin, 2006) and in the case of renewable energy projects to reduce opposition (Cowell, 2007).

The substantive view is that engagement improves decision-making, creating better scientific, technological and social outcomes. Substantive rationales include both epistemological motivations for acknowledging other ways of 'knowing' and ontological arguments for including other non-scientific ways of 'being' (Chilvers, 2009). Wilsdon and Willis (2004) emphasise the need for public engagement to be substantive so that it not only informs, but also shapes decision-making. Haggett (2009) also recognises the utility of this approach in informing renewable energy planning and draws the parallel with Habermasian ideas of collaborative planning. Habermas (1976) proposed the concept of 'ideal speech communities' where all voices could be heard and stands in contrast to rationalist planning which is based on technocratic decision-making. This collaborative approach values 'lay' knowledge and attempts to recognise and incorporate diverse stakeholder interests through communication and mutual trust.

Whilst welcoming collaborative planning, Chilvers (2009) cautions that the role of power in planning is crucial and that it is not simply something to be redistributed from one person to another as Arnstein and Habermas infer. As I outlined in 3.1, the Foucauldian view of power is that it is pervasive within social networks and is used to set discourses through which the world, scientific knowledge and planning processes included, is socially constructed. Opening up participation to difference, otherness and indeterminacy is therefore important for ensuring equitable participatory decision-making (Chilvers, 2009).

The decide-announce-defend approach to renewable energy planning actively encourages oppositional activity, rather than support, and as only opposition voices are heard results in a democratic deficit (Bell et al., 2005). These opposition voices can lead to a planning inquiry, but 'lay' voices are widely excluded from this instrumental, technocratic process, thus reducing citizen participation (Aitken, 2009; 2010a).

Writing on epistemology in public participation in windfarm planning, Aitken (2009) observes that 'expert' knowledge has a hegemonic position in technical decision-making to the exclusion of 'lay' knowledge. As I stated in 3.1 earlier in this chapter, science, knowledge, and renewable energy planning processes are socially constructed. This matters for renewable energy as the planning process and the actors within it have the power to decide which knowledge and voices to incorporate in their decision-making (Aitken, 2009).

Aitken (2009) illustrates how a Scottish windfarm planning process privileged 'expert' knowledge, that is knowledge based on 'reliable' data and scientific reasoning, and delegitimised witnesses who could not back up their claims in this way. The process therefore constructed 'expert' knowledge and dismissed other types of 'lay' knowledge. What is considered credible 'expert' knowledge and what is excluded as unscientific 'lay' knowledge is therefore determined by prevailing discourses and is socially constructed (Wynne, 1992; Epstein, 1995; Collins & Evans, 2002). Aitken (2009) contends that local people who wish to contribute to local planning decisions do in fact possess knowledge and expertise, just not the type that is privileged by the planning system. Throughout this thesis, I now use the terms 'expert' and 'lay' to signify that, whilst knowledge is currently framed in this way within the planning system, I recognise that other social constructions of knowledge are possible and that local people who are not scientifically trained do possess valuable knowledge and expertise and that this should be valued and heard more widely.

If moves towards the types of greater collaborative planning proposed by Arnstein (1969), Habermas (1976) and Chilvers (2009) are to be successful, commensurate changes in the way that knowledge is framed and utilised within the process are also required (Irwin, 2006). Simply giving citizens the opportunity to participate in planning processes is unlikely to be sufficient without fundamental changes in the way that knowledge is presented and perceived within society (Aitken, 2010a). Publics need to be empowered to participate and to recognise the importance of 'lay' knowledge in decision-making and not to defer power to elites and those with 'expert' knowledge (Aitken, 2009; 2010a).

In Chapter 2.1 I outlined the Scottish marine planning context. Whilst there has been a general move towards devolution of decision-making and community empowerment, phenomena that I have outlined in this section as being important, MRE planning processes in Scotland remain 'top-down'. Local authorities have little jurisdiction in MRE planning which is led by the Crown Estate and central government who want to grow the MRE industry and therefore want to keep power in their own hands and away from local authorities who may object (Johnson et al., 2013). Accordingly, whilst local communities are being encouraged to participate in local decision-making this does not apply to MRE.

The literature discussed here, however, suggests that when local people are excluded from, or do not have faith in, decision-making processes oppositional responses can occur. It is therefore instructive to look closely at how planning and participation is conducted in the Scottish MRE context and whether this affects responses to projects. For example, research by Alexander, Wilding, et al. (2013) suggests that planning and participation processes could be important in determining responses to MRE in Scotland, particularly among powerful stakeholders such as fishers. Alexander, Wilding, et al. (2013) see a need for research into fishers' feelings of equity and fairness in planning, as well as consultation to build trust and utilise fisher knowledge in MRE planning. This is of particular importance as Johnson et al. (2012) observe that Scottish MRE projects are currently developing faster than planning processes.

The evidence shows that effective, substantive public engagement is something to be strived for as it leads to better, fairer outcomes, and that further research is needed into determining what consultation processes are appropriate for MRE technologies in potential MRE host communities (Kerr et al., 2014).

### 3.2.7 Community benefits

Another factor, which Haggett (2011) does not mention, but which has increasingly been shown in the literature to inform social responses towards renewable energy is community benefit (Aitken, 2010c; Cass et al., 2010; Cowell et al., 2011), and I discuss this factor here. First, I consider how community benefits may influence social responses to MRE, before discussing how community benefits are realised.

Following a condition for achieving planning consent first instigated by the Highland Council in 2011, onshore wind energy developments in the UK are now expected to make an annual community benefit payment of £5000 per MW of installed capacity (Kerr et al., 2017). The rationale for these payments is generally understood to be normative and instrumental in that they offer compensation to affected communities and help ensure that planning permission is granted (Aitken, 2010c; Cass et al., 2010; Cowell et al., 2011). Indeed, Bell et al. (2013) note that there have been fewer onshore windfarm proposals refused planning permission in Scotland than in the rest of the UK, and that this higher planning success in Scotland may have been due to the earlier introduction of community benefit payments.

The provision of community benefit payments from onshore wind have contributed to the notion that renewable energy is something which communities expect to benefit from (Cass et al., 2010). Indeed, the absence of an acceptable benefits package has been shown to lead to negative social responses, even when these were initially positive (Macdonald et al., 2017). To this end, community ownership of wind energy projects has been demonstrated to increase local support (Warren & McFadyen, 2010; Musall & Kuik, 2011). Community-owned renewable energy is developed by groups for whom renewable energy generation is a means to achieve local socio-economic development (van Veelen, 2017), and therefore puts positive community benefits at the heart of its rationale.

In terms of ORE, there is less provision of community benefit payments as there is currently no obligation on developers to make community benefit payments as there is for onshore wind, and there is also no community ownership of ORE projects (Kerr et al., 2017; Rudolph et al., 2017). The assertion by project developers that ORE is 'out of sight and out of mind' aligns with a belief that social opposition to projects will be avoided and that community benefit payments are unnecessary. Furthermore, as at present, wave and tidal technologies are young and in a developmental phase it is hard for project developers to offer benefit

In sight and in mind: social implications of marine renewable energy payments when the profitability of projects is far from certain, and these payments could in fact financially harm the development of the industry (Rudolph et al., 2017).

Nevertheless, potential ORE host communities expect to benefit from projects and these perceived local benefits have been shown to contribute to positive social responses (de Groot & Bailey, 2016). As outlined in Chapter 2.1.3, the potential MRE sites in Scotland are in remote marginal communities and MRE represents a prospective welcome economic and industrial development opportunity in these communities (Graziano et al., 2017). This evidence suggests that deriving positive community benefit from MRE is important for communities and that the provision of benefits is a factor in informing social responses.

Kerr et al. (2014) note that future research is needed to understand what forms of community benefits can be derived from MRE, and whether the provision of community benefits is important for social acceptance of MRE. If MRE host communities do not perceive MRE to be out of sight and out of mind, then it is possible that the lack of a community benefits package, which is now commonplace for other forms renewable energy projects, may lead to negative social responses towards MRE projects.

So far in this section, I have outlined the importance of community benefits for positive social responses. However, whilst community benefit packages are welcomed by host communities, it is not clear to what extent communities actually benefit from this money (Munday et al., 2011; Cowell et al., 2012). Similarly, the extent to which community-owned energy projects are achieving the claimed local benefits remains unclear as there is limited evidence to show that the claimed benefits do in fact manifest (Berka & Creamer, 2018). Of course, finding evidence of short-term progress in a complex long-term process of subjective human change is not a straightforward task and requires novel evaluation techniques (Longstaff, 2008). This is why, as discussed in 2.2, appropriate social impact assessment is required in order to determine the ex post social impacts of renewable energy projects.

Kerr et al. (2017) outline a typology of renewable energy community benefits, with greater benefits accruing when the community has more power. Their typology shows that ORE provides the least benefits and has the least community engagement, whilst community-owned energy provides the most benefits and affords communities the most control over decision-making. Under this analysis, realising community benefit involves moving from

In sight and in mind: social implications of marine renewable energy transactional compensation payments to greater community participation in decisions about the rationale, scope and delivery of benefits (Kerr et al., 2017; Rudolph et al., 2017).

This transfer of power to local communities will enable each community to determine locally appropriate levels of renewable energy development and benefits packages. This is at the heart of community-owned energy which is focussed on fostering community participation (Rennie & Billing, 2015) and delivering tangible place-specific benefits such as the promotion of cultural heritage including Gaelic language (Haf & Parkhill, 2017). The literature presented here suggests that achieving positive community benefits is closely related to the need for substantive public participation, which challenges the instrumental processes, existing power structures and epistemologies that I outlined in 3.2.6 above.

### **3.2.8 Summary**

In section 3.2 I have discussed the literature on social responses to renewable energy projects. I based this discussion around six factors which have been shown to influence social responses: visual impact, local context and place attachment, scale, relationships and trust, planning and participation, and community benefits. These factors show that social responses to renewable energy are complex and result from individuals' interpretation and perception of these inter-related issues. Equally the literature suggests that these factors are likely to apply to social responses to renewable energy projects located offshore as well as onshore. The literature presented here guided this research as I set out to determine whether MRE could be considered 'out of sight and out of mind'.

### 3.3 Literature summary

This literature review chapter has identified a number of gaps and key questions which are addressed during this research. First of all, there is a limited knowledge of publics' responses towards MRE in general, and in potential host communities in particular.

Following on from this there is a lack of understanding around how the complex set of factors that have been shown to influence social responses towards wind energy apply to MRE. It is not clear how issues such as visual impacts, the local context and place attachment, relationships and trust, planning processes and participation, and community benefits do, or will, influence responses to MRE. The literature shows, however, that all of these factors could potentially inform social responses towards MRE.

At present, there is no comprehensive understanding of the relationship that host communities have with their environment (both marine and terrestrial) or the sense of 'place' that people in these communities have. Without understanding the local context including levels of place attachment, notions of resource ownership and ideas about sustainability and energy provision in remote communities, it is hard to determine what interpretations of change people may have resulting from projects in their locales.

On issues of planning it is not known how these processes affect responses to MRE. It is also not clear how these processes can be best designed and implemented to enable public participation and engender fair outcomes. There has also been no consideration in any of the literature of the possible social impacts of MRE and how these should be measured. More research is also required to establish whether the provision of community benefits is important for social responses to MRE.

The research I conducted for this thesis is guided by this literature and addresses these gaps. The research explores social responses to MRE in potential host communities and determines what factors inform these social responses. Particularly the research has sought to identify whether the factors presented here, which have been acknowledged in the literature as influencing social responses to low-carbon energy, do indeed also inform social responses to MRE in potential host communities in Scotland.

In understanding how social responses in these communities are formed the research is guided by the theory of social constructionism, which helps to illuminate how the local context and people's relationship to place, planning processes and decision-makers,

In sight and in mind: social implications of marine renewable energy technology, and the environment contribute to their social responses. This theory is used to reveal both whether these factors influence responses, but also how individuals conceive of these factors.

In focusing on illuminating these social factors in potential host communities the research brings new knowledge and understanding to the social impacts that MRE projects can have on communities, and the positive social impacts that communities want MRE projects to have.

In the next chapter I discuss the methodologies that I employed in this research in order to gather data and address these literature gaps.

## Chapter 4 **Methodology**

In this thesis I adopt a twin-track research approach to investigating social responses to marine renewable energy and the social impact of project developments. These two different methodological components are entirely separate, but highly complementary, and together yield rich and valuable data that provide a powerful insight into social responses to MRE amongst coastal communities in Scotland. In this chapter I outline each of these components in turn.

The first component, which I refer to as the Dialogue, is a set of public dialogue workshops commissioned by the Scottish Government and held in six coastal communities around Scotland. The second component, the Island, is ethnographic fieldwork I conducted on a Hebridean Island. This Island research adds contextual depth and analysis to the broader, higher level findings from the Dialogue workshops.

Although very different, both of these research components employed qualitative methods in order to gain in-depth data on social responses in potential MRE host communities. The Dialogue used a series of deliberative workshops where participants responded to specific scenarios. The Island fieldwork used ethnographic methods to inductively draw out Islanders' discourses around community and energy. In this chapter I detail both of these approaches, but first I outline the rationale for adopting qualitative research methods and a relativist epistemological position.

## 4.1 Methodological principles

The existing literature on social responses to ORE is lacking in qualitative studies (Wiersma & Devine-Wright, 2014) and scholars in the MRE field such as Wiersma & Devine-Wright (2014) and Kerr et al. (2014) recognise that a qualitative approach could fill many gaps in existing knowledge, as this approach can bring new perspectives to issues even where much is already known (Strauss & Corbin, 1998). In addition understanding less tangible, hard to measure social impacts, in the words of Vanclay (2012: 153), counting “what counts” rather than “what can be counted”, requires a relativist, qualitative approach.

In a critical analysis of scholarly efforts to understand the social aspects of wind power, Aitken (2010b) asserts that key assumptions which guide research into social responses, are in fact hindering a true understanding of the dynamics of these responses. As a result, Aitken believes that qualitative methods are better suited for assessing opinions and symbolic representations that are based on geographic, temporal, cultural and political contexts.

Aitken (2010b) details examples of assumptions within the literature that have led her to reach this conclusion. First, she contends that there is no critical reflection on the validity of polls (e.g. Eurobarometer, 2007; DECC, 2009) that have regularly showed that the public is supportive of renewable energy. Research has tried to explain the ‘gap’ between the overall public support shown in these surveys and the opposition that specific projects have faced (e.g. Bell et al., 2005; 2013), however, if support is not as strong as polls suggest then research could in actual fact be addressing the issue from the wrong direction.

One such survey conducted by Bailey et al. (2011) into support for wave energy in Cornwall claimed that almost 90% of respondents supported the technology. In contrast, using qualitative methods, McLachlan (2009a; 2009b; 2011) found far more mixed support towards the Cornish Wave Hub project. These differences in results could arise due to the ‘gap’ or could be down to the structure of the survey. Another possible explanation is that the survey collected ‘pseudo-opinions’ or ‘non-attitudes’ which occur when people feel pressed into giving an opinion even when they do not have enough information to form one (Malone et al., 2010). For example, a survey conducted in the US state of Oregon by Stefanovich (2009) showed that in general respondents had a positive attitude towards wave energy with more than 50% supporting the development of wave energy in the state

In sight and in mind: social implications of marine renewable energy and only 5% having negative opinions. However, almost 40% of respondents stated that they did not have enough information to form an opinion.

Following on from this, Aitken (2010b) asserts that there is an assumption in the literature that opponents are ignorant or misinformed and that they do not understand the benefits of the technology. This assumption is perpetuated by studies which show that people with direct experience of wind turbines are more in favour of them than people without experience (e.g. Warren et al., 2005). Wolsink (1994) however, hypothesises that support follows a “U” shape with initial high levels of support falling as people become more aware of the technology or a project. Support then increases again if there has been a positive experience with the technology or project. This more nuanced view, though still a simplification, recognises that support can go up and down due to knowledge and experience and that opposition can arise from knowledge of the topic rather than from ignorance.

In order to observe and understand the responses of potential host communities to renewable energy, it is necessary to understand how these responses are constructed and how people construct their community and marine environment. A qualitative, social constructionist approach is therefore required to explore how responses are formed. Qualitative data is a powerful source of analysis as it is highly contextual and based on a ‘real life’ setting and can thus go beyond a snapshot of events and demonstrate how and why things happen (Gray, 2009).

Aitken (2010b) further critiques approaches common within the literature by contending that there is an assumption that opposition is deviant from the majority-view as expressed in surveys, and that the role of social research is to help meet renewable energy targets by mitigating negative perceptions and increasing planning approval rates. This conviction sees opposition as something to be overcome and defines the problem accordingly, with a focus on understanding opposition rather than support. This narrative is closely tied to the NIMBY explanation, but as outlined earlier in 3.2.1, this is not an effective way of understanding the complex variables that inform responses. As it is recognised that the interpretation of different issues leads to opposition or support of projects, Aitken contends that it is problematic to make assumptions as to one viewpoint being more legitimate than another and argues instead that researchers should maintain a relativist position.

Similarly, Ellis et al. (2007) conclude that this “ideological (i.e. unreflectively pro-wind) and epistemological (i.e. unreflectively positivist) bias has led to poor explanatory findings, which in turn has resulted in ineffective policy” (p. 536). Aitken (2010b) argues that research into social responses should aim to understand the social context of renewable energy, and the way in which the planning system affects and is experienced by the public, rather than to manipulate potential opposition.

Guided by the work of Aitken (2010b), in this section I have looked at the weaknesses and criticisms of approaches that researchers take to understanding responses to low-carbon energy. This discussion sets out the basis upon which I undertook qualitative research methods based on a relativist epistemology in my research. This approach is an effective way for getting the depth of understanding currently missing in the MRE literature

Having outlined the rationale for qualitative research approaches, I now move on to discuss each of the research components in turn. Starting with the Dialogue, I further outline the rationale for the method, explain the background as to how it was developed, describe the activities undertaken, and finally reflect on the challenges of conducting this research. At the end of the chapter I offer some comparisons of the two methods and discuss my approach to data analysis.

## 4.2 The Dialogue

In this section I give details on the concept of public dialogue, outline the background to the Dialogue workshops, describe the workshop process, and then provide some critical reflection on the process.

The official report on the Dialogue project has not yet been made publicly available. Accordingly, I have anonymised details of the project in this thesis. The identity of the project funder, independent contractor and government department involved in the project have not been mentioned. The specific locations of the six workshops have also not been stated. In addition, in accordance with standard ethical procedures (Bernard, 2006; Gray, 2009), none of the identities of the workshop participants are given and all data from the workshops is presented anonymously.

This section is divided into four parts: I start by introducing the concept of public dialogue which underpins this research component. Secondly, I then discuss the background which led to the commissioning of the Dialogue and how I came to be a part of it. Third, I outline the Dialogue workshop process, before finally reflecting on the Dialogue and methodology.

### 4.2.1 Public dialogue

Over the last 25 years, public engagement in policy-making, particularly in the field of science and technology, has grown steadily both in the UK and internationally with the aim of reducing democratic deficits, increasing public legitimacy and trust in outcomes, harnessing collective intelligence (Pieccka & Escobar, 2013) and ultimately leading to better decision-making (POST, 2001). Forms of public engagement and citizen participation have been used to explore publics' views on a range of technologies and innovations including, but not limited to, brain imaging technologies (Escobar, 2014), nanotechnologies (Pidgeon & Rogers-Hayden, 2007), nuclear energy (Whitton et al., 2016) and onshore wind energy (Roberts & Escobar, 2015).

Whilst the concept of 'dialogue' has been debated widely within academic and practitioner literature and can mean different things to different people (Chilvers, 2010; Escobar, 2012), this Dialogue project is based upon the UK Government's understanding of public dialogue and this is what I focus on here. Successive UK Governments have established public

In sight and in mind: social implications of marine renewable energy dialogue as a particular form of public engagement in science and technology through which to broaden the basis on which policies and decisions are made (POST, 2001).

Sciencewise, the UK's national centre for public dialogue in policy-making, defines public dialogue as “a process during which members of the public interact with scientists, stakeholders (for example, research funders, businesses and pressure groups) and policy makers to deliberate on issues relevant to future policy decisions” (Sciencewise, 2013: 3). Similarly, Research Councils UK characterise public dialogue as “participatory engagement where the outcomes are used to inform decision-making” (Prikken & Burall, 2012: 6).

In short, public dialogue is an approach to involving citizens in decision-making (Sciencewise, n.d.). Public dialogues can take many formats but there are certain features which distinguish it from other forms of public engagement (Figure 4-1). Central to this is that public dialogue is both deliberative and inclusive (POST, 2001). Public dialogue is inclusive in that it brings together a diverse mix of citizens with a range of views and values to ensure that a range of voices are heard on complex and/or controversial issues (Sciencewise, n.d.), rather than ‘the usual suspects’ such as academics, official bodies, pressure groups, and industry lobbies (POST, 2001). It is deliberative in that participants have time to discuss and consider the topic at hand and re-evaluate their views (POST, 2001).

Escobar (2012) emphasises that dialogue is about building understanding and relationships through processes that create safe spaces for collaborative inquiry. This sets it apart from debate which is often more confrontational and is about promoting alternative views (ibid.).

Importantly from a policy perspective, public dialogue is focussed on a policy relevant topic and can help shape that policy (Sciencewise, 2013). It is intended to be a two-way conversation between publics and scientists and policy-makers, conducted early in the policy process “to find out people’s hopes, fears and aspirations about potential new areas of science and technology” (Prikken & Burall, 2012: 7), and allow time for these concerns to be incorporated into the decision-making process (Sciencewise, 2013).

### Features of public dialogue

- **Informed** – participants are provided with information and access to experts;
- **Two way** – participants, policy makers and experts all give something to and take something away from the process; dialogue is neither solely about informing the public nor extracting information from them;
- **Facilitated** – the process is carefully structured to ensure that participants receive the right amount and detail of information, a diverse range of views are heard and taken into account and the discussion is not dominated by particular individuals or issues;
- **Deliberative** – participants develop their views on an issue through conversation with other participants, policy makers and experts;
- **Diverse** – participants tend to be recruited to ensure they represent a diverse range of backgrounds and views (participants are not self-selecting);
- **Purposeful** – dialogue engages the public at a stage in a decision-making process where the policy can be affected;
- **Impartial** – public dialogues are often convened, designed, delivered and facilitated by independent individuals or organisations to help ensure the process is not biased in favour of a particular outcome;
- **Expansive** – public dialogue opens up conversations rather than closing them down.

*Figure 4-1: Features of a public dialogue* (Source: Sciencewise, n.d.)

Public dialogue, therefore is not about public consultation on a set of agreed plans or proposals, when the public can have limited input into the decision-making process, but is early public engagement on new or novel policies or technologies when informed deliberation can make a contribution to policy (Sciencewise, n.d.). Public dialogues therefore do not aim for widescale public input, but instead focus on engaging a relatively small number of citizens to generate a high level of discussion and outputs (ibid.).

These principles of public dialogue have guided the Dialogue project reported in this thesis. The dialogue workshops were intended to discuss ORE, novel technologies that have yet to be widely deployed in Scotland's seas. The Dialogue did not discuss plans for any particular ORE project, but instead considered how ORE projects in general might socially impact the coastal communities in which projects are developed. The Dialogue involved detailed, considered two-way discussion between a small group of the 'lay' public who are not otherwise involved in ORE or other decision-making processes, and Scottish Government policy-makers. This two-way conversation was conducted at a time when ORE and marine

In sight and in mind: social implications of marine renewable energy planning was being actively developed, and expressly designed for the public participants to have input into policy formulation.

Following this outline of the concept of public dialogue I now introduce the background to the Dialogue project.

#### **4.2.2 Background to the Dialogue**

In early 2014, my supervisor, Dr Haggett, and I were invited to meet with members of the Scottish Government who wanted more information on the social implications of marine planning and ORE development. As previously mentioned in Chapter 2.1, they recognised that there was a gap in the existing approaches to marine planning and were keen to better understand how marine policies affect local communities and to develop methodologies to capture the social impacts of marine plans. Together, we briefed them on our understanding of this topic, and on invitation wrote a widely distributed briefing paper (Howell & Haggett, 2014). We were then invited to assist and advise them with a public dialogue project that they were due to commence. Building on the briefing paper, the public dialogue project aimed to investigate the social impact of ORE and inform the creation and implementation of methods to capture this.

As this unexpected but highly valuable opportunity arose to align my research with the needs of policy makers and directly inform active policy making I decided to fully embrace it. The opportunity to gather additional data from the public dialogue workshops was very welcome and I involved myself fully in this project. It was from here that I was invited to advise the Scottish Government throughout the public dialogue project and to gather data from the Dialogue workshops to help inform the Government's analysis and understanding of the data and findings.

This agreement was reached as the Government felt that they needed more academic support to assist them with developing new methodologies and materials in their work on social impacts. They were therefore keen to have the assistance of Dr Haggett and myself. I was involved as an observer and advisor to the Government throughout the project from the initial tendering, the design and running of the workshops, to the final report writing. It was intended that having our support and advice would assist the Government in ensuring that the project was designed and conducted as effectively as possible. Furthermore, we could provide additional ex-post analysis and evaluation of the findings that would help the

Government take forward the learning from the project and apply it to their work in the long-term. Our collaboration on the Dialogue was therefore envisaged as the beginning of an ongoing association. I was therefore given permission to observe and record the Dialogue as part of my PhD.

The Dialogue was commissioned by the Scottish Government in September 2014 in order to fill an identified gap in marine planning: the assessment of the social impacts of ORE. The Dialogue set out to converse with Scottish publics about plans for offshore renewables and how these might affect coastal communities around Scotland. A competitive tender process was run to select a contractor to deliver the project, and I advised the Government throughout the tendering process. Bids were received from potential contractors outlining how they proposed to run the Dialogue in order to gain new insight into the social impacts of ORE. I assisted the Government in evaluating the bids and an independent consultancy was appointed to run the project in December 2014.

The Dialogue events were organised, designed and run by the independent consultancy firm. At each stage of the project I assisted the Government in appraising the work of the contractor and suggesting improvements. I attended each Dialogue workshop to observe and record data but did not have a formal role in running the workshops. During the workshops I made detailed written notes of the participants' comments in my notebook. I took photographs of all the materials the participants produced during the workshops. The contractor recorded all of the data separately and utilised this in their project report. The data that I collected has been analysed independently and presented in this thesis.

### **4.2.3 The Dialogue workshops**

The workshops were designed to stimulate a broad conversation with the participants about the types of impacts that they thought the development of ORE might bring about. Following the UK Government's approach to public dialogue (POST, 2001) outlined in 4.2.1, the workshops were not a consultation with local people about particular developments in their area, but rather were designed to consider the development of ORE in Scotland in general. The Dialogue did not seek consensus or approval for any particular plans or to talk with people about their own specific community, but set out to talk to a spread of publics across the country about what they value, what is important in a community, and how impacts might be felt in a generic ORE host community. The findings of the workshops were

In sight and in mind: social implications of marine renewable energy therefore intended to be generalisable and not specific to each location. In particular, the Dialogue set out to understand in more detail the types of social impacts that, as I outlined in 2.2, are not currently captured in socio-economic impact assessments. Further, in line with the principles of public dialogue, outlined in 4.2.1, the Dialogue was conducted early on in the marine planning policy cycle so that the results could be used to inform policy.

There were six dialogue workshops held in communities around Scotland. Five of the workshops were held in coastal communities drawn from a selection of the eleven Scottish marine regions introduced in Chapter 2.1 (Figure 2-1). The sixth and final workshop was hosted in a central location. The first workshop was held in the Orkney Islands marine region in March 2015. The subsequent workshops were held on consecutive Saturdays in June and July 2015 in the Argyll, Moray Firth, Solway, and the Forth and Tay marine regions, and then finally in the central location.

At the request of the project funder, the final inland workshop was held to validate and compare the results from the coastal communities with an inland community. The workshops aimed to set up a generic dialogue about the issues that may affect all coastal communities. The inland event was therefore a control to ensure that the process was generic enough to work effectively in any community, not just a coastal community.

As stated in Chapter 2.1, the Government is developing regional marine plans for each of the eleven Scottish marine regions. Each marine plan is to be specific to the area so research in each region was necessary to inform each plan. The Orkney Islands marine plan was scheduled to be the first to be produced in 2015, and the Orkney Islands workshop was thus conducted first to allow the workshop findings to feed into it.

The workshop locations (Table 4-1) were selected by the Government based on their experience of working in these regions. They were selected for a geographical spread, for logistics of travelling to and organising the workshop in each location, and to visit communities where it was felt that prior community engagement by the Government had been lacking. There was thus a decision to conduct the workshops in smaller locations in each region rather than the regional centre. The locations differed in terms of their size and socio-demographics. Two workshops were held on islands, one in the Highlands, two in the Lowlands, and one inland.

**Table 4-1: Characteristics of workshop locations**

<b>Region</b>	<b>Location</b>	<b>Population</b>
Orkney Islands	Town	9293
Argyll	Island	3228
Moray Firth	Village	764
Solway	Town	10593
Forth and Tay	Town	16900
Inland central area	City	591620

Each event was held on a Saturday to allow maximum opportunity for a representative sample of local people to attend. The events ran from 9:30am to 4pm (Table 4-2) and were held at a local venue such as a church hall or community centre. Participants were recruited by a professional recruiter to be gender balanced and to include a spread of ages, employment types, and education levels. Participants were paid £75 at the end of the event for their participation. There were between 13 and 18 members of the public in attendance at each event, in total 95 people attended the six events. Each workshop was facilitated by the contractor and representatives of the Scottish Government were present to provide information about, and answer participants' questions on, the plans for ORE in Scotland.

The bespoke and novel workshop process was designed by the contractor to elicit participants' ideas about the likely social impacts arising from offshore renewable energy developments. The workshop utilised a range of visual materials designed and produced by the contractor. This workshop process and associated materials were proposed by the contractor in their initial tender and the contractor was ultimately selected on the strength of this methodology which was deemed to best address the research question. The final process was arrived at following feedback from the Government team and me, but ultimately belonged to the contractor.

**Table 4-2: Dialogue workshop schedule**

<b>TIME</b>	<b>ACTIVITY</b>
<b>09:30</b>	Registration, tea & coffee, sticky dots, postcards
<b>10:00</b>	Introduction to the day
<b>10:25</b>	What's important to you - concentric circles exercise
<b>10:40</b>	Building the community - mapping the things that are important to you
<b>11:15</b>	BREAK
<b>11:35</b>	Presentation to introduce offshore renewable energy technologies
<b>12:00</b>	Imagining futures with offshore renewable energies – generic scenario
<b>12:30</b>	LUNCH
<b>13:15</b>	Imagining futures with offshore renewable energies - offshore wind scenario 1
<b>13:50</b>	Imagining futures with offshore renewable energies - offshore wind scenario 2
<b>14:20</b>	BREAK
<b>14:30</b>	Imagining futures with offshore renewable energies - tidal scenario
<b>15:00</b>	Plenary reflection on the scenarios, sticky dots
<b>15:30</b>	Engaging with the Scottish Government
<b>15:45</b>	Conclusions and next steps
<b>16:00</b>	<b>CLOSE</b>

In sight and in mind: social implications of marine renewable energy

The workshop design was centred on eliciting participants' responses to three ORE scenarios. Participants were divided into two groups, each with its own facilitator to lead the exercises and a Government representative to answer questions. The opening workshop activities involved getting the participants to consider the things that they valued in their life and their community in order to get them thinking about how these might be impacted by ORE.

During the workshop registration participants were given a postcard on which to write down their favourite place and explain why it was special to them (Figure 4-2). They were also given three sticky dots to place on to three posters on the wall asking their initial feelings towards offshore renewable energy (Figure 4-3). At the end of the day the participants were given three differently coloured sticky dots to place on the poster to see if opinions had changed during the day.

In the first group exercise participants were asked to write or draw what was important to them in their community on a sheet of paper. The paper had three concentric circles with the most important things to be put in the middle (Figure 4-4). This was followed by a short group discussion about what people value in their lives.

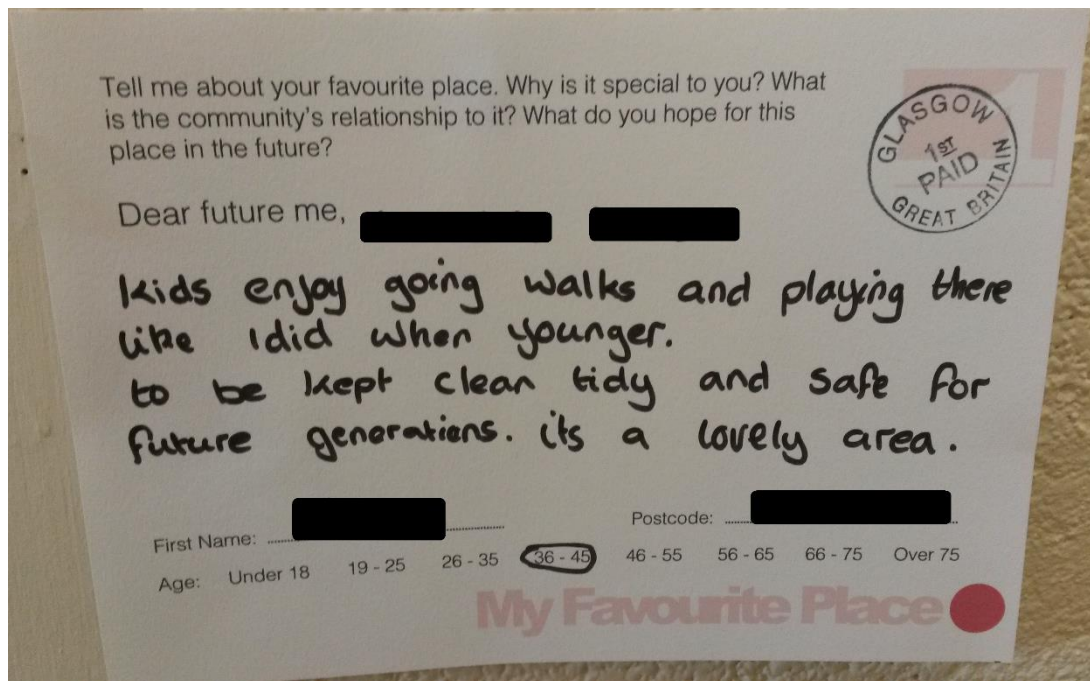


Figure 4-2: Example of a postcard

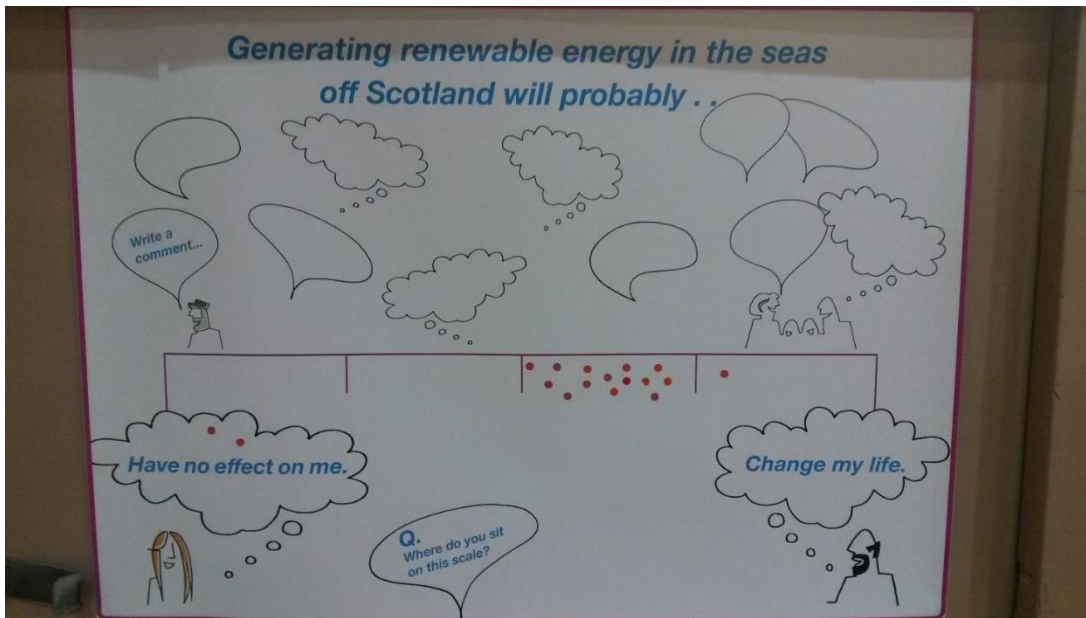


Figure 4-3: Example of a sticky dots poster

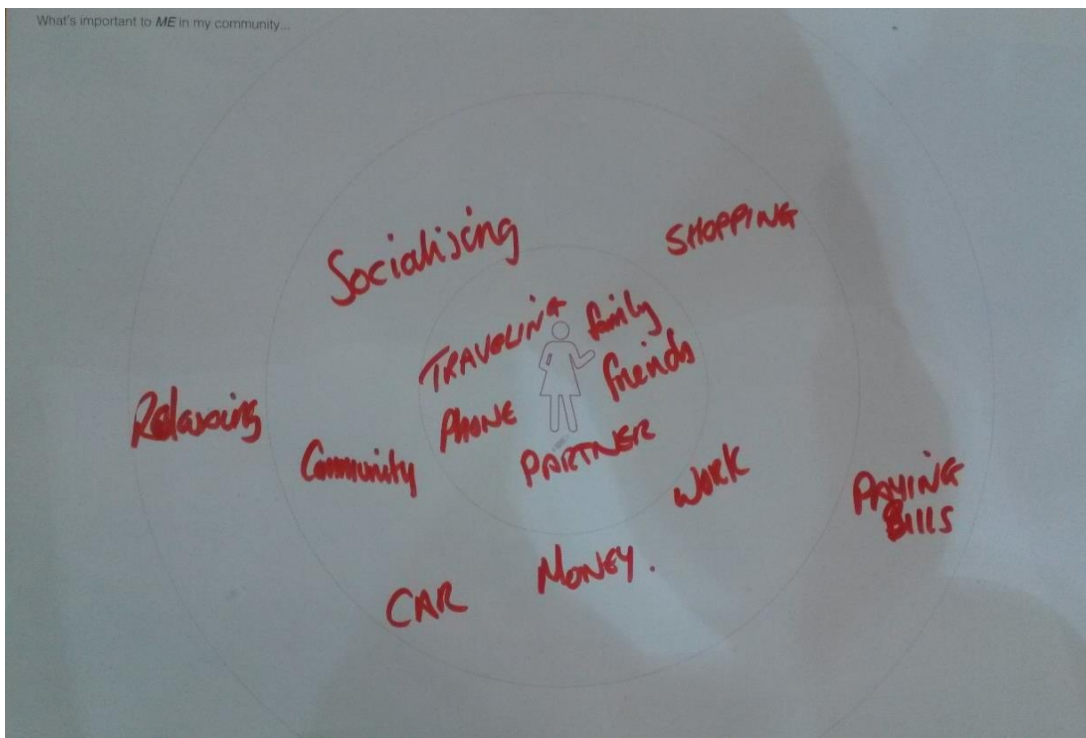


Figure 4-4: Example of concentric circle exercise

To start the scenario evaluation each group was presented with a map of a generic coastal town along with a series of colourful icons that could be placed on the map in order to shape discussion with participants about social impacts. The icons represented amenities, infrastructure, resources and landmarks, and each group worked together to place on the

In sight and in mind: social implications of marine renewable energy map the icons that they considered would be important to the residents of the town (Figure 4-5). This map and icons were the central part of the novel and bespoke deliberative methods designed by the contractor.



**Figure 4-5: Example of map of generic town and icons used in workshop**

Having identified what was important to them, and having represented these factors visually on the map, the groups then considered the impacts that they thought ORE developments near the town would have on its residents. Three specific ORE scenarios were presented and discussed along with an initial generic scenario (Figure 4-6, Figure 4-7, Figure 4-8 and Figure 4-9). These scenarios were developed by the Scottish Government and represented their best understanding of the type of ORE projects that could be developed in Scotland. Each scenario was discussed for approximately thirty minutes. Additional icons were available to visually represent on the map the infrastructure that would be created by the developments. These included the wind and tidal turbines, substations, transmission cables, and marine traffic.

The first scenario was a generic scenario introducing the type of activity that would be attributable to all offshore renewable energy developments e.g. road and marine traffic, transmission cables, new substations. The first offshore wind scenario detailed a 75-turbine array, with a 450MW generating capacity, located 14km offshore. The second wind scenario was an 85-turbine array, with a 500MW generating capacity, located 24km offshore. The tidal scenario consisted of a 10-turbine demonstration array, with a 10MW



In sight and in mind: social implications of marine renewable energy generating capacity, and located 1.5km offshore. Each scenario detailed the size of the marine area taken up by the array, the supply chain it required, the employment it would create, and the activities associated with its installation, and operation and maintenance.

After completing the appraisal of all the scenarios, the two groups summarised their responses to each scenario and compared their ideas. Finally, they were asked how the Scottish Government could better engage with people such as themselves in the future.


Having outlined the workshop process, I conclude this section with some reflections on the methodology.

**Generic Scenarios**  
 Regardless of the type of offshore renewable development, they are likely to share the following common features.


**Survey Activity**  
 Before a project can be developed, during and after construction of a project, there will be many different types of surveys and monitoring carried out. This activity will involve specialists coming into an area for different amounts of time. There will be increased vessel traffic and possibly aerial surveys.

Picture 1 – Aerial survey flight.  Picture 2 – Survey Vessel 

**Marine and Onshore Cable laying**  
 To connect an offshore renewable site to the national grid you need cables to be laid offshore, with an onshore connection. The amount of cable required will depend on where the development is. There are different methods for laying cables offshore, burying them or sitting them on the sea bed. Onshore cables are buried.

Picture 3 – Offshore Cabling  Picture 4 – Onshore Cabling 

**Increased Vessel traffic.**  
 During the different phases of development of an offshore renewable site, there will be more vessel activity. This will intensify during the construction phase.

Pictures 5 & 6 – Installation vessels 

**Generic Scenarios**

**Onshore Substation**  
 Onshore substations contain all the electrical equipment needed to allow the energy to flow from the offshore renewables energy site into the national grid. An electrical substation takes electricity from a very high voltage and lowers it to the voltage we use in our homes & businesses. Transformers 'step down' the electricity from the high voltage needed to economically transmit the electricity.



**Increase in the number of people in a community & use of community facilities.**  
 It will take many people a significant amount of time to build an offshore renewables development, especially larger projects. These people need somewhere to stay either in the short / medium to long term. People moving in may bring their families. Any offshore renewable development will bring in new people to an area but overall numbers will vary. New people living in an area will make use of local facilities including public transport, healthcare and shops so increasing their overall use.













**Increase in Transport Activity.**  
 All offshore renewables development is likely to increase coastal transport activity. There are likely to be deliveries of materials required so increasing the number of vehicles on the road.



Figure 4-6: The generic offshore scenario given to workshop participants

In sight and in mind: social implications of marine renewable energy

Detailed Scenarios Offshore Wind – Scenario 1		
Description		Scottish Content
Distance from shore	14Km	X 2800 50m swimming pools from shore 
Power Generation	450MW	
Number of devices	75 turbines in the array.	X 350 000 
Area taken up	90 km2	X 75 
Supply Chain	Some Scottish content mainly in supply of foundations and substation components. Vessels using Scottish ports to fuel and restock. Blades, Towers & Cables imported from outside Scotland.	X 12605 X75 bases X1 onshore substation Using Scottish stores 
Installation	Some storage facilities required at Scottish port. All main components shipped and installed from outside Scotland using non-Scottish Vessels	Large storage area required 
Operations and Maintenance (O&M)	Local Base with helicopter pad, helicopter and small vessel capabilities all newly developed. Project Management carried out at the local Scottish base.	X1 helicopter  X1 small ship 
Employment	800 Jobs across development, installation and maintenance over half to Scottish based workers.	X1 new office  X 400 jobs 

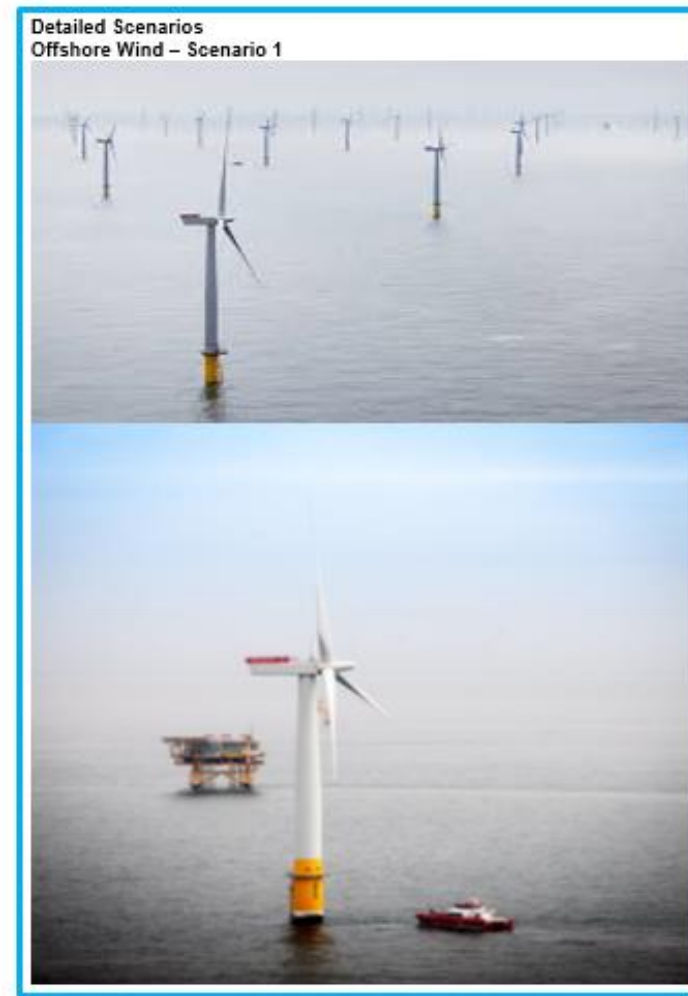









Figure 4-7: Offshore wind scenario 1 given to workshop participants

In sight and in mind: social implications of marine renewable energy

Detailed Scenarios Offshore Wind – Scenario 2		
Description		Scottish Content
Distance from shore	24Km	X 480 50m swimming pools from shore 
Power Generation	500MW	X 390 000 
Number of devices	85 turbines in the array.	X 85 
Area taken up	100 km2	X 14005 
Supply Chain	All components imported. All operations carried out by mother ship from outside Scotland. Small Scottish vessel transiting using Scottish port. Blades & Towers from outside Scotland.	X1 vessel 
Installation	No storage required all materials imported using non Scottish Vessels from outside UK. Vessels returning to home port for stores. Little interaction with local community.	
Operations and Maintenance (O&M)	Small Local Base with small vessel capable of transiting to site for emergencies. All project management carried out outside Scotland. O&M carried out from static platform supplied by mother ship operating out of another country.	X1 small ship 
Employment	900 Jobs across development, installation and maintenance, only small proportion Scottish jobs.	X 100 jobs 

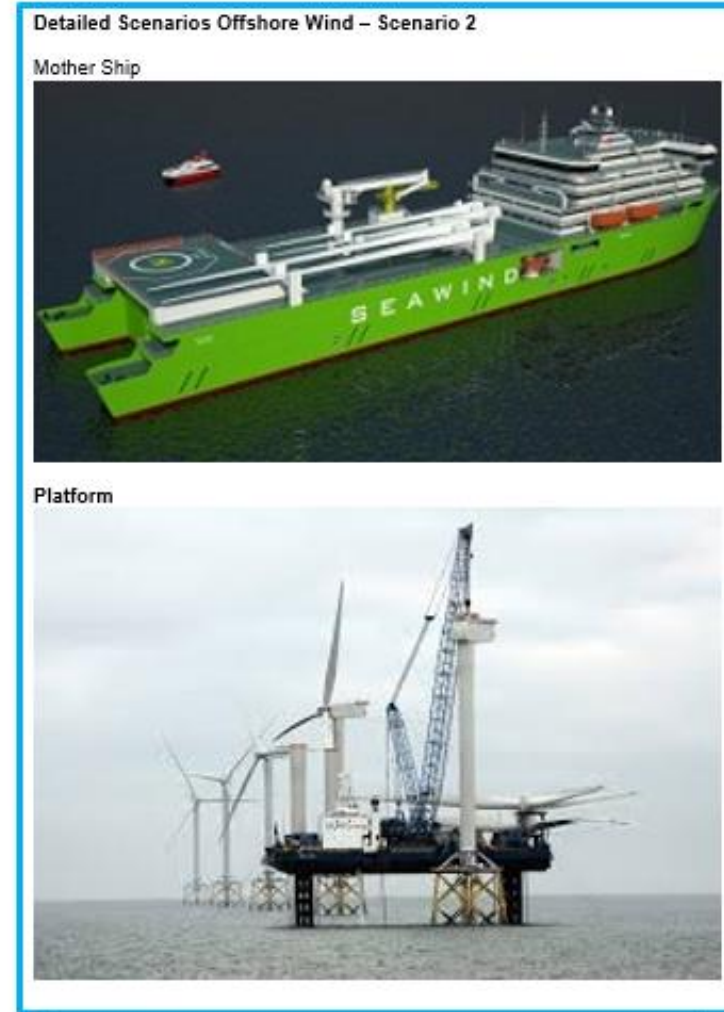


Figure 4-8: Offshore wind scenario 2 given to workshop participants

In sight and in mind: social implications of marine renewable energy












Detailed Scenarios Offshore Tidal – Scenario 1		
Description		Scottish Content
Distance from shore	1.5Km	X30 50m swimming pools from shore 
Power Generation	10MW	
Number of devices	10 turbines in the demonstration array.	X 22950 
Area taken up	0.25 km2	X 10 
Supply Chain	Turbine (Nacelles and blades) manufactured outside Scotland. Turbine assembled in Scotland. Substructure manufactured in Scotland. Electrical components imported. Scottish vessels used. Scottish Transportation.	X35 X10 turbines assembled X1 vessel for deployment X10 substructures X2 lorries 
Installation	Storage required after assembly before installing at port. Scottish Vessels used. Local port infrastructure improved.	Local storage area required  Improved Harbour  Scottish Vessels 
Operations and Maintenance (O&M)	Local O&M Base with small vessel capable of transiting to site and occasional helicopter access. All project management carried out locally.	X1 small ship  X1 new office 
Employment	200 Jobs across development, installation and maintenance, A least half Scottish jobs.	X 100 jobs 



Figure 4-9: Tidal energy scenario given to workshop participants

#### 4.2.4 Reflections on the Dialogue workshops

The workshops were very effective at getting members of the public together to discuss ORE and the impacts that it might have on communities. The recruitment strategy and payment of incentives enabled 'lay' members of the public to attend the workshops and discuss a topic about which they previously knew very little. The views and opinions recorded during the workshops are very important as they represent the 'general public' rather than specific stakeholders, and accordingly are voices that are not usually heard in the planning and consultation process.

Through the novel and bespoke workshop design, and the deliberative nature of the process and discussions, rich qualitative data on participants' responses to the ORE scenarios were captured. These data reveal a range of responses to the scenarios and the thinking that underpinned these responses.

Due to the deliberative process, the workshops were focussed on depth of data with the discussions kept fluid to enable the facilitators to probe into the issues that participants raised. The workshops consequently provide a valuable insight into the range of social factors that matter to publics and communities around the coast of Scotland, along with the range of responses that may occur to ORE developments. The workshop process and materials were designed to encourage participation and stimulate discussion amongst the participants. To this end they were successful, but there were however some limitations to the workshop which have to be noted.

Each workshop followed the same schedule and utilised the same number of facilitators and Government representatives. The facilitators and representatives, however, did vary between workshops, which were located in different communities with different characteristics. The discussions at each workshop, and even at each table in the same workshop, were therefore unique. Caution must therefore be exercised in comparing findings across the workshops. Indeed, the design of the workshops around a generic town, and including an inland workshop location, was to increase the generalisability of the results by getting participants to think about the generic town they created on the map rather than their own community. Participants, however, found it very hard to think about the generic town and kept referring to their own place. Much discussion of the scenarios was in relation to their own community rather than the generic community on the map.

As each group was quite large, with up to nine participants, some participants were peripheral to the discussion, which was often dominated by two or three voices. The discussions and subsequent data may therefore be skewed by these dominant voices.

The primary aim of the workshops was to identify new understanding of the social impacts that might arise from the scenarios and how these might be felt by communities. Whilst the workshops were successful at developing discussion and collecting data on participants' responses to the scenarios, they were less successful at generating discussion and data around social impacts. Much of the participants' discussions in the workshop focused on the appraisal of the scenarios and comparing and contrasting each one. The discussion routinely struggled to focus into considering how each scenario might affect the community and understanding the importance and significance of social impacts and how specific impacts manifest and affect people on a personal and emotional level.

Some other limitations with the materials themselves may have also unconsciously influenced the participants and inadvertently served to steer the discussion into particular directions. The workshops were designed to move beyond standard quantitative socio-economic impacts to explore more subjective qualitative social impacts. Nonetheless, the scenarios highlighted the number of jobs that would be created and the Scottish involvement in the supply chain. This may have contributed to the substantial focus on jobs that occurred in participants' appraisal of the scenarios.

Similarly, the icons that were provided to participants may have led them to consider the infrastructure, landmarks and activities that were represented on the icons in their discussions. The icons may therefore have led participants to focus on particular infrastructure and land and marine space usage that they may not have otherwise considered themselves. The initial values exercise primed participants to think about things and people that were important to them and this may have had implications for the conversations that followed as priming has been shown to influence subsequent narratives (e.g. Bless et al., 1993; Wang & Ross, 2005; Sheldon et al., 2011).

In this section on the Dialogue I have introduced the workshop process, how it was developed and discussed its limitations. The findings from the workshops are presented in Chapter 7. Before that in the next section of this chapter I introduce the Island research component.

## 4.3 The Island

The second component of my research was fieldwork that I conducted on a Hebridean Island. The Island is a case study through which I explore the social implications of MRE. In order to protect their anonymity, I do not state the name of the Island and the names of the villages and people on the Island have been changed.

I employed ethnographic research methods to build relationships with Islanders and observe community activities and develop a detailed account of Island life in relation to MRE. I became an active participant in local coastal rowing, sailing, and community gardening organisations. I further attended other social community events including church, toddler group, soup and pudding lunches, and agricultural shows, as well as community consultations related to energy and community planning. Through this research I built up a picture of the many factors through which MRE is socially constructed on the Island.

This section is divided into four parts: I start by introducing the ethnographic method used on the Island. Secondly, I then discuss the background which led to the selection of the fieldwork location and introduce the Island and specifically the villages where I was based that is helpful for understanding the case study and how the fieldwork was conducted on the Island. Third, I outline my research activities on the Island describing in detail how I collected data on the Island, before finally reflecting on this fieldwork and methodology.

### 4.3.1 Ethnography

From the outset of the PhD project I intended to conduct ethnographic research in a potential host community for marine renewable energy. This ethnographic approach was selected in order to understand the way responses are socially constructed in a place. As Wiersma & Devine-Wright (2014) conclude from their review of the literature, qualitative methods, including ethnography, have been seldom used, if at all, in the context of ORE or MRE. Research using this innovative approach was therefore required in order to provide a richness of data that was currently missing from the literature (Wiersma & Devine-Wright, 2014; Kerr et al., 2014).

In Chapter 3.1, I set out the case for adopting a relativist, social constructionist approach. This approach recognises that climate change (Hulme, 2010), renewable energy planning

In sight and in mind: social implications of marine renewable energy (Walker et al., 2010) and the physical environment (Greider & Garkovich, 1994) are all socially constructed as people talk, write and argue it. Accordingly, I adopted an ethnographic strategy of enquiry as this form of research is appropriate when taking this ontological position that words, spatial phenomena, and social organisation form and shape the social world and the researcher wants to understand how the social world is produced (Mason, 1996). Ethnographic research methods are the most effective way to understand these complex issues and explore how specific social phenomena are constructed (Agar, 1980).

#### **4.3.1.1 Principles**

Hammersley & Atkinson (1995: 1) describe ethnography as a set of methods which in its most characteristic form “involves the ethnographer participating overtly or covertly in people’s daily lives for an extended period of time, watching what happens, listening to what is said, asking questions - in fact, collecting whatever data are available to throw light on the issues that are the focus of the research.”

Walsh (2004) outlines three ways in which ethnography is distinct from other types of qualitative research. First, there are no distinct stages of theorising, which means that “the research process is one of a constant interaction between problem formulation, data collection and data analysis” (Walsh, 2004: 228). Ethnography is thus inductive with emergent theory and research design being continually evaluated based on emerging data. Ethnography is therefore closely associated with ‘grounded theory’ which emphasises the inductive generation of theory from data (Glaser & Strauss, 1967).

Accordingly, I did not commence my Island fieldwork with a predetermined hypothesis on which factors informed social responses. Instead, I set out to explore the research questions posed in Chapter 1.3 through open and inductive enquiry, to identify the range of social responses that exist and the factors that inform them. I started with an empty notebook and observed and recorded events and conversations. Through this emerging data I began to develop ideas for what the key factors around social responses to MRE were and then began to probe these emerging themes in more detail.

The second distinct feature of ethnography is that it utilises a variety of techniques of inquiry in order to “observe things that happen, listen to what people say and question people in the setting under investigation” (Walsh, 2004: 228). Doing ethnography can

In sight and in mind: social implications of marine renewable energy therefore involve any qualitative methods of inquiry that seek to provide a detailed, in-depth description of everyday life and practice. This can include participant observation, formal and informal interviewing, and the collection and analysis of documents and artefacts. I utilised all of these techniques during my Island fieldwork and set these out in more detail in the fieldwork activities section 4.3.3.

Participant observation involves immersing oneself into a culture in order to intellectualise and write about what you see and hear (Bernard, 2006). Gray (2009) states that “observation is a complex combination of sensation (sight, sound, touch, smell and even taste) and perception”. Gold (1958) notes four participant observer roles that the researcher can adopt whilst conducting fieldwork: complete participant; participant-as-observer; observer-as-participant; complete observer. The complete participant, or covert researcher, can raise ethical questions, while the complete observer role does not involve meaningful interaction with people (Bryman, 2008). Much participant observation then involves the second and third roles, with participant-as-observer often favoured as it can lead to greater integration.

This point was highlighted by Wall & Stasz (2010) in their account of observational research with a group of women in the Appalachians. Initially, as observer-as-participants they had struggled to build rapport with the women during their quilting sessions as they sat to the side and observed. However, once they became participants in the quilting sessions and the women showed them how to quilt and passed knowledge from masters to novices, it became much easier to engage with the women and develop a meaningful research relationship.

This research aimed for the greatest possible engagement with community members and therefore throughout my Island fieldwork I tried to participate in as many activities as I could. Attending certain events, such as Church, it was only possible to adopt the observer-as-participant role, but through my rowing, sailing and gardening activities, outlined in section 4.3.3, I took the participant-as-observer role. Through this active involvement in hands-on group activities, particularly in my role as a novice boat builder, rower, sailor and gardener working with and learning from experienced masters, I was able to build closer rapport with community members and establish a situation in which group members could hopefully forget I was an observer at all.

Walsh (2004) notes that the third distinct feature of ethnography is that the researcher is the primary research instrument. It is the researcher who accesses the field, establishes field relations, conducts and records interviews and observation, writes field notes, analyses the data, and finally writes up the research. Similarly, Gray (2009) believes that the value of the observation method is that it enables the researcher to interpret the 'meaning' of people's attitudes and behaviours. The drawback of this though is that the researcher's interpretation could be influenced by their own values, motivations, prejudices and emotions and that this can lead them to see what they want to see (ibid).

Conducting this independent research where I was alone in the field, and back at home writing up this thesis, I certainly attest to the primacy of the researcher in ethnography and elaborate on these pressures and potential biases in section 4.3.4. The strength of this inductive ethnographic research is that I have been able to interpret social life on the Island and carefully consider its implications for MRE in ways that would not have been possible solely relying on direct questioning of community members without spending extended time in the community.

#### **4.3.1.2 Practical considerations**

Alongside the principles of ethnographic research, it is also important to consider the practicalities of conducting ethnography. In order to undertake participant observation it is first necessary to gain access to the group of people the researcher wishes to study (Hammersley & Atkinson, 1995; Bryman, 2008). In his study of a *Street Corner Society*, Whyte (1955) famously documents the difficulties that he initially had gaining access into the inner-city neighbourhood that he wished to study until he found a 'gatekeeper' who was able to facilitate his research.

Ethnography commonly relies on a gatekeeper and key informants who can provide information and also help the researcher in uncovering additional information and contacts (Hammersley & Atkinson, 1995). However, drawing too heavily on one individual or even a small group of informants can mean that the researcher begins to interpret events through the eyes of these informants rather than through the society or community at large (Bryman, 2008). Whilst ethnography is focussed on gaining detailed information from a small subset of the population, Agar (1980) stresses the importance of talking to a representative sample to avoid biased and unrepresentative findings.

As well as initially gaining access to a community, ethnographic research involves establishing and maintaining relationships with people in the field. This requires ethnographers to consider what roles they adopt in the field and how they manage relations with people on an ongoing basis in order to develop trust and acceptance (Hammersley & Atkinson, 1995). Goffman (1956) contends that personal interaction is a performance in which individuals present a 'front' in order to ensure that others view them as they wish to be perceived.

Upon entering the field, I actively participated in community projects and events in ways that I hoped would enable me to build relationships with community members and allow them to forget that I was an observer at all. At the same time it is of course necessary to maintain analytical distance and avoid bias from 'going native' or developing 'over-rapport' (Hammersley & Atkinson, 1995). A researcher should therefore strive for a position as a 'marginal native' (Freilich, 1970). Finding this balance was an ongoing challenge for me as I built up rapport with community members and affection for the place which had become my new home.

Research ethics are another important practical consideration for ethnographers, especially when utilising a research strategy that attempts to actively build rapport with groups of people to the extent that they can forget the new member of the group is a researcher (Thorne, 1980; Hammersley & Atkinson, 1995). It is important to gain informed consent from the people being studied but in an ongoing inductive research project such as mine this can be tricky as it is not always clear at the outset what exactly consent is being sought for. Hammersley & Atkinson (1995) therefore contend that the ethics of ethnographic research are context specific and that ethnographers must be reflexive to determine what is appropriate in each pursuit of inquiry.

One challenge that I faced in this regard was determining which community members did and did not wish to participate in my research, and then conducting observation and interviews with consenting community members who were often found in the same locations, and side-by-side with non-consenting community members. Whilst some community members were very happy to talk to me about the community there were others who were not. Just as I as a researcher presented a 'front' in my 'performance' (Goffman, 1956), Islanders also presented a 'front' to me, and it was hard to gauge whether people did not want to participate but were too polite to openly refuse, or whether they

In sight and in mind: social implications of marine renewable energy were happy to participate but either did not know what information to give to me or did not want to discuss certain topics. I discuss this further in sections 4.3.3.1 and 4.3.4.1.

One final practical consideration is the decision on whether to anonymise fieldwork case study locations and this is a subject of ongoing and evolving debate in sociological research (Crow & Wiles, 2008). While it is agreed anonymity and confidentiality of participants is central to ethical social research practice, there is less agreement on how this should be done. Crow and Wiles (2008) identify practical considerations in deciding how to anonymise. There is a balance to be found between providing rich detail on a case study location and possibly compromising anonymity, particularly in distinctive case study locations such as islands which may be identifiable. There is also the consideration of whether the research participants and other people from the community wish their locale to be identified. As stated above, and as I discuss in 4.3.4.1, some Islanders did not want to participate in the research, and many Islanders feel aggrieved at the way their community has been portrayed in past research, and this also informed my decision on anonymisation. I decided not to name the Island or any Islanders and to use pseudonyms for the places on the Island out of respect for the people who did not want their community written about and to protect the anonymity of those who did openly share their thoughts and feelings with me. Moreover, whilst the Island may be identifiable to the reader, I have anonymised it in order to ensure as far as is possible that the individual villages and people on the Island are not identified. I particularly wanted to ensure that the data and quotations used in this thesis are not attributable or identifiable, particularly by other members of the community, to any individual Islander. Therefore, whilst I have described the Island in detail I have not named any individuals or provided photographs or images of people.

The principles and practical considerations of ethnographic research outlined here informed my Island fieldwork. As I explain in the next section 4.3.2.1, the selection of the Island as a case study location was in large part down to having a gatekeeper in place to provide access. Nonetheless, once installed on the Island, the importance of a gatekeeper became very clear, along with the difficulty of getting a cross-section of informants to provide data, as I discuss in my fieldwork reflections in section 4.3.4, as well as the challenge of getting beyond Islanders' 'front' to discover their real opinions on an issue. Following this introduction to ethnography I now outline the background which led to the selection of the Island case study site before detailing my fieldwork activities.

### **4.3.2 Background to the Island fieldwork**

Having decided to conduct ethnographic research in a potential MRE host community, the task was to find an appropriate community in which to embed myself to explore locals' responses to potential MRE project developments, and the social impacts that their development may have. In this section I introduce how the Island case study was selected before giving some contextual information about the Island which is helpful for understanding the research activities I undertook.

#### **4.3.2.1 Case study selection**

As outlined in Chapter 2, there had been plans for MRE projects in several locations around the Scottish coast. The most advanced projects were on the Orkney Islands, but these were also the most studied (e.g. Watts, 2012; de Groot & Bailey, 2016; Watts & Ross Winthereik, 2017) so this location was ruled out. Locations in the Inner and Outer Hebrides and Sutherland, which at the time of the research planning in 2014 were the next most likely sites to see projects developed, were thus preferred.

In the spring of 2014, as an assignment for my class on ethnographic research methods, I began a pilot fieldwork project with the Forth Coastal Rowing Club. The project aimed to develop my ethnographic research skills and also determine the feasibility for conducting this type of research with a group of marine space users.

Coastal rowing is a sport which has developed rapidly in Scotland, and around the world, over the last few years. It utilises a St Ayles skiff, a 22-foot, five-person rowing boat which is built and maintained by clubs (Figure 4-10). My participation in the rowing club proved to be a good way to conduct research locally, to make contact with marine space users and discuss a range of topics including responses to MRE, perceptions of the local environment, and wider community issues.

During each rowing session there was plenty of time to talk with other rowers as we met to prepare the boat for launch, during the rowing, and afterwards as the boat was put away again. The club element also led to social interaction away from the water. As a community-based sport, coastal rowing proved to be a great forum through which to embed myself into a potential MRE host community to conduct my ethnographic fieldwork.



**Figure 4-10: “St. Ayles Skiff off Anstruther, Scotland” by Peter Nisbet is licensed under CC-BY-3.0**

Throughout the summer months coastal rowing clubs around the country host regattas, and I was able to travel with the Forth Rowers to events around the Scottish coast. One trip the club took was to a regatta on the island of Islay. At that time, I was considering Islay as a potential fieldwork location as there were two tidal energy projects planned there. During the trip I was able to visit the sites of the planned projects and talk to those involved at the Islay Energy Trust, as well as participate in the rowing races and meet members of the local rowing club and community.

Another trip was organised by one of the Forth Rowers to his home village of Cearban in the Western Isles where plans were afoot to set up a coastal rowing club. This was in the same area where a large wave energy project was planned so I readily signed up to join the group going to ‘the Island’. The wave farm was planned to be deployed in the sea alongside land which belonged to the community-owned ‘North Estate’. During this trip to the Island, I visited the Estate to find out more about the wave energy project, and their own community-owned wind turbines.

A full programme of events was organised for the visiting rowers, and during the few days in Cearban I got a swift introduction to life on the west side of the Island. In between the

In sight and in mind: social implications of marine renewable energy rowing, we attended soup and pudding lunches and an evening ceilidh organised in the village hall, visited local sites of interest, and attended church on Sunday.

In this way, on both Islay and the Island, I began the inductive process of ethnographic fieldwork outlined in 4.3.1.1. Finding out about these locations, considering the key issues in each location and the practicalities of conducting fieldwork in these locations.

Having established that coastal rowing represented a good way to facilitate my research by gaining entry into a community, I was left with a choice between Islay and 'the Island' for my fieldwork location. Both places had coastal rowing clubs and firm plans for MRE projects which I had scouted out during my initial visits. Ultimately, I decided to return to Cearban and the Island as I had stronger contacts with the local rowing club and through this with other members of the local community which I anticipated would help facilitate practical issues associated with conducting ethnography like finding accommodation. I anticipated that these contacts would act as gatekeepers who could facilitate the completion of my ethnography and I believed that this represented the best opportunity to join up with a group of people who I could spend time with on a regular basis to conduct my fieldwork.

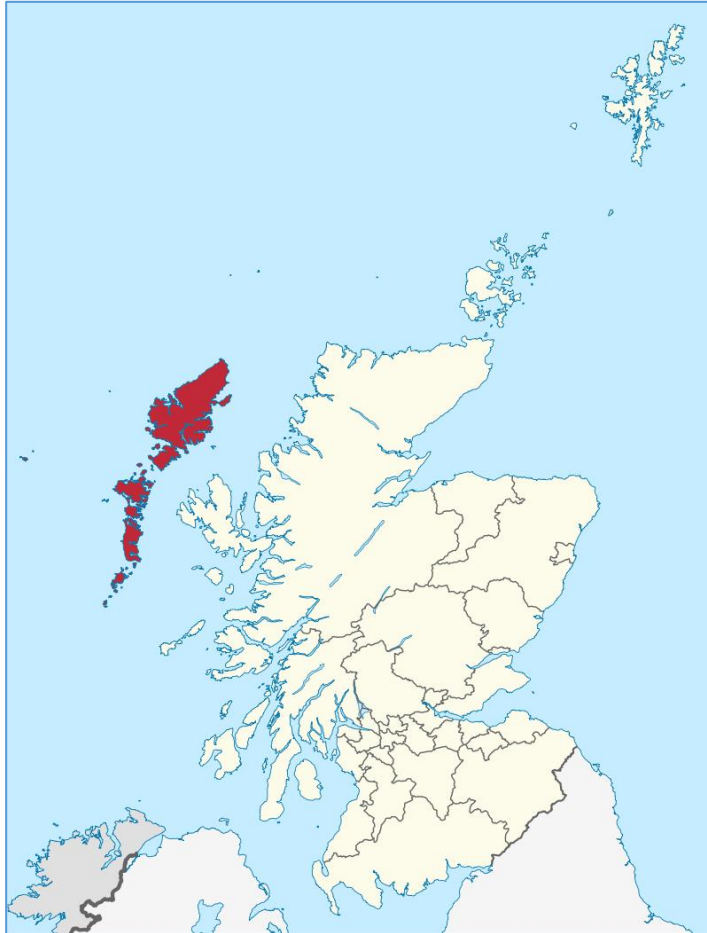
Having outlined how and why the Island was selected as a case study, I next step away from methodological considerations to describe the case study location. This background information is provided to give context to the specific research activities that I conducted on the Island which are presented in 4.3.3.

#### **4.3.2.2 Introducing the Island**

The Island is one of the islands in the Western Isles, also known as the Outer Hebrides, a chain of islands in the Atlantic Ocean off the northwest coast of Scotland (Figure 4-11). In Gaelic, which is still widely spoken in the region, they are known as *Na h-Eileanan Siar*, the Western Isles. The islands have had their own local authority area since 1975 and it was officially renamed from the Western Isles Council to the Gaelic *Comhairle nan Eilean Siar* in 1997. Accordingly, the Gaelic word *Comhairle* is often used to refer to the Council during conversation in English, and I do so throughout this thesis.

There are approximately 20,000 people living on the Island today, a decline of 17% since 1951 and more than 50% since 1901 (CNES, 2018) and outmigration from the Western Isles, particularly amongst younger people, is a recognised problem. The Western Isles have an

In sight and in mind: social implications of marine renewable energy ageing population with an average age of 48, seven years older than the national average, and more than 20% of the population aged over 65, an increase of 14% from 2001 to 2011 (CNES, 2018). Approximately a third of the population is located within the only large town on the Island. Whilst the population of the Western Isles is shrinking, the town is growing with new housing developments and migration from rural areas to the urban centre (ibid).



**Figure 4-11: “Na h-Eileanan Siar in Scotland” by TUBS is licensed by CC BY-NC 3.0**

The Western Isles are however an attractive place to live and consistently top quality of life surveys in the UK. Along with the Northern Isles, they have consistently been judged the best place in the UK to raise children according to the Bank of Scotland Children’s Quality of Life Survey (Gander, 2015). In 2016, the Office for National Statistics reported the Western Isles to be the happiest place in the UK, with high levels of self-reported life satisfaction and low levels of anxiety (Bulman, 2016).

The Island is a two- and half-hour ferry ride off the northwest coast of Scotland. The ferry arrives to the Town on the more sheltered east side. The interior of the Island is empty

In sight and in mind: social implications of marine renewable energy moorland with the population located around the coast. Driving the 10 miles of empty road across the moor leads to the west side, where a collection of villages run along the coast. It was one of these villages, Cearban, which I had visited the year previously and was home to the coastal rowing club, that was to become my base on the Island.

Cearban is divided into two parts, upper and lower. Lower Cearban is an old settlement going back hundreds of years or more, while Upper Cearban is a little more than one hundred years old and was established to provide land for families being evicted from other parts of the Island at that time.

The land in Cearban, as with most villages on the Island is divided into small parcels known as crofts. Crofting, the practice of subsistence farming on these strips of land, has been the traditional livelihood of members of the community (see Hunter (1976) for a history of crofting). In addition to their croft land, crofters traditionally utilised the sea for fishing and the moor for pasture. Each crofter has exclusive access to his or her own croft and to a share of the common grazing which is intended for use by all crofting shareholders. The common grazing is managed by the shareholders through a shareholder run grazing committee.

Crofts are laid out along the main road which runs parallel to the sea through the village and along a series of dead-end side roads leading from the main road seaward towards the bay or inland to the moor (Figure 4-12). There is a small bay with a sandy beach in the middle of Cearban (Figure 4-13), which has an access road from both the lower and upper ends of the village. There is a picnic area accessible from the Lower Cearban end, and a slipway for boat access at the Upper Cearban end. Behind the beach is a freshwater loch, separated from the sea loch by a narrow strip of land.

Cearban has a village hall, a primary school with a swimming pool, a post office, a church, a campsite, a fire station and a tweed mill. There is also an old church which had been used as a museum, but which during the time of my stay was closed and in need of repair. There is a community-owned wind turbine in Lower Cearban which belongs to the Lower Cearban Development Trust, who have their offices in the village's old pub. The revenues generated from the turbine are used by the Trust to invest in community development projects in the local area. It was funding from the Trust that paid for the skiff kit, and other essential materials and equipment, and allowed the rowing club to begin.



***Figure 4-12: "Upper Cearban looking towards the sea" by the author, July 2015***



***Figure 4-13: "View from the headland looking inland across the bay towards Cearban" by the author, May 2015.***

To the north of Cearban is the neighbouring village of Steall. Following the main road there appears to be a kilometre or so between the villages but in fact some of the last houses in Upper Cearban, are actually the first houses in Lower Steall. Steall has an automotive repair garage, a deli and takeaway business, and an old primary school building which was being turned into a community centre. Steall used to have more amenities, such as a post office and care home, but like the primary school they were all now closed down.

In many villages across the Island the primary schools have been closed in recent years. Some now lie vacant, some have been demolished for new houses, and some have been purchased by the community. The school in Steall was one to close with students now going to the school in Cearban instead. The Steall Community Trust, *Urras Coimhearsnachd Steall*, was set up to take ownership of the now empty school and was working to turn the building into a community hub, with a focus on maintaining Gaelic language and culture. With a temporary development officer in place the *Urras* was seeking funds to renovate the building and was organising regular community events such as coffee mornings, Gaelic classes, and after school art and music sessions for young people.

The Island is divided into a series of estates with each estate owned by a landlord. Crofters rent their croft from their estate for a nominal fee. As outlined in 2.1.4, land reform has led to a number of estates in the Western Islands being purchased from private landlords by the community. The 'Upper Estate' located at the northern end of the Island was bought by the community in 2006. Whilst I was on the Island, a community buyout of the 'Middle Estate', on which Upper Cearban is located, was completed bringing the land into the ownership of the community.

Upper and Lower Cearban are located on two separate estates with an unmarked estate boundary running through the village. This means that residents of the upper and lower village have shares in separate common grazings which are managed individually. As crofting has traditionally been organised around the common grazing, each side of the village is accustomed to managing their affairs separately.

A notable contemporary consequence of the separate grazings is the community-owned wind turbine which has been built by the Lower Cearban Development Trust. The turbine is located on the Lower Cearban common grazing and the annual revenues of approximately £300,000 that it generates for the community belong exclusively to the residents of Lower Cearban.

Having introduced the villages of Cearban and Steall which were my base for my Island fieldwork I now discuss the fieldwork activities that I undertook on the Island.

### 4.3.3 Fieldwork activities

In this section I outline the specifics of the research activities that I conducted on the Island. I adopted an ethnographic approach of spending a prolonged period on the Island to capture Islanders' responses to MRE projects, but crucially to also understand what factors informed these responses, and how MRE projects would impact the Island and its people. In total I was on the Island for eighteen months from March 2015 until September 2016.

In March 2015, ten months after my first visit, I returned to the Island with my wife, then 2 and ¾ year old daughter, and dog in tow and rented a holiday cottage in Upper Cearban. After having spent three months in Cearban I saw an advert for a maternity cover job at the College in the Town. I was fortunate to be appointed to the position and took the opportunity that this provided to remain on the Island for another year. The job was part-time, so I spent half of each week on my fieldwork. We decided that it would be better to move to the Town rather than stay in Cearban to remove the commute and give more opportunities for my wife and daughter who were feeling a bit isolated in the village. We relocated at the end of the summer and my daughter enrolled at a Gaelic medium nursery school on the edge of town.

Moving to the east side of the Island meant that I spent less time in Cearban and Steall, mainly returning for specific activities and missing out on day-to-day happenings. On the corollary, however, I became familiar with regular goings on in the Town; the political and economic capital of the Western Isles. This gave me a greater understanding of the wider Island and the decision-making that shapes it. My research thus naturally broadened from a focus on the village level to thinking more about the Island level.

Following the ethnographic principles of inductive research (Walsh, 2004) outlined in 4.3.1, I wanted to let the key themes emerge through the research rather than interrogate pre-determined themes and theories. I thus used participant observation along with the use of reflexive interviews to gather data on Islanders' relationships with the marine environment and how they viewed changes to it. These methods allowed me to both capture people's direct responses and use my own observations on the wider aspects of Island society and community that inform social responses to MRE and the social impacts of MRE projects.

At the start of my fieldwork my main focus was on meeting marine space users and I had come to Cearban specifically because I could get involved in the coastal rowing club. The

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rowing was my principal research avenue and its members became some of my primary informants. In addition, I engaged in activities with other marine based activities undertaken by the traditional sailing society based in the Town. Away from the marine based community groups, I also regularly participated in activities with the two main community groups in Cearban and Steall, the Lower Cearban Development Trust and the Steall Community Trust, *Urras Coimhearsnachd Steall*, observing and helping with their activities and meeting the people involved. These activities are discussed in 4.3.3.2 and 4.3.3.3.

As I involved myself in these community activities for this extended period, I was able to observe events, build up trust with people and gather data that would not have been possible otherwise. I observed community relationships, Islanders' interactions with each other, with the environment, and with authorities and decision-making processes to shed light on social responses to MRE projects on the Island and the social impacts that they could have. Just like Wall & Stasz (2010), I found that through active participation in these community activities, community members were more welcoming of me and keener to share their thoughts.

As well as participating in community activities I conducted one-to-one interviews with members of these groups and with people in the community that I came to know, as well as representatives of other organisations and businesses on the Island. These interviews were always reflexive in that I did not have exact questions and a sequence in which to ask them (Hammersley & Atkinson, 1995). I typically employed non-directive questioning (*ibid.*) which allowed me to get the interviewee talking about a broad theme. At the beginning of my fieldwork these interviews were important for finding out general concerns about MRE as well as gaining a better understanding of the Island. Subsequently, I used them to probe for more detailed information about certain topics that the interviewee was knowledgeable about, and for following up on ideas that I had developed following previous activities and interviews.

Following this introduction to my fieldwork activities, I now discuss in more detail the practicalities and ethics of my research and data collection methods followed by more details on the specific marine based activities and community-based activities that I undertook.

#### **4.3.3.1 Practicalities and ethics**

Upon the commencement of my fieldwork in Cearban I immediately joined the skiff building project as this had been arranged before I departed for the Island. I further met with the other contacts in the community that I had gained from the rowing club and from my visit the previous year. Through these contacts I was able to join the traditional sailing society and the Lower Cearban Development Trust's community gardening project. Undertaking these routine activities, going to the same places and meeting with the same people, allowed me to observe the activities over an extended period of time, to develop relationships with the group members, and better understand the community.

My research was not into a particular organisation or group of people as is common in ethnographic research. Instead I wanted to gather data on the range of social responses towards MRE that exist on the Island and therefore wanted to hear from a cross-section of Islanders. Whilst I conducted research within the rowing, sailing and community development organisations, my research was not directly concerned with the structure and dynamics of these organisations. I used them as a vehicle from which I could meet a cross-section of Islanders and explore my research themes.

These organisations did feature a mix of people but with only a handful of people participating I was only meeting a small percentage of the population. Agar (1980) believes that the people most open to talking to ethnographers are either 'deviants' or 'stranger handlers' and are therefore not necessarily representative of the population at large. I was therefore concerned that I was not meeting enough people to ensure a representative sample and avoid biased and unrepresentative findings.

Referring to ethnography conducted by Western anthropologists in non-Western indigenous societies Agar suggests that most informants have had contact with Western culture and occupy positions of authority in their society (Agar, 1980). It is therefore vital to trust that these people provide objective data (ibid.). Similarly, Bryman (2008) cautions that through close involvement with key individuals the researcher can lose analytical distance and objectivity and start to interpret events through the eyes of these informants.

I therefore wanted to be involved in as many as community activities as I could and speak with as many people as I could from across the community, but had to balance this with the importance of building trust with individuals through ongoing engagement. The way that I

In sight and in mind: social implications of marine renewable energy presented myself and the 'front' (Goffman, 1956) that I gave to Islanders was consequently important, particularly as it transpired that reaching out to other community members was not easy. As I discuss in 4.3.4.1 later in this section, I found Islanders to be friendly and hospitable, yet well practised at shielding their real opinions. Just as I as a researcher presented a front to the community, Islanders also presented a 'front' to me and I had a challenge in getting beyond this to understand what people really thought about an issue.

As expected, my initial contacts acted as 'gatekeepers' and helped me to meet more people in the community and this was highly valuable. However, as these contacts referred me to people that they thought would be good for me to talk I was conscious of getting led towards a certain type of person from within a certain social circle. Most of the contacts I was making were either incomers, or Islanders who had been away to live and work elsewhere before returning home to the Island, and in a way were akin to the stranger handlers in positions of authority with greater experience of outsiders that Agar (1980) suggests characterise informants.

I worried that if I missed out on hearing some voices then I was not getting a full picture of the range of responses that might have been present in the community. I therefore involved myself in as many activities as I could in order to make contact with people from as wide a spectrum of the community as possible. I attended all the community events that I could in Cearban and Steall, as well as public events in town that were related to my research themes of energy, community, and planning.

During these activities I had conversations with other group members and would ask direct questions of events and ideas that people recounted. Often though, the most valuable and interesting information came simply from listening to the conversations of others. I gathered information in this way that I would never have known or thought to ask about otherwise. The context of a natural conversation also meant that people would talk more openly than they perhaps would under direct questioning in a more formal interview. It was at these points that I felt sure that people were not presenting a 'front' to me and that the responses I gathered were genuine and more reflective of what people really thought.

Typically, when meeting a person for the first time I explained that I was doing research about what people on the Island felt about MRE. This would normally lead into a conversation about their views on renewable energy and I would try to let them lead the

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During my fieldwork on the Island I followed the approach recommended by Bernard (2006) and kept two field notebooks. The first was an activity log outlining what I planned to do each day, and what I ultimately did each day. This allowed me to plan my activities and keep track of how I completed them. In the second notebook I recorded the details of all these activities. If I was conducting an interview or at another event where I was free to write, I would write directly into the notebook during the conversation or proceedings. Often, however, I was digging, or sawing, or pulling an oar, so was not able to make notes at the same time. I would then record everything at the earliest opportunity afterwards.

An important part of my notetaking and inductive approach was ongoing analysis. In addition to direct field notes I would write research memoranda outlining ideas I had and how different observations and participant responses fit together. Hammersley & Atkinson (1995) describe such analytic notes and memos as the essence of reflexive ethnography and I used these to inform my ongoing observation and interviewing strategy working out what questions to ask and which people and locations I needed to spend more time with. Of course, as outlined in 4.3.1.1, as personal field notes, my notes put me at the centre of the research and reflect my own personal and subjective choices as to what is noteworthy (Hammersley & Atkinson, 1995).

#### **4.3.3.2 Marine based activities**

When I arrived in Cearban in March 2015, the skiff kit was taking shape in a shed outside the village hall (Figure 4-14). At this time the skiff builders were having two or three build sessions per week and I went to join in these sessions. I got busy gluing, sanding, planing, painting, and generally helping in any way that I could given my limited woodwork skills. Amongst the work there was plenty of chat about village life and it was a highly valuable way to collect data on the area.

The three-person team comprised a lifelong village resident and Gaelic speaker, an incomer who had been on the Island for many years and a more recent incomer. Given this mix I was able to gather different opinions and interpretations of village events. As the build team was small, I was able to develop strong relationships with these three which was valuable in gathering information. However, it also meant that the skiff building did not lead to as wide

In sight and in mind: social implications of marine renewable energy an engagement with the community as I had initially hoped. Occasionally other men from the village would drop in to see what was happening or what progress was being made on the skiff, but the shed was not a wider meeting place for people to socialise.



**Figure 4-14: “The skiff taking shape in the shed” by the author, May 2015**

Following the skiff launch in July 2015 the activities in the workshop ceased and switched to the water (Figure 4-15). The rowing club organised a series of launch events which many members of the community attended. After the skiff launch there were rowing sessions held as often as a crew could be assembled. There was limited uptake among residents of Cearban and Steall to go rowing, and as with the skiff build I did not get to meet as many people as I had hoped.

There was a core group of people who liked to go out and some new people who had not been involved in the skiff build became regular rowers. There were generally two rowing sessions a week that I attended, though all rowing sessions were dependent on the weather and as winter approached the days became shorter and the weather more unpredictable, which limited the opportunities for rowing. As with my pilot research, the rowing sessions provided valuable opportunities to talk before, during and after rowing. I learned lots about local history and landmarks as we rowed past different locations. I heard stories and songs of local lore, past and present. By going out onto the water and being in the marine environment I was able to understand it and the connections that people have to it, in a way that would not have been possible by staying on land.



**Figure 4-15: “Rowing in the town harbour” by rowing club member, September 2015. Author facing camera in cox’s seat.**



**Figure 4-16: “Traditional Hebridean sgòth at sea” by sailing club member, July 2015**

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As well as the rowing activities I also joined the Island's traditional sailing society. The Island has a long history of seafaring and three traditional Island *sgoth*, sailing skiffs, are maintained by a trust, *urras*, in town. The *Urras'* three working *sgoth* are among only a few surviving examples of the traditional wooden sailing boats that once were common across the Island (Figure 4-16). During the summer months the *sgoth* were taken out regularly for sailing with members of the *Urras* and other visitors or interested parties. During the winter months maintenance was performed including painting, weather proofing, and replacing rotten planks. I joined in with these activities learning more about the Island's marine environment and the people who use these marine spaces, through voyages and conversations along the way.

#### **4.3.3.3 Community development activities**

When there were no marine based activities scheduled I spent my time participating in other community-led projects in Cearban and Steall which I now describe.

The Lower Cearban Development Trust was running a community growing project to cut down on food miles and save carbon. The project had built an allotment and polytunnels to grow food in the village and I spent days at the site helping in whatever way I could. The site had been in operation for one year when I arrived, but there was still work to do in developing the outdoor areas and in looking after the produce in the tunnels. As a community project any member of the community was welcome to come and get involved, however, there was currently only one community member, a recent incomer, helping out and the project employed a gardener to manage the day-to-day operations at the site.

I enjoyed my time digging, watering, shifting stones and rocks at the site. There was lots of chat as we worked and stopped for tea breaks. Through this activity I was able to present myself as a member of the community and hoped that people would forget I was an observer. Other members of the Trust would often stop by and it was as much of a community meeting place as could be found in Cearban. However, it was another community project in which community members did not appear to be too involved and did not allow me to meet as many people as I may have hoped.

In Steall, local community development was being led by the Steall Community Trust, *Urras Coimhearsnachd Steall*, in the old school. The *Urras* organised many events such as coffee mornings, brunches, film screenings, curry nights, and ceilidhs and I attended all of these

In sight and in mind: social implications of marine renewable energy events to meet people and observe community activities. The regular weekly coffee morning was mostly attended by elderly residents as it was during the working day, and the conversations were mostly in Gaelic. It was a good place to observe community activity and meet people, though impossible for me to join in the Gaelic conversations. My conversations tended to be with members of the *Urras* committee and the development officer rather than the 'lay' villagers.

With the rowing, sailing and gardening activities I was very much in the participant-as-observer role (Gold, 1958), whereas in my activities at the Steall old school I did not have anything practical to do and was more an observer-as-participant. I found the greater participation in the former activities led to better access and data as I became a part of activities and the community and was therefore viewed as a member of the group rather than an outsider. It was through these participatory activities that I was able to build relationships with other group members so that when I subsequently attended other community events, I was not attending alone as an outsider, but was able to join with people I knew and share and discuss ideas on the event and understand their interpretations of it.

This I believe was a real benefit of the extended ethnographic research approach. Through participating in activities with community members, I developed relationships and trust, and became part of the community rather than just being a researcher. In this way I was able to get beyond the 'front' that people wanted to present and was subsequently afforded the opportunity to capture data that would not otherwise have been possible.

#### **4.3.3.4 Other activities**

The other community building where people in Cearban regularly met was the church. The church in Cearban belonged to the Free Church of Scotland. There were two services on a Sunday at midday and in the evening, with the midday service conducted in Gaelic every second week. There was a small meeting house in Steall which is a part of the Cearban Church and shared the minister. There was a service in English in Steall every other week in the morning before the Gaelic service.

I started to attend the Church with my daughter at midday as there was a crèche provided during the service. I hoped that through attending Church I would learn more about the religion and its role on the Island. I also hoped it would be a way to meet more people in

In sight and in mind: social implications of marine renewable energy the community. It transpired that whilst attending church was a good way to get my face recognised in the community it was not much of an opportunity to talk to people. At the end of the service there was no socialising over tea and coffee as happens at some congregations and people would return to their cars and head home immediately. Nonetheless, the simple greetings with the minister, church elders and congregation on the way in and out made me feel a part of the community.

Impression management (Hammersley & Atkinson, 1995) was important whilst attending church and I dressed with a shirt and tie to give the impression that I was a regular and respectful part of the congregation. However, when I was asked about my religious beliefs I did not lie and admitted that I was agnostic and not a regular churchgoer. Had I said otherwise I may have found the church a more effective route into the community but I had no specific requirement to conduct research within the church or to not honestly represent myself to the community, which is an important principle of conducting ethnographic research (Hammersley & Atkinson, 1995).

Instead, I stuck with the marine and community-based activities where my own personal interests and philosophy were more closely aligned with those of the group and good impression management was done much more naturally for me. Interestingly, there was limited overlap in participation between the church congregation and the marine and community-based activities that I engaged with. Attending church therefore highlighted that there was a large section of the community that I was not able to access and that the incomers and returnees that dominated the rowing club were not representative of the full cross-section of the community.

One place which was frequented by both churchgoers and members of the community trust was the weekly toddler group which I took my daughter to. The toddler group was another way to meet people and to observe community activity. The toddlers at the group were mostly accompanied by their mothers which made it slightly harder for me as a man to integrate. As Hammersley and Atkinson (1995) note, the personal characteristics of the researcher such as gender can influence field relations, and in this case made it harder for me. In contrast though, I probably had an advantage in establishing relations with the male boat builders than a woman may have done. Nonetheless I became friendly with a couple of mothers at the toddler group. Having conversations while keeping an eye on infant

In sight and in mind: social implications of marine renewable energy children is not the easiest but I still learned many interesting things about the Island at the toddler group and from a very different perspective than at the rowing and sailing activities.

Throughout the year, I attended as many public events as I could, particularly those related to energy and local decision-making. These events included consultations run by the community trusts, the *Comhairle*, and energy companies. Through these events I observed how the public was involved (or not) in decision-making processes, and came to better understand what was important to people on the Island, as well as the processes that shape responses and priorities.

During days when I had no community activities to participate in, or interviews scheduled, I would go to visit a crofting family and help with whatever work was being done, or more often chat in the loom shed whilst tweed was being woven. In lambing season, I followed the progress of ewes and then lambs, and in peat cutting season I went on the moor to learn how to use a *tairsgear*, peat iron, and followed the process of getting the peats home to the *cruach*, peat stack. In this way I came to learn the rhythm of the crofting seasons and local traditional practices, but crucially experience the social and emotional elements of it.

Whilst at the College I took an opportunity to take a beginners Gaelic class which was valuable in helping to better understand the role that language plays in local issues and determining social responses.

In this section I have outlined the activities that I undertook on the Island as part of my fieldwork in order to gain access to the community and understand the concerns of Islanders. The fieldwork, however, was not without its challenges and in the next section I reflect on the fieldwork process.

#### 4.3.4 Reflections on the fieldwork

In this section I explain the personal and emotional challenges involved in conducting this fieldwork. The cultural context of the Island and its relations to MRE is discussed throughout Chapter 6. Here I discuss some of these same cultural features in respect of the way that they impacted my data collection, specifically the reluctance that many Islanders appear to have to talk to outsiders.

Conducting fieldwork on the Island was not without its challenges. As discussed in 4.3.1 above, the issue of gaining access to the population to be studied and gaining their consent is an important aspect of the practicalities of conducting ethnography (Hammersley & Atkinson, 1995; Bryman, 2008). Despite having chosen the Island fieldwork location specifically because I was well placed to overcome these obstacles with a gatekeeper in place, I found that getting people to engage with me and consent to participate was challenging.

Through the rowing and community groups I had a good network of contacts, but, as stated in 4.3.3 above, this was a small group of people and I struggled to meet and develop relationships with the majority of residents who were not involved in these activities. In addition, to not being able to meet more people in the community, I had a sense that some people I did meet did not want to talk to me. Having supportive gatekeepers is not a guarantee that other members within a community will welcome investigation of their community.

Whilst the difficulties of impression management and maintaining field relations are well documented in the literature along with the stresses and strains they cause the researcher (Hammersley & Atkinson, 1995), as a novice ethnographer these anxieties were ever-present. I constantly worried if I was following the right research strategy, asking the right questions, meeting the right people. I particularly focused on what I was doing wrong and how I could get more people to open up to me.

During my early days on the Island I thought that people were reluctant to talk to me because they had either not understood clearly what I wanted to find out, or misunderstood my motives or had some of the suspicions that Hammersley and Atkinson (1995) caution that people in the field who have little knowledge of social research will often initially have towards an ethnographer.

In order to try and develop better field relations and encourage more people to engage with me I wrote an article about what I was doing for the community magazine (see appendix) and attended the local senior citizens group regular get-together to talk about my research. It was hoped that this would help people to better understand my research and my intentions and bring interested parties to contact me to share their ideas. A few months later, I penned another article for the magazine (see appendix) based on the ideas that I had developed during my time on the Island and appealed again for people to talk to me about them. I never found out how these articles were received as nobody ever mentioned having read them to me and nobody ever approached me to talk about my research. Similarly, at the end of the senior citizens get-together, after introducing my research project I found that they were not very keen to share their thoughts on it with me.

A couple of contacts offered explanations to me in way of understanding people's reticence to talk. One community elder explained that it was not that people did not want to discuss things with me, but simply that they did not know how to. That I was asking questions that were too abstract and were ones that people had never previously considered and did not know how to consider.

Another rationale was that due to large extended families consisting of many cousins, people on the Island have more relationships than they can manage. It is difficult for people to keep up all these relationships so therefore they have no desire to establish further relationships. There is therefore a culture of trying to limit contacts with others, rather than expand them, which leads to a general ambivalence towards engaging with new people, researchers or otherwise.

As time went on however and I got to know the Island better, I realised that there were longstanding cultural issues around the social context on the Island which contributed to people's reluctance to participate, rather than my research approach or anything I had done personally.

#### **4.3.4.1 Ethnography and omertà**

Several encounters during my fieldwork revealed a reluctance to talk and that the notion of omertà, the mafia code of silence, exists within the local population towards outsiders and authorities. This notion of omertà was first made clear one day when I was meeting with one of my contacts. Another person who I had met before came in to give my contact

In sight and in mind: social implications of marine renewable energy something and my contact suggested that the second person would be a good person for me to talk to. The second person immediately declined stating “I have known these people all my life and I am not going to talk about them”.

The reasons for this unwillingness to talk are complex but include a history of negative portrayal of the Island by journalists, writers and filmmakers leading to a lack of trust in their reporting. This phenomena is not unique to the Island however, with Crow and Wiles (2008) reporting examples of other ethnographic studies that community members have responded negatively to. Whilst some Islanders wanted to actively share and celebrate the unique culture and history of the Island, for others there was concern about being unfairly characterised as somewhere that is backwards. I expand on this theme here to illustrate some of the challenges involved in conducting my fieldwork.

After I had been in Cearban for a few weeks I learned about the American anthropologist, Susan Parman, who had spent a year in the village of “Ciall” in the early 1970s. Throughout the following months I was told about her and her monograph of Ciall (Parman, 1990) a few more times during the course of various conversations.

Whilst I was wondering about the difficulties of getting people to talk to me, I was told that “there are still people here who remember Sue Parman”. The inference being that this experience made them reluctant to talk to me, another researcher. I later learned that the book had been quite controversial both in academic circles (Macdonald et al., 2005) and also amongst locals. This clearly confirms the importance of the assertion that ethnographers must be principled and truthful in their work in order to promote good relations with research participants for future researchers (Hammersley & Atkinson, 1995).

That is not imply that Parman was unprincipled and her work does have its supporters. “If you want to know what it [the drinking culture] was like just read Parman’s book” suggests it was considered to be an accurate representation of the community. Understandably though it is not nice to read critical accounts of your society and community, “reading it, it feels like you are being attacked”. “We read it and we just laughed”, suggests that for many locals the community and way of life she describes does not match with their own perception. While many people in the community have likely never read Parman’s book, accounts of it have surely passed around over the years.

Parman (1990) explains that she came to Ciall because a contact of hers knew the minister there and that gave her a way into the community. In the event when Parman arrived she found it difficult to find a family to stay with and to make contacts in the area. Parman, a Gaelic speaker, describes the difficulties that she had doing research in Ciall, the suspicion with which she was met, and the distance that people kept from her. Forty years later I found my experience similar. It cannot therefore be the case that Parman's work, controversial as it may have been, has resulted in people being suspicious of other researchers. There were already deeply rooted cultural factors in place before her visit.

This cultural reticence to talk to outsiders was illustrated by another event that occurred during my time on the Island, the 2016 United States presidential election. The mother of the then candidate Donald Trump was from the Island and as a result a few stories appeared in the press profiling the Island and asking how it may have influenced Trump. One such piece appeared on the BBC Newsnight (2016) programme and the day after it aired there was much discussion about how negatively and incorrectly people believed that it had portrayed the Island and Islanders. Many people were highly vexed by it with one individual citing it as a justification for why Islanders should never speak to outsiders about the place and that *omertà* should apply. This incident revealed that the notion of *omertà*, non-cooperation with outsiders and authorities, does exist within the local population, and is based, at least in part, on a concern that there is a history of regular, negative portrayal of the Island.

The reticence to talk does not exist only towards outsiders, researchers and journalists, but also exists within the community. As I explain in 6.3, the Lower Cearban Development Trust and the Upper Estate also struggled to get input and participation from the community in their activities. The close networks of established relationships within the community mean that local gossip is widely discussed. There is therefore a strong reluctance among people to offer opinions of any sort in case these were to cause them problems with others. In general people do not want to cause controversy or stand out from others. Keeping your thoughts to yourself is therefore important within the community to avoid difficulties in relationships. In this sense it can be understood that *omertà* operates at multiple levels within the community and towards multiple actors. Islanders are therefore well practised at 'performing' social interactions and presenting a 'front' (Goffman, 1956) to people within the community so as to avoid giving away their real opinions.

I have briefly outlined this cultural context here to discuss its implications for conducting my fieldwork. The implications of this for MRE are considered in detail in Chapter 6 where I discuss the findings of the Island fieldwork.

#### **4.3.4.2 Validity of results**

Having discussed non-cooperation, I reiterate that many people were very happy to talk to me and to share stories of the Island. These people seemed to take pride in the culture and traditions of the Island and were proud to discuss this heritage and were also more likely to participate in community activities. This was in contrast to those who appeared to be more circumspect in recounting local details and less willing to engage in community projects in general.

Despite my best efforts to work with a wide selection of Islanders representing a cross-section of society, my results are therefore skewed towards those who were more open about the Island. I do believe though that the breadth of informants that I found, and the consistency of the information that I got from them, means that I have collected an objective and accurate set of data. Furthermore, through extensive observation I was able to witness first-hand the phenomena that Islanders describe and analyse them objectively for myself.

Conducting ethnographic research such as this had great benefits and produced rich data that would not have been possible without this approach. Spending extensive time on the Island and building rapport with Islanders through participating in rowing, sailing, gardening and other community groups and events allowed me to gain a depth of data that would otherwise not have been possible.

## 4.4 Bringing together the methodological approaches

So far in this chapter I have introduced the two research components used in this thesis. I now offer some final comparisons on these two methods and reflect on how they fit together.

Both research components employed qualitative methods in order to gather rich data from 'lay' members of coastal communities but collected this data in different ways. The workshop participants were asked to consider what social factors were important in a hypothetical coastal community and how the ORE scenarios would socially impact this hypothetical community. In contrast, the Island ethnography was more inductive and focussed on a specific community.

The methods employed in the Dialogue followed the UK Government approach to upstream public engagement. Whilst this move to ex ante engagement has largely been seen as positive, the methods have been critiqued for being too normative, favouring a top-down institutional framing of public dialogue (Chilvers, 2010), which fosters instrumental policy change and overlooks transformative implications (Wynne, 2006). In practice the methods employed in public dialogue are framed by the project organisers and neglect alternative framings of issues, and the information and materials used to stimulate deliberation mean that participants cannot debate issues on their own terms (Chilvers & Macnaghten, 2011). This was the case in the Dialogue workshops which were focussed on initiating detailed discussion on social impacts of ORE and where the materials and scenarios provided framed participants' responses.

In contrast to the lack of reflexivity in the Dialogue process, the Island fieldwork embraced social constructionism to inductively explore the issues and framings of Islanders. I did not provide information about MRE or scenarios for Islanders to respond to, but instead explored Islanders' own narratives around MRE and how any MRE project scenario might affect the community. To this end, the Island component was focussed on understanding the social context of the Island community in detail and considering how MRE would interact with this.

On the Island, as outlined in 4.3.4, I found it difficult to reach silent members of the community and get them to participate in the research, and instead relied on community leaders and people more actively engaged in participation and decision-making. The

Dialogue deliberately recruited a cross-section of the community with use of financial incentives to secure their participation. To this extent the Dialogue was successful at including voices that would otherwise be excluded from both planning processes and research projects. It has been suggested however that this approach can serve to homogenise the public as a single entity and that it is difficult to generate deep discussion amongst a group of strangers with little experience of the topic (Chilvers & Macnaghten, 2011). On the Island, I was able to spend a prolonged period with people who knew each other and gather deeper and more considered opinions and ideas.

The Dialogue then is a broad exploration of the social implications of ORE on Scottish communities, while the Island is an in-depth look at one specific community. Together they provide both breadth and depth of study and, combined, the two sets of findings constitute a stronger and more reliable empirical evidence base. By bringing together these two approaches it is possible to consider the transferability of the Island case study to other communities and gain extra nuance which can ameliorate the higher-level Dialogue findings.

Having outlined the two methodological approaches and detailed how I collected my data, I finish this chapter by discussing the data analysis.

## 4.5 Dealing with the data

Through both components of this research I collected large amounts of rich qualitative data in the form of informants' accounts and my personal observations. Qualitative data has been described as an 'attractive nuisance' because its inherent richness can lead to problems in its analysis (Miles, 1979). In this section I discuss how I managed this data.

The data from each research component have been kept separate and are presented individually. In this way, the factors that inform responses to MRE from each data set were derived. There is much similarity between these factors, but also some differences which could reflect the methodologies undertaken or the geographical context of the Island.

Throughout my fieldwork on the Island I was reflecting on the data that I collected. This iterative process is central to grounded theorising (Glaser & Strauss, 1967). Hammersley & Atkinson (1995) liken ethnographic research to a funnel, with the research starting broad and achieving more focus as the process of inquiry is undertaken. On the Island I was generating themes and key issues as they arose; if an idea or theme came to be seen as important, I was able to explore it in more detail by asking my informants about the topic. For example, the importance of Gaelic language in shaping responses, or the requirement to consult your neighbours before conducting any work on your property. I was thus able to corroborate whether this was an important issue or not. The data analysis and collection thus continued in tandem and supported each other.

Both sets of the data that I collected were 'unstructured' in that they were not ready categorised into a finite set of analytical categories (Hammersley & Atkinson, 1995). The first step of data analysis I undertook then was to structure the data through a process of formally grouping each set of data into themes. There is no right or wrong way of undertaking this process but it starts with a close reading of the data and identification of key concepts within it (Hammersley & Atkinson, 1995; Walsh, 2004). These concepts can arise from the words used by the research participants themselves (Becker, 1993), from categories observed by the ethnographer, or from the literature (Hammersley & Atkinson, 1995). It is also a continual process and after completing the initial categorisation I continued, as recommended by Glaser & Strauss (1967), with a constant comparison between data throughout my analysis to ensure that all the data had been grouped accurately and to refine the categorisation.

I approached this thematic grouping process based on my personal understanding, familiarity and interpretation of the data gathered and the ongoing field memos and analysis that I had been completing on the Island and in between each Dialogue workshop. Having this deep personal immersion in the data was a benefit of the ethnographic method that enabled me to recognise and interpret the importance of different themes. At the same time, by putting myself at the centre of the analysis, just as I had been with data collection, I was conscious of the need for reflexivity in my analysis (Brannick & Coghlan, 2006) to maintain objectivity as my observations and analysis are selective and shaped by my own values and beliefs (Gray, 2009).

This thesis has adopted a social constructionist approach throughout and therefore is not focused explicitly on the categorisation of data. Indeed, by fragmenting data into discrete chunks it can result in a loss of the data's richness (Bryman, 2008). Furthermore, Charmaz (2000) asserts that the application of grounded theory to data analysis is objectivist in nature as it "impl[ies] that categories and concepts inhere within the data, awaiting the researcher's discovery" (p. 521). She therefore argues that a more constructionist approach is needed that recognises that categories "emerge from the researcher's interaction within the field and questions about the data" (Charmaz, 2000: 522).

Having spent eighteen months on the Island, considering my data and building up an understanding of the area I have developed strong associations with the place and the data and therefore set out to share these personal interpretations. The data presented is my account of the information provided to me during my interviews, conversations and observations. Similarly, the Dialogue data is my interpretation of the information and concerns that participants expressed during the workshops. I have not produced discrete categories of data but rather present a breadth of interconnected analysis which uses the data to show how I understand participants' responses to MRE to be socially constructed.

## 4.6 Summary

In this chapter I have introduced the twin-track research components that I undertook for this research, the Dialogue and the Island.

The Dialogue comprised six public dialogue workshops held in Scottish communities to explore the social impacts of ORE. The workshops were designed in accordance with the principles of the UK Government approach to upstream public engagement in science and technology. From the workshops I collected a breadth of data showing how communities across Scotland respond to proposals for ORE.

The Island consisted of ethnographic fieldwork that I undertook on a Hebridean island. The fieldwork was an inductive investigation into social responses to MRE on the Island. This resulted in a depth of data revealing in detail the range of factors that inform social responses to MRE in this community and how these factors are socially constructed.

Together these different but complementary qualitative research approaches yielded two sets of rich data revealing the social implications of ORE.

Having explained how I collected the data, in the following chapters I present the findings from each of these research components, starting with the Island findings. Before I introduce the Island findings, I present a further background to the Island case study location to help illustrate the local context.

## Chapter 5 Proem to the Island findings

In Chapter 4.3.2.2 I gave a brief introduction to the Island, in this section I provide further background in relation to energy on the Island that is helpful for understanding the findings which follow. The Island has significant energy resources in the peat banks, waves and the wind, but at the same time there is endemic fuel poverty on the Island. This context of energy on the Island, and the energy projects that have recently been developed and proposed, is provided to show how Islanders engage with energy and how this relationship shapes social responses to MRE.

### 5.1 Energy on the Island

The way of life on the Island has changed considerably over the last century, as I detail in 6.1.1. These social changes have coincided with a changing relationship with energy. For generations Islanders have utilised the deep layers of peat found on the moor as fuel for heating and cooking, and have therefore traditionally had a close relationship with, and unique understanding of, the energy that they consume. This free and readily available resource enabled energy self-sufficiency but did take considerable effort each spring to cut and dry the peat on the moor and transport it home (Figure 5-1).



*Figure 5-1: "Freshly cut peats with wind turbine, village and ocean in the background" by the author, May 2015*

Today houses have central heating which is typically from an oil-fired boiler and only a small percentage of Islanders cut peat. Stephen (2015) observes that the amount of peat

In sight and in mind: social implications of marine renewable energy cut has fluctuated in recent years in line with the price of oil. The price of electricity, oil and petrol are typically higher on the Island than in other parts of the country due to greater transmission and transport costs. During my time on the Island in 2015/16, petrol usually cost between £1.15 and £1.20 per litre, and was typically between £0.07 and £0.10 higher per litre than in the Central Belt or Inverness, meaning it was around 6% to 8% more expensive on the Island. It is harder to compare the price of electricity and heating oil with mains gas, but I had an electricity tariff of £0.122 per kilowatt/hour on the Island, and with the same supply company £0.103 in Edinburgh, making the Island tariff 16% dearer.

High fuel prices, together with poorly insulated homes, results in the Island having the highest levels of fuel poverty in Scotland. More than 70% of households are reported to be in fuel poverty (The Energy Advisory Service, 2014), defined as spending more than 10% of your income on heating your home. The endemic fuel poverty on the Island means that there is an urgent need to improve energy infrastructure in order to improve the wellbeing of Islanders, and this is a key consideration in relation to energy and resource use on the Island.

While the peat resource is no longer being widely exploited, the Island's renewable energy resources are being increasingly considered for more modern methods of energy generation in the form of marine and wind energy projects. I now introduce these in turn.

### **5.1.1 Marine renewable energy**

Lying on the edge of the Atlantic Ocean, the Island receives more than its fair share of windy and stormy weather and has significant marine energy resources. Wave measurements taken off the coast of the western shore by the Hebridean Marine Energy Futures project (Neill et al., 2017), indicate the waves along the 200km long Western Isles coastline contain on average as much energy as 15 nuclear power stations. In storm conditions the power has been recorded at more than 1MW/m with wave heights in excess of 23 metres. The coastline also comprises sea lochs with strong tidal currents, though to date there have been no plans brought forward for tidal energy on the Island.

Three different companies, have developed plans for three different wave energy projects, using three different types of wave technology, on the west coast of the Island. As outlined in Chapter 1.1, the MRE sector in Scotland has not developed as quickly or smoothly as first anticipated, and resultantly when I arrived on the Island in 2015 none of these three projects had been completed, or indeed continued to be pursued.

The first project to be conceived was for a 4MW oscillating water column (OWC) device within a breakwater. This project resulted from a group of boat users wanting to upgrade the slipway. A local engineer working for the *Comhairle* advised that without a breakwater to protect it, it was not worth improving the slipway as it was too vulnerable to the marine elements. From here the idea of including the OCW in the breakwater arose. Permission for the project was granted and it was backed by a multinational energy company. Ultimately the company pulled out and the project was cancelled in 2012 as new funding could not be found. The local engineer involved in the project reported to me that the company pulled out as a result of its own global strategic priorities, not because the project was unviable.

The other two projects on the Island were initiated by Edinburgh based wave energy companies. These companies had identified sites around Scotland where they planned to deploy their devices. Pelamis had permission for a 10MW wave farm consisting of 14 of its wave energy convertors. The company went into receivership in 2014 and all its projects were cancelled (BBC, 2014). Aquamarine Power had consent for a 40MW project comprised of up to 50 Oyster devices. The project would have been the largest commercial wave energy site in the world had it been completed, however, by the end of 2015 the company had folded (BBC, 2015).

Through a combination of lack of continued finance and lack of device performance, neither company successfully deployed their devices anywhere in Scotland and both ended up in receivership. The failure of all three projects was therefore not based on local Island conditions, but on the wider struggles of the wave industry to reach technological maturity.

### **5.1.2 Wind energy**

The Island also has significant onshore wind energy resources and a number of turbines have been built on the Island. There have also been proposals for a large windfarm on the Island though this project has not been realised. I discuss these projects here to further outline the energy context on the Island.

There are seventeen operational wind turbines on the Island ranging in size from 900kW to 3MW (Figure 5-2). There are also a significant number of micro wind turbines in operation. Nine of the turbines have been developed and operated by commercial companies, whilst the remaining eight are community-owned and operated. The community turbines belong to four different community groups. On the west side of the Island the Lower Cearban Development Trust has one 900kW turbine, the first community-owned turbine to be built

In sight and in mind: social implications of marine renewable energy on the Island, and to the north the Upper Estate has three 900kW turbines. All of the remaining turbines are located on the east side of the Island and include three 3MW turbines owned by a community trust I refer to as 'the large community wind organisation'.



**Figure 5-2: "Commercial wind turbines on the moor" by the author, May 2016**

Given the Island's small population it has a limited demand for electricity. The installed wind capacity is currently greater than the demand meaning that some of the existing turbines are constrained and cannot generate to their full capacity. As a result, no further energy projects are allowed to be built on the Island until the grid and transmission infrastructure is upgraded to carry the electricity generated to areas of higher demand.

A costly high voltage direct current interconnector is required to connect to the mainland, but this project cannot be financed and constructed until there are devices generating electricity to be transmitted. Equally, devices cannot be built until there is a grid connection to transmit the electricity that they generate. Therefore, it is necessary to simultaneously develop both the generating capacity and the transmission network, and so far it has not been possible to do this.

The Island's wind energy potential was recognised by a French company who put forward plans for a 181-turbine windfarm in the early 2000s. The scheme was to be the largest onshore windfarm in Europe at the time. The windfarm would have covered much of the north of the Island and would have seen turbines located near to all of the settlements on the west side of the Island including Steall and Cearban. The linear plan saw turbines

In sight and in mind: social implications of marine renewable energy located across the moor from the town on the east and then adjacent to the road running up and down the west side. Turbines would have been located on the two largest estates on the west side, with the landlords earning rental income. Rent would also have been paid to each grazing committee for turbines located upon their common grazings area, thus leading to income for all crofting shareholders. As part of the project the company would have constructed the interconnector in order to transmit the electricity generated on the Island to where it was needed.

The project was strongly backed by the *Comhairle* but was ultimately rejected by the Scottish Government at Holyrood. There were highly polarised opinions towards the project with both vocal support and opposition to the project on the Island. There were more than 11,000 objections to the large windfarm with more than half of these originating from the Island (Wemyss, 2011). Islanders' responses to the project have been documented by Fisher & Brown (2009) and Wemyss (2011) who reveal that competing discourses and interpretations surrounding the project led to contrasting social responses.

Fisher & Brown (2009) identified four discourses relating to different appraisals of the economic, social, environmental, and landscape criteria of the project which explained individuals' responses to the project. The first discourse is a bipolar discourse in that it represents a pro-windfarm view based on the economic benefits of the project and renewable energy in general and sees minimal local environmental impacts. The flip side of this discourse is opposition to the windfarm based on significant local environmental impacts and minimal economic benefits.

The second discourse is an anti-windfarm narrative based on scepticism of economic benefits, an emphasis on protecting the local environment and on energy conservation. The third discourse is a neutral discourse supporting local decision making and in favour of smaller, community-owned wind turbines. The fourth discourse is another anti discourse based on concern for the tourist industry, local environmental impacts and scepticism of economic benefits.

During my time on the Island I learned that much of the opposition to the large windfarm came from the west side rather than from the town. In an attempt to block its development, residents of the two estates on the west side began attempts to complete community buyouts of the land, as taking control of the estate would have given the community the power to decide whether to allow turbines to be placed on the land.

The buyout of the North Estate was completed rather swiftly, while the purchase of the Middle Estate was concluded several years later, whilst I was on the Island. As I outlined in 2.1.4, renewable energy is an important source of revenue for community-owned estates (van Veelen, 2017), and after the North Estate was purchased by the community three wind turbines were built to provide a revenue stream through which to manage the Estate. These turbines are smaller in size, and considerably fewer than the 80 turbines proposed for the Estate by the large windfarm project. It is, however, an interesting paradox that what started as an anti-windfarm community buy-out has resulted in the construction of three turbines.

The original large windfarm plans have been dropped, but the developers are still pressing ahead with plans for a reduced windfarm located solely on the east side of the Island and away from the west side where the majority of opposition to the original large windfarm project was centred. The *Comhairle* has continued to back the interconnector and commercial windfarms on the Island. Indeed, they have been campaigning for a special designation of 'remote island wind' that will enable wind turbines on the Island to receive subsidies that have otherwise been cut by the UK Government for onshore wind projects (Cuff, 2018). The premise is that remote island wind has the same resource as offshore wind, but without the engineering challenges of being in an offshore environment.

These new windfarm plans have also caused controversy as the large community wind organisation would also like to develop more turbines on this same land which belongs to the Town Trust. As of 2018 there is a legal challenge between the commercial developer and the community developer over who has the right to develop turbines on what is community-owned land (Watt, 2018).

As a result of these past and ongoing windfarm proposals, most Islanders are now very informed and engaged with the issues around renewable energy on the Island. Awareness of Islanders' experiences of peat, wave and wind energy, and fuel poverty is important for understanding their social responses. This proem has provided background on energy projects and planning to illustrate the context within which MRE projects on the Island are situated. The context helps to explain how responses to MRE are socially constructed and will assist the reader in interpreting the Island findings which follow now.

## Chapter 6 **The Island findings**

In this chapter I present an analysis of key social factors on the Island, a potential host community for marine renewable energy. The qualitative data collected during my fieldwork on the Island illustrate the range of responses that exist towards MRE projects, and the breadth of factors that contribute to the formation of these responses.

The focus of the chapter is responses to MRE projects, but, as outlined in the previous chapter, the planned wave energy projects on the Island have not been constructed. Subsequently, there are no MRE projects in the water on the Island for Islanders to respond to directly. This is therefore a study on how Islanders' reactions to the prospects of MRE are socially constructed within the social and cultural context of the island.

The data I present here draws on Islanders' understanding and knowledge of MRE based on the MRE schemes that have been proposed on the Island. The data also contains discussion of responses towards wind energy as these projects have been constructed on the Island and are therefore more visible and tangible to Islanders. The comparison of wind energy and MRE is helpful in addressing the question of whether MRE will be less controversial than wind energy and can be considered to be out of sight and out of mind.

The factors that are shown to inform social responses to MRE are varied and interlinked. In this chapter I discuss these factors according to three broad themes, place, impacts and processes. These themes however are not discrete and there is much overlap between them. In each section I introduce a local Gaelic song or poem to highlight how each of these themes is socially constructed within the cultural discourse and that responses to MRE are embedded within this.

In the first section, Place, I discuss factors related to the cultural and social context of the Island and the connections that people have to it. This heritage, and the changes that have occurred to it in recent years, influence how future changes are perceived including those resulting from MRE.

In the second section, Impacts, I discuss how evaluation of the perceived positive and negative impacts of projects is central to social responses and consider the positive benefits that MRE could bring to the Island. To do this I provide details on the Island context which inform how impacts are perceived.

In the third section, Processes, I look at how planning and participation influences responses to MRE. In addition, I illustrate how poor planning processes on the Island have resulted in disempowerment amongst Islanders and that this informs how projects and those proposing them are received. I further discuss the challenges of getting Islanders involved in decision-making processes which is important for realising the positive social impact of renewable energy projects.

## 6.1 Place

In the first section of this chapter I consider the historical and contemporary relationship that Islanders have to the sea and how this affects responses to MRE. There are unique factors in the Island's Gaelic heritage which inform how responses are socially constructed on the Island. Islanders have deep connections to the local land and seascapes which have been developed through generations of dependence on these spaces. Accordingly, they have a deep belonging in the local culture which, despite recent changes in usage, is maintained in the cultural memory through language and song.

The renewable energy potential on the Island is located on both the moor, for wind energy, and the sea for wave and tidal energy. As outlined in Chapter 5, plans have been put forward for energy projects in both of these locations. In this section, I discuss the relationship that Islanders have with both the moor and the sea, how these are socially constructed, and how this influences social responses towards energy projects and other developments in the community.

In addition, I demonstrate that there are many factors which inform place attachment more widely, that these are socially constructed and influence how Islanders may respond to future changes brought about by MRE projects.

### 6.1.1 Change

“Everything has changed except the shellfish and the seaweed.”  
(Macdonald, 1978: 280)

The way of life on the Island has changed dramatically over the last century. Considering these changes, and how Islanders have responded to them, is important for understanding the relationships that Islanders have with the local environment and how the development of energy projects on the Island are interpreted.

The Island, and particularly its west side, has a strong crofting heritage, which has endured as long as anywhere else in Scotland. It was the last place in the UK where transhumance, the practice of people and livestock moving to summer grounds was followed, and where families lived in blackhouses, long stone and turf-built dwellings, along with their livestock.

Islanders, and particularly crofters, have traditionally relied on both the sea and the land to sustain them. As a self-sufficient, subsistence economy crofters got fish from the sea, fuel from the peat banks, raised livestock on the moor, and grew crops on the *machair* [fertile sandy soil found near the sea]. Families have for generations sustained themselves on the land and sea and made their personal mark on the area. Indeed, most local landmarks are named after people.

Much of the traditional crofting lifestyle has disappeared over the past decades and with it the relationship that people have to the physical landscape, and with each other, has changed. One now retired resident explained that “in my childhood after WWII, fishing, crofting, Gaelic culture were embedded. It was a practical generation with some men who never came out of their boiler suits”. People in their forties today were the last to grow up in this way.

Crofters led a largely subsistence lifestyle and worked hard to provide for themselves and their families. The Island is now a part of the market economy and Islanders are able to buy food, fuel and any material goods they desire. In fact, the Island “has gone from being completely self-sufficient to completely dependent” on deliveries from the mainland. As a result of these changes “crofting is reduced to sheep and little else”. It is still necessary to work a croft or the right to own it can be revoked, people therefore keep a few sheep but there is no living to be made from them.

Islanders might not use the land as they did before, but it still has the same attachment. As a retired local explained “in functional terms it [crofting] has changed, but in emotional terms it has not changed”. The land remains the family croft, has memories and history and is a strong part of people’s identity. For many, particularly older Islanders, attachments to the environment and responses to energy projects are thus based not just on how projects fit within contemporary practices but also with traditional practices.

Impressions during childhood can strongly inform attitudes and ideas during later life.

Given that today's over forties have grown up in a markedly different way to the younger Island generation, to urban Islanders, and to Islanders who grew up elsewhere before relocating to the Island, there exist different attachments to the environment.

This changing way of life influences the way that the physical landscapes of the sea and the moor are socially constructed and the connections that people have to them. This in turn informs responses to MRE. In the next section I discuss Islanders' relationships to the moor and the sea in more detail and illustrate how they are socially constructed.

### 6.1.2 Empty spaces?

As a result of the changing and modernising lifestyle, Islanders today are not reliant on the sea and the moor as previous generations were, and both spaces are now largely empty of fishing boats and livestock respectively. While they are now physically empty spaces, they remain important and valued spaces, and full of cultural symbolism.

The moor covers the centre of the Island and appears as a vast empty space. There are no roads and no settlements, it appears inaccessible and unutilised and therefore suitable for wind energy projects.

"It doesn't matter if there are turbines on the moor or not, it is 11 miles of empty land and not the prettiest." Young west side resident

The moor may today appear empty, but it is in fact full of human history and heritage. A closer look will reveal the land has been altered by peat cutting with the lines of peat banks visible along the roadside. Further into the moor are the *shielings* [settlements on the summer pasture] where families and entire villages used to spend their summers grazing with the animals. The paths that used to lead to the *shielings* are now overgrown and impossible to follow, but the Islanders who regularly trod them still know where they are.

"The developers see that as empty space but to us it is full of memories and stories." Middle aged west side resident

This space then is interpreted very differently between generations of Islanders. Older Islanders can recall memories of their childhood summers spent here and reflect on how life has changed. For younger generations, or those who grew up in the town, who never

In sight and in mind: social implications of marine renewable energy went to the *shieling* and have possibly never been on to the moor, there is not the same connection to the landscape.

Similarly, the sea around the Island, particularly along the west coast, is largely free of human presence. The west coast of the Island does have a string of settlements along it and plenty of people live near to the sea, there are however very few people actually using the stretch of coast. This is in contrast to previous generations when there were many local small fishing boats going out from each village.

“The bay [earmarked for wave energy development] is unusable at the moment and nobody uses it anyway.”

For many Islanders MRE is thus seen as a less controversial technology option than onshore wind energy as it is less likely to impact upon people. One Cearban resident remarked on the space available at sea compared to on land and how this would likely lead to less conflicts.

“There is plenty of room at sea not like on the moor. There is only trawlers out there.”

The trawlers that the resident mentions are not local, and external commercial fishers are widely blamed locally for the declining fish stocks around the Island. Previous generations’ reliance on the sea for fish and sea birds as a source of food led to close relationships with the sea, and like with the moor, these cultural memories endure beyond the cessation of the physical practices of fishing. As one middle aged resident from a seafaring family explained their attachment to the sea and knowledge of it:

“I’m very aware of it, know hundreds of place names. I listen to it and I can tell whether the tide is going in or out, or which way the wind is going.”

The sea and the moor are both important spaces in the Island psyche, and whilst today they are not utilised as they were before and appear physically empty, they remain full of cultural connotations which influence the way people respond to proposals for projects in these spaces. These spaces cannot be considered to be ‘out of mind’ as they have an important role in Islanders’ mind’s eye and identity.

In the next section I expand more on the relationship that Islanders have with these spaces.

### 6.1.3 A functional relationship

As Islanders have been dependent on both the sea and the moor for generations, they have developed a very intimate knowledge of the local environment and how to utilise it for their own purposes. The relationship between crofters and the environment was described to me as 'functional' in that the environment serves a purpose in everyday life and is appreciated for this rather than for more intrinsic values.

"A cousin came from Canada and we took her round the Island, and she said how beautiful it was. We thought this was odd as we didn't consider the moor in this way."

The history of the moor and sea being functional spaces could perhaps mean that it should be natural for them to develop new functions, such as provision of renewable energy. However, Islanders' attachments to these historical functions remain strong and new functions can be interpreted as threats to this heritage.

There are strong connections to the moor and to the sea and they are a strong part of Islanders' identity. The Gaelic proverb *dh'iarr am muir a thadhhal* translates as *the sea wants to be visited, or the sea invites acquaintance*. It suggests that people are drawn towards the sea, the sounds, sights and smells. As one local said, "it is just in me somehow".

On a calm day the sound of the sea and the waves drifts up from the shore into Cearban and the other villages along the coast. It is ever present and constantly making acquaintance with residents on the west side of the Island. Many people talked about how important the sea was to them and how they appreciated it.

"For me it is probably one of the most important things for me. I moved inland and I hated it. That was the thing I missed. From whenever I have always run along the shore. I can never remember a time when that wasn't where I played."

"The sea is massively important. When I was young, I didn't realise that not everybody had it. Then when I went away, I started to really appreciate it. Every single day I walk on the shore. I don't make a living from it, but I find it really calming."

During my time in Cearban I walked across the shore most days and would occasionally meet other walkers or see people parked in their car at the top of the beach, but most often had it all to myself. The people parked in their cars were just there to watch the sea,

In sight and in mind: social implications of marine renewable energy the seascapes, and the changing mood of the sea. A lifetime of habit of assessing the changing properties of the beach has become a part of people's routines. Before this had a functional purpose, perhaps to see what seaweed may have washed up, but now it is a pleasurable activity to see what has changed with the tides and how the sand has shifted. As two retired Cearban residents explained the sea is important to them:

"[I] frequently go down to the sea to see what it is doing, every day is different, the interface of the land and the sea. It isn't one or the other it is the interaction."

"You can hear the echo of the sea from here. I'm quite fascinated by the sea at times. Walking along the shore, think about all the rolling that the pebbles have done. They make quite a rattle as they roll back and forth. That forms the sand."

Whilst the sea holds an important place emotionally in many Islanders' lives, today it has little functional purpose. There are seldom people on the shore, or at sea, and Islanders do not rely on it to sustain themselves. The two retired men for whom it was so important recognised that while people are aware of the sea "it is not part of their daily life" and that not everybody sees the majesty of it or enjoys watching it as instead "some people like watching EastEnders". This reiterates that for many Islanders the environment is viewed functionally rather than for its intrinsic beauty.

This is illustrated by other Islanders who recounted their connection with the sea in terms of a more modern functional relationship, the ferry. The ferry service is very important for Islanders as if the ferry is not operating then essential supplies will not reach the Island, nor will the tourists who have booked into the hotels for that night.

"Clearly it [the sea] is important because we can't get out of here until we cross it. You can't be part of the rest of Britain until you conquer it."

"When you live on an island the two things you are concerned about are the ferry and the weather. Even if you're not going on it you want to know is it going and if not why not."

These changing perceptions of the sea matter because MRE represents a functional use of the sea. Islanders recognise that the sea is full of energy and that wave and tidal technologies harness this for human benefit. To this end, the principle of MRE is supported.

In sight and in mind: social implications of marine renewable energy

“Would love to see wave [energy] off the coast here.”

“I’ve never had any objection to that. It is one of the best things about [the Island] and it doesn't make sense not to use it. Whether it can be made to work is another matter.”

In general, there is support for developing MRE on the Island as it represents a good functional use of the Island’s natural resource. The importance of this functional use of the landscape is reflected in the strong emphasis that Islanders place on the local benefits of energy projects which is discussed in 6.2.

However, alongside this positivity towards MRE there exists a widespread scepticism. As I talked to Islanders about MRE, a common response was that it was a good idea but that they did not think it would work. This scepticism derives both from knowledge and experience of the sea which is discussed further in the next section, along with other cultural and historical factors which are discussed in sections 6.2 and 6.3.

#### **6.1.4 Knowledge and experience**

Through hundreds of years of seafaring on the Island, locals have developed extensive knowledge and experience of the sea, particularly its power and danger. Accordingly, the sea is socially constructed by Islanders as an important part of local culture, but crucially also as a hostile environment that is best avoided. These social constructions are based on past activities, but endure through memory, language, stories and song. Knowledge of the power of the sea, and the experience of the difficulties of working and surviving in this environment and the loss of life incurred in doing so, mean that undertaking activity at sea such as marine sports or marine engineering is seen as dangerous and best avoided.

People who have experienced the winter weather on the Island and spent their lifetime watching the changing face of the seashore are aware of how powerful the sea is. There is significant erosion and sediment drift along the coast with the shape of the beaches in constant flux. Islanders therefore recognise the potential for MRE to be developed, but also that engineering in this environment is not straightforward:

“I never thought that would ever work. If you see the state of the sea in winter time. It rolls across from America non-stop and hits the shore with some force, the spray is as high as the clouds. If it could work fair enough but I could never see how that could be kept in place with that force.”

Furthermore, the functional relationship that Islanders have traditionally had with such a powerful sea has not been an easy one and has resulted in many tragedies. Islanders understand the power of the sea, and whilst they have relied on it to provide for themselves and their families for generations, this has been done through necessity rather than choice.

In previous generations people were dependent on the sea for fish and everybody had a boat or a share in a boat. Going fishing was “something you had to do for survival”. However, it was fraught with danger and was an activity that fishers did not always survive. The sea is dangerous and unpredictable even for the most experienced and knowledgeable sailors and many people have been drowned. Accordingly, one of the overriding feelings towards the sea is one of fear.

“Every family has tragedy in there somewhere in the last 150 years. There is a healthy fear.”

“We’ve always looked at it with a bit of suspicion. It’s so dangerous and unpredictable. It’s drummed into us to stay away from it as children. We didn’t play there. We didn’t have swimming costumes. None of us could swim.”

Many Islanders are glad that they are no longer reliant on undertaking dangerous activities at sea and are therefore naturally sceptical about developing new industries in such a harsh environment. Now that people are not reliant on the sea, there is no reason to go into such a risky environment and some amazement that people would choose to do so. As one rower explained, there used to be collective knowledge on how to handle the danger which has been lost as families have not passed on knowledge. The danger and the memory of loss remain, but the knowledge in seafaring has reduced, potentially making people more wary of it than they used to be.

“I worry about the rowers now. They just go out but don’t have that knowledge. They think that the sea is the sea, but it’s not all the same.”

“My mother is terrified of it even now when you go out in the boat. She doesn’t like me going. They used to tell you all sorts of things about it, monsters and glass in it, we wouldn’t even be allowed to get our ankles wet.”

This cultural trepidation towards the sea was clearly a factor in the low uptake of rowing amongst people in Cearban and Steall.

“We tend not to be involved in the social element of the sea, rowing and yachting. We’ve always looked at it with a bit of suspicion. So it tends not to be a fun thing. It’s so dangerous and unpredictable.”

Whilst contemporary connections to the sea are different from those of in the past, the memory of past connections to the sea, including the lived experience of fishing, persists within the cultural narrative. This is further maintained through popular songs which helps to pass stories on. There are many songs about the sea throughout Gaelic Scotland and the Islands, many of which are particular to a village or community. Songs such as this reflect the way that connections to the sea are socially constructed and also reinforce these constructions.

One popular local song *Balaich an Iasgaich, The Fisher Boys*, speaks of the difficult and dangerous life of young men at sea in their open boat, and how they would prefer not to be there. Gillies (2005) describes the song as a social history lesson describing the ups and downs of the crofter-fisherman lifestyle, the hard life on a boat, but with a sense of communal pride and contentment with the way of life.

The song illustrates the local connection to the sea and the way that this relationship is viewed within the traditional Gaelic speaking, crofting community. The relationship between Islanders and the sea is a functional one, but also a close one and there is pride in it, yet it is one they would prefer not to have. As with the fisher boy in the song, people would prefer a life on land.

**Balaich an Iasgaich, Dòmhnall 'an Moireasdan**

Fàilte gu fearann air balaich an iasgaich,  
'g iomradh, 's a' tarraing 'sa' gearradha'  
bhiadhaidh;  
coma leam leabaidh no cadal no biadh  
gu faigh mi mo lìon an òrdugh.

Bàtaichean Gallach a' gearradh an t-siabain,  
biotadh gu caladh an aghaidh sruth lìonaidh:  
bàtaichean biorach aig Nisich is Siaraich  
fada mun iar air Rònaidh

Tha an Geamhradh cho fada 's an gaillion cho  
cruaidh,  
droch thìde le cabhadh, clach-mheallain is  
fuachd,  
cha mhòr an cur-seachad th' aig balaich 'An  
Ruaidh  
ach cèilidh is bualadh eòrna.

Thig àm Fhèill Phàruig mun pàigh sinn na  
fiachan,  
ri dorghadh nam biorach air slios an Taobh  
Siar;  
ach tha prìs air an Ianga an Sasainn am  
bliadhna  
's gheibh mi mo lìon an òrdugh.

Bidh ri asladh is màladh air ràmh agus cliabh,  
a' fiaradh gun iaradh no tàmh eadar àiteach is  
lìon;  
thug Caileana làmh dhomh nam pàigheadh  
an t-iasg  
gu faodainn Caristiona phòsadh.

'S i leabaidh as fheàrr leam na gàbhadh nan  
tonn:  
tha plaide mo mhàthair's mo làmh fo mo  
cheann  
nas fheàrr na bhith lapadh ri fasgadh nan  
crann,  
ag èisdeachd ri srann nan ròpan.

Sud agaibh na balaich nach gearrain air  
cruadal,  
sìnt air a' bhalaist gun pheallaig man uachdar;  
còignear no seisear's an lethcheann air  
cluasag,  
ulpagan cruaidh A' Cheòsain.

**The Fisher Boys, by Donald Morrison**

Welcome ashore to the boys of the fishing,  
rowing and hauling and cutting up bait,  
I care nothing for bed or sleep or food  
until I get my nets in order.

Caitness boats cutting through the spray,  
beating their way to the harbour against a  
flowing tide:  
Sharp-bowed boats manned by Nessmen and  
Westsiders  
Far west of Rona.

The winter's so long and the storms are so  
hard,  
bad weather with snow drifts, hailstones and  
cold,  
the only pastimes Iain Ruadh's boys have  
then  
are ceilidhing and threshing barley.

St Patrick's Day will be upon us before we can  
pay off our debts  
catching minnows with landlines off the West  
Side shore;  
but the ling are fetching a good price in  
England this year  
and I'm going to get my net in order.

We struggle to pay our way by the oar and  
creel,  
spinning endlessly between the croft and the  
net;  
Colin promised me, if the fishing paid off,  
that I could marry Christina.

I prefer my own bed to the dangerous waves:  
my mother's blanket and my hand beneath  
my head  
are better than freezing solid in the lee of the  
masts,  
listening to the ropes whistling.

These are the boys who don't moan about  
hardship,  
stretched out on the ballast with no blanket  
to cover them;  
five or six of them with their heads on one  
pillow,  
The hard guys from Keose.

## In sight and in mind: social implications of marine renewable energy

Nuair thig sinn à Gallaibh 's a thogar am bàrr,  
bheir bùth Sheumais Chalum dhuinn preasain  
air dhàil;  
bidh dùil am bho Chailean ri feannag no dhà,  
's bheir m' athair a' phàirc is bò dhuinn.

When we come back from Caithness and the  
harvest is taken in,  
James Malcolm's shop will give us presents on  
tick;  
I'll expect a *rig* or two from Colin,  
and my father will give us some grazing land  
and a cow.

Nam faighinn Caristiona chan iarrainn a  
chaoidh  
ach bothan beag riabhach is sioman mu  
dhruim,  
sabhal is bàthach is stàbhag bò-laoigh,  
gearran beag donn is òisgean.

If I could have Christina I'd never want  
anything else  
except a little brindled cottage with a rope  
round its roof,  
a barn and a byre and a wide horned milking  
cow,  
a wee chestnut gelding and a year-old ewe.

Fàilte gu fearann air balaich an iasgaich,  
'g iomradh, 's a' tarraing 'sa' gearradha'  
bhia dhaidh;  
coma leam leabaidh no cadal no biadh  
gu faigh mi mo lìon an òrdugh.

Welcome ashore to the boys of the fishing,  
rowing and hauling and cutting up bait;  
I care nothing for bed or sleep or food  
until I get my nets in order.

The knowledge and experience of the sea that Islanders have leads to both a recognition of the MRE potential that it contains, but also a scepticism of developing MRE in such a powerful and unforgiving environment. This, together with other social and cultural factors discussed in 6.2 and 6.3, mean that marine engineering is an industry that people look on with suspicion and are reluctant to embrace.

The difference between Islanders' traditional knowledge and experience of the sea compared to that of marine engineers is also worth considering here. All of the professionals that I met on the Island involved in the MRE industry were also involved in marine-based leisure pursuits including sailing, surfing and snorkelling. These people also had a deep personal connection to the sea and knowledge and experience of it, as well as a professional scientific knowledge of it. However, to them the sea was socially constructed as an inviting place, that could be utilised for pleasure as well as serving a functional purpose of electricity generation. This demonstrates the different socially constructed perspectives between MRE advocates and ordinary community members.

Marine engineers have been collecting detailed measurements on the amount of wave energy in the sea around the Island and told me that they have discovered that it is even more powerful than they anticipated. As a result, the researchers acknowledged to me that

In sight and in mind: social implications of marine renewable energy  
the conditions on the Island may be too strong for the first-generation wave devices to cope with. It appears then that scientific experimentation has confirmed what Islanders with local knowledge and experience already intrinsically suspected, that the sea may be too powerful to hold wave energy devices in place.

In the next section I will look further at how Islanders' relationship to the moor and the sea is socially constructed with a discussion of Gaelic language.

### 6.1.5 Gaelic language

"Gaelic has a rich heritage of song and poetry, of looking at the environment and the world in a different way. It permeates every strand of the community from crofting to the church, it's our heritage. The weather, the landscape, the moors, the names of hills resound with Gaelic." Councillor Alasdair MacLeod, (Quoted in Rowe, 2017)

As language shapes the way we construct the world, it is cogent to be mindful of the way that Gaelic influences the ideas of Island residents, particularly those for whom Gaelic is the first language. The local and traditional terms which were once used to appreciate and recognise natural features throughout the Island are slipping from usage, but for those who know them they continue to bear significance. Accordingly, Islanders who use Gaelic language to socially construct the Island, its environment, and its culture have different place attachments to those who use English language to socially construct these same features. This is important for Anglophone MRE developers and marine planners to be cognisant of in order to fully understand Islanders' social responses.

There are many Gaelic names and words to describe the sea, moor and local environment and these shape local culture and the relationship Gaelic speakers have to the environment. There are terms to describe intricate aspects of the moor and peat land which reveal the close relationship people have had with the moorland environment that they have depended on for generations. This richness of Gaelic terms defines Gaelic speakers' thoughts, attitudes and connections towards the moor and the sea and changes therein. Without this language the same places are not imbued with the same meanings.

For instance, the paths to the *shieling* [summer pastures], which as noted in 6.1.1 are now overgrown, are known in Gaelic as *rathad nam banachagan*, literally the road of the dairymaids. There are various terms to describe aspects of the shieling such as *leabaidh*

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*liatha*, a mossy bed where the cattle lie at a distance from the *shieling*, or *cotan*, a place made of turf where calves are kept on the *shieling*. The children's nursery in the town is called *An Cotan*, The Cotan, which is meaningless to a non-Gaelic speaker, but takes on a whole new resonance to anybody aware of the meaning of the word. Similarly, knowledge of Gaelic imbues deeper meaning to the *shielings* and the moor as it is through Gaelic language that this place and its role in Islanders' lives is socially constructed.

Gaelic language attaches importance and significance to the local environment and culture. The same moor and sea are thus framed differently by Gaelic and non-Gaelic speakers as the language which they use to construct it is not the same, and this leads to different social responses between Gaelic speakers and Anglophones, with stronger place attachments existing for Gaelic speakers, particularly, as discussed in 6.1.1 and 6.1.2, among the older generation who grew up utilising these spaces in their daily lives. In contrast, non-Gaelic speakers are more inclined to view the moor and the sea as empty spaces suitable for development as they do not socially construct these spaces with the same human heritage as Gaelic speakers.

Accordingly, Gaelic language and place attachments to the moor formed an important part of local opposition to the large windfarm which was concentrated on the west side of the Island where there is the largest proportion of Gaelic speakers. After the plans for the large windfarm were revealed there was a concerted effort among some of its opponents to illustrate the heritage of the moorland that would be built upon. An important part of this was visually highlighting through art pieces the Gaelic language that described intricate aspects of the moor and with-it human connections. As one of the leading opponents to the large windfarm explained:

"I'm not very political but we're artists so we did what we could.  
Made art about it."

The resulting exhibition *A-mach an glean: A Known Wilderness*, and publication of a moorland glossary *Rathad an Isein: The Bird's Road* (Campbell, 2013), catalogued more than a hundred Gaelic moorland terms and stories known to the older generations and which are being lost with them. These pieces visually illustrated human connections to the moor and highlighted, to both Gaelic and non-Gaelic speakers, the importance of the moor

In sight and in mind: social implications of marine renewable energy in traditional Gaelic and crofting culture, and the importance of Gaelic language in Islanders' social construction of this environment.

Similarly, as set out in 6.1.4, previous generations had a lot of local knowledge of the sea and a rich glossary of Gaelic language with which to describe it. In fact, many Gaelic seafaring terms are Norse in origin suggesting that words were acquired from the Vikings and have been passed on for hundreds of years since. Another publication *Muir is Tìr: The Land and the Sea* written by an Island fisherman Seòras Chaluim Sheòrais (2005) documents the richness and wealth of maritime language and knowledge of local seafarers.

This sea glossary includes details on traditional boats, fishing grounds and navigation, along with terms to describe the sea and weather conditions. Seòras Chaluim Sheòrais details expressions to describe the changing weather such as *an cat na laighe san luathre*, literally the cat lying right up to the fire, meaning colder weather. Or *faoileagan a' cruinneachadh nan sgaothan air tìr*, seagulls gathering in storms over land, denoting wind and rain. Gaelic also has a wealth of terms to describe particular sea conditions such as *sruthladh*, a violent motion of waves advancing upon and receding from the shore. Like the moorland glossary, it reveals the close relationship that people have traditionally had to the sea, and that in using Gaelic language, Gaelic speakers have different social constructions of this marine environment than non-Gaelic speakers, and therefore different personal connections to it.

Today as traditional fishing practices have ceased, the language and knowledge are not being passed on to younger generations as it was previously, but the memories, stories and songs persist and inform the way that Gaelic speakers socially construct the marine environment and changes to it. The role of Gaelic and its decline is discussed further in sections 6.2 and 6.3.

So far in section 6.1 I have discussed Islanders connections to the moor and the sea. To finish this discussion, I contrast how these two spaces are viewed in order to consider how responses to renewable energy projects in these two spaces differ.

### 6.1.6 Contrasting spaces

Islanders have traditionally relied upon both the sea and the moor to provide for themselves. Modern lifestyles mean that neither space is now widely used, but the collective memory of these past activities endures.

Today, just as the moor appears to be an empty space available for wind energy, so does the sea seem suitable for MRE. Some Islanders, however, feel that both the moor and the sea are a common resource that belongs to them, and should remain so.

“The sea is accessible to all of us, as the moor is, and is for all of us.”

Enclosing either of these spaces for private gain is therefore particularly controversial, with the question of who benefits from projects being discussed in the following section 6.2.

Following the proposals for the large windfarm, there was a vocal opposition to the project taking over the moor, with connections to the moor being very important in determining responses to wind energy. There are, however, significant differences in how the sea is viewed compared to the moor.

The *shieling* was a place where youngsters played happily and carefree on the moor during the summer months whilst the animals grazed; fishing, in contrast, was fraught with danger and only conducted by men. Just as people were dependent on fishing as a source of food, “people couldn't survive here without the *shieling*”, as without the moorland pastures it would not have been possible to maintain the livestock on which people relied for milk and meat. There was however a different degree of risk involved with these two activities.

While both activities were necessary for survival, the high-risk involved in fishing meant that it was only guaranteed that you would survive the trip to the *shieling*. Fond memories and narratives of the moor thus persist, as opposed to the fear and trepidation expressed towards the sea.

The activists on the Island who were most vocally against the wind turbines actively articulated the human heritage of the moor and the threat that turbine development would have on this dearly-held heritage. The dangerous heritage of the sea, in contrast, is not held in such close esteem. These different memories and affections that the two spaces hold

In sight and in mind: social implications of marine renewable energy with people mean that the use of the sea for MRE can be seen as less controversial than the use of the moor for wind energy as it is less warmly valued in the cultural psyche.

On the other hand, it cannot be taken for granted that MRE will be opposition free as the marine environment still holds an important cultural place. Furthermore, there is a strong reservation towards undertaking activity in the marine environment which may not lead to opposition, but certainly results in apathy and scepticism towards MRE.

### **6.1.7 Summary**

To summarise this section on place, there are strong connections to the moor and the sea which are understood to be common spaces and any moves to enclose a commons will not be positively received. Any changes to either of these spaces are going to be critically evaluated by Islanders as they are both culturally important. Opposition to development is not place protective action based on threats to wild and natural environments, but rather is centred on protecting the human heritage of functional spaces to which Islanders have strong cultural place attachments.

Gaelic language plays an important role in how indigenous Islanders socially construct these spaces and the attachments that they have to them. The sea is a less controversial place to develop than the moor as the connections are weaker due to the less positive connotations it has in the cultural psyche. However, the fear and trepidation towards the sea leads to negative feelings towards MRE developments in a powerful and unforgiving environment that Islanders are glad to be able to avoid.

In this section, I have discussed the many ways in which Islanders are connected to the local place, how these connections are formed, how they are changing, and how they influence social responses to MRE. In the next section I consider, how MRE projects will impact on the Island and how this influences social responses.

## 6.2 Impacts

A key issue in determining responses towards renewable energy projects on the Island was the perception of the impacts (positive and negative) that might accrue from it. This section discusses the significance of the distribution of positive and negative impacts in informing social responses on the Island and considers how impacts manifest. It looks at economic impacts which Islanders highlight as being very important, but also considers other ways in which MRE projects would have a social impact on the Island. To do this, the section discusses social responses within the context of the Island. It illustrates why the perception of benefits is so important to the Island, but also why Islanders are sceptical about the benefits that projects may actually bring. It further explores the local context to discuss what positive impacts MRE could potentially have.

### 6.2.1 Benefits and trade-offs

An important factor in determining social responses towards wind energy on the Island was the perception of whether it will benefit the Island or not, and this determination is equally crucial for MRE. As a marginal economy suffering from depopulation and outward migration, renewable energy is very much evaluated by most Islanders through a prism of whether it can lead to economic and employment opportunities and with it sustain the population and heritage of the Island. At the same time, as discussed in the previous section 6.1, other Islanders view renewable energy as a threat that will further erode the traditions of the Island and transform the sea and the moor and with it the Island's heritage, and thus see renewables as having a negative rather than positive impact.

This trade-off is at the heart of Islanders' considerations as to whether renewable energy has a positive or negative impact on the Island. In this sub-section I discuss a number of ways in which this trade-off manifests.

One young seaman suggested to me that Islanders would welcome any projects that could boost the local economy, in the belief that this was all many people on the Island valued:

“If you tell people it would bring money, they would go for anything. You could put a nuclear reactor on the moor and if you told people it would bring money and jobs they would say ‘ok’. They think it is just a big empty moor.”

While it might be true that realising economic benefits is the only thing that some people are concerned about, the discussion in 6.1 has shown that there are plenty for whom it is not, as there are many people, particularly older generations, for whom the moor is not a big empty space. If there was only concern about gaining jobs and investment on the Island, then there would have been no opposition to the large windfarm. For many Islanders the positive impacts are considered alongside the negative impacts towards places that have deep cultural attachments:

“What are we losing in order to gain? People with windmills only saw another pound, another pound [motions blades spinning round], without people thinking about all the bad stuff that leads to that.”

While benefits, particularly economic ones, are to be welcomed, they are certainly not universally welcomed at any cost. Social responses result from the perceived trade-off between the positive and negative impacts. The materialisation of positive impacts though do appear to be crucial as without them projects are unlikely to be welcomed:

“I have no objection to my moor, and that is the way I see it, being used for windfarms if there is some benefit to the community. If there is not, then I don't want it.”

Islanders recognised that there are likely benefits from energy projects and that something might have to be given up at the same time, but it is finding the right balance in this trade-off that is important:

“There's far worse jobs than looking at a wind turbine. We have the resource and it should be developed, but we need to get the benefit. Of course we will support it if the price is right.”

This crofter was opposed to the large windfarm yet is clearly not opposed to being next to a turbine if he believed that the community would get something in return. By making reference to it as a job he demonstrates the importance of sustainable income and employment to the area and that energy projects are very much viewed through this prism.

One local seaman involved in the oscillating water column breakwater and slipway project explained that as more MRE plans for the area came forward it led to a growing recognition locally that the stretch of coast was suitable for wave power and that tapping into it

In sight and in mind: social implications of marine renewable energy represented a good opportunity for economic development on the Island. For this reason, despite the scepticism as to whether it could work which has been discussed in section 6.1, the seaman believed that people thought it was worth a try as they recognised and welcomed the opportunities it could bring. This further suggests that people are supportive of MRE in principle but want to get something positive back from it.

Individuals' responses emerge based on their calculation of the trade-off between the benefits and the impacts that a project will have. This is not always a straightforward determination as it involves the values and meaning that people attach to certain things in their lives. This research has identified a range of positive and negative impacts that people consider in their decision-making and the factors that influence their thought processes which I discuss in this section.

There is a desire for industrial development to provide opportunities for working age people to have employment on the Island, but also belief that the development should be of benefit to the Island and the people who live on it, rather than to external stakeholders. People feel a very strong attachment to the Island, even ownership of it, and only want to see energy projects developed if there is a clear benefit to the people who live on it. In the rest of this section I outline in turn the factors which inform the perception of impacts and associated social responses.

### **6.2.2 Reversing depopulation**

The Island has been suffering from depopulation over the past decades as people leave to find better employment and economic opportunities. Reversing this decline is important for Islanders and this is a crucial factor in determining social responses.

“I was in favour of the turbines. I want industry to come here, otherwise we will be an Island of old people.”

A now retired Islander explained that there were no jobs or opportunities for him on the Island as a young man, so he went to Glasgow where there were plenty of jobs. He estimated that out of 18 friends who grew up together only five or six are back home now. As in previous generations, many young people today leave the Island in order to pursue higher education and employment:

“I never wanted to leave but I wanted a proper job. The only jobs here were at the Council. You had to go away to get a proper job.”

This Islander who had recently returned after working away explained that “nobody goes away as a choice, it is a concession”, something that you have to do to advance your career and earning prospects. Whilst she was working on the mainland, she had a “game plan to get home” and had been saving up money to be able to come home and survive even if there was not regular employment available at home.

Another person who had recently returned to the Island after living on the mainland said that when they were “away” they didn't go on holiday anywhere else, that they always came back to visit.

“It is the island mentality, when you're here you want to get away, and when you're away you want to come back.”

This shows that there are people who want to live and work on the Island but are not able to given the current lack of opportunities. Furthermore, Islanders understand this trend of depopulation to be “debilitating” for the Island as it leads to a loss of ideas and traditions. A community elder observed that the depletion of young people is like a treadmill as they stay away to utilise their higher education. He argued that this outmigration is symptomatic of underdevelopment on the Island in that people feel they cannot use their skills here to feed back knowledge into the community. To illustrate this he explained that “people were perplexed that I came back with my doctorate”.

There is a flow of people to the Island looking for the lifestyle that it offers compared to the mainland, though this appears to be atypical, and is limited by the employment opportunities on the Island. A young graduate who had moved to the Island from the city remarked that most young people told him “you're going the wrong way”.

To summarise, halting depopulation is important for maintaining the heritage of the Island, as when people leave, they take the culture and tradition with them. New employment opportunities are welcomed on the Island if they can help sustain the population by keeping people on the Island or drawing people to it. This is however tempered by concern about modernisation undermining heritage which I discuss in 6.2.4.

Claims that the renewable energy industry is going to be a panacea for jobs and opportunities are however treated with scepticism by Islanders accustomed to the ups and downs of industry, and it is to this which I turn in the following subsection.

### 6.2.3 Insecurity of work

In this subsection I introduce the historical insecurity of work on the Island and how this influences the way new industry and opportunity are perceived. This context must be considered in order to understand the way in which social responses to MRE based on economic impacts are socially constructed. While employment opportunities on the Island are highly valued in order to reverse depopulation, previous experience with unpredictable employment means that promises of new employment are received cautiously.

Crofting has traditionally been hard to make a living from and other forms of steady stable employment on the Island have been limited by the seasonality and the volatility of the market. Due to the insecurity of work on the Island, Islanders are accustomed to leaving the Island, whilst it is typical for those who remain to have multiple jobs so that they are not reliant on only one. Crofting and weaving are two activities which have traditionally been conducted together. People may also do landscaping, mechanics, deliveries, or join the coastguard or fire brigade. These experiences influence the amount of faith that people are willing to invest in promises of job creation from new industry and enterprise on the Island.

One industry which did develop on the Island in the 1970s was the fabrication yard on the edge of the town. The yard can complete fabrication work for the offshore oil and gas and renewable energy sectors and has been an important source of industry and employment on the Island. Indeed, the first Pelamis wave energy device was fabricated there. However, the contracts it earns, and the number of staff it subsequently requires has fluctuated over the decades. It is therefore not viewed as a reliable sustainable source of employment.

“We’ve all been through [the fabrication yard], the ups and downs, false dawns.”

Harris Tweed is another important industry on the Island. A manager at the mill in Cearban where the wool is spun and dyed informed me that it is the largest private employer on the Island with 85 year-round employees, and a further 140 weavers employed to hand weave the wool on looms at their homes. Much like the fabrication industry, there is a traditional

In sight and in mind: social implications of marine renewable energy seasonality to the tweed industry, and it goes up and down over time depending on the amount of orders received. As one former weaver recounted, he was weaving 20 years ago when “one day we had tweeds, the next we didn’t”.

I was told by a manager at the mill that the tweed industry almost disappeared in 2009. The mill is now trying to create a sustainable business that can provide reliable employment but confided that it has been a challenge to recruit employees among Islanders sceptical that the industry can be a stable source of income and employment. Indeed, many weavers I spoke to fully expected the tweeds to dip again, and in fact they did whilst I was there, and people who had just taken up weaving and invested in looms as demand had been high, suddenly found that there was less weaving available.

As a result of the seasonality and insecurity of two of the main industries on the Island, people do not view these sectors as secure employment options. If the mill, with a long history on the Island, and as its largest private employer, cannot convince Islanders that it represents stable and secure employment, then there is a significant challenge for the nascent MRE industry to demonstrate that it can provide long-term employment opportunities to the Island. While the possibility of employment benefits from MRE is recognised, part of the scepticism towards it derives from the historic relationship between work and industry on the Island.

In the case of MRE, this scepticism appears to have been well placed as none of the projects planned for the Island have come to fruition, and neither has there been continued MRE related work at the fabrication yard. These failures may have actually reinforced beliefs among an already sceptical public about the prospects for MRE on the Island.

#### **6.2.4 Modernisation**

As outlined in 6.1.1, Island life has changed significantly since the middle of the last century and these experiences of modernisation and development affect the way that future developments such as MRE projects are perceived. Modernisation has brought many benefits to the Island, yet the conservative culture does not readily embrace change and Islanders are conflicted between wanting modern conveniences and maintaining the unique culture and heritage of the Island to which they are closely attached.

I start this discussion with an overview of the impacts on culture and community cohesion on the Island of the modernisation experienced over the past decades, before going on to consider these impacts in the context of renewable energy developments.

One lifelong Cearban resident explained that when he was young all 45 crofts in Lower Cearban were worked. Indeed, they had to be as “the only way to get milk was from your cow. It was very self-sufficient but very hard”.

“Crofting was severe in my lifetime... crofting by itself never kept families going, certainly by 20<sup>th</sup> Century standards.”

“Everything we ate was our own stuff, milk, sheep, herring, veg. I know how tough that existence is. I have no romantic view of that type of work.”

Developments since World War II have brought in mains electricity, water and sewerage, modern household appliances and well stocked supermarkets. However, as outlined in section 6.1 there are strong attachments to place and traditions and Islanders have fond memories of the old ways and look back nostalgically on the traditional crofting way of life.

“[Crofters were] masters of their own lives, they had their croft, their village, they had nobody telling them what to do. They worked hard but stopped whenever they wanted, entertained plenty of visitors.”

“Crofting was a way of life, you were brought up on the croft, you grew your own vegetables, the fishing was good, and you provided for your family.”

“We had an amazing childhood, way better than the Famous Five... There was a lot more freedom.”

People recognise that living standards today are much higher than before and that modernisation has brought many benefits to the Island. Despite this, Islanders are hesitant to embrace change and modernisation as there are many traditional aspects that are valued and people are attached to.

“We like it as it is. We don't want to be improved. There's a lot of talk about [the Island] and the Highlands needing improving, but we don't need improving.”

This resistance to modernisation is culturally embedded as the then landlord of the Island, Lord Leverhulme, discovered a century ago when he proposed his plans for industrialisation and development on the Island. At the time the Islanders were not supportive of the plans which entailed large-scale transformation of the Island and were instead concerned about getting security of croft tenure which would ensure the continuation of traditional ways. Whilst discussing the contemporary difficulties of achieving modernisation, one local seafarer remarked it “didn't work out for Leverhulme [as] he didn't account for the *thrawn* [stubborn] nature of the [Island] people. Who needs infrastructure?!”

The issues which are present today then are deeply rooted in the local culture. It is not the role of this thesis to dissect this conservative culture but simply to recognise that it contributes towards social responses to MRE. As discussed already, there is a widespread scepticism towards MRE based on an understanding of the power of the sea, and a historic scepticism towards promises of new industry. This scepticism also appears to derive from a cultural narrative which doesn't readily embrace innovation.

“Hebrideans are very pessimistic. Sit back waiting, watching this wave machine going up. Saying ‘it'll never work, it'll never work’. Then saying, ‘I told you it will never work’.”

“There is a massive resistance to change, it's getting better but it's slow. We still seem to be several years behind. When I was young the fashion was always a couple of years behind. [Marriage] separation was rare here, but you could see it was common there [on TV soap operas]. So [in the 1990s] we were at where people were in the 1970s. It is the same with same sex relationships now.”

The local culture thus influences the perception of modernisation and the trade-off of impacts involved in MRE projects. Islanders welcome many of the benefits of modernisation and industry, but the conservative culture is resistant to change and cautious of innovation even if this change may have many positive elements. This tempers Islanders' perception of impacts with concern about negative impacts upon the highly valued and unique local culture meaning that maintenance of the status quo is important and anything that might change it is viewed with caution. I next elaborate on this by discussing in more detail how modernisation has affected social capital and community bonds.

### 6.2.5 Social capital

Alongside the positive benefits of improved wellbeing and living standards that have manifested with modernisation, there have also been less welcome changes, and this further makes Islanders cautious of welcoming new developments. Specifically, whilst modernisation has led to material improvements in living standards, there is a feeling that social fabric and community bonds have been weakened. There is therefore concern that further new developments may have negative impacts on social capital on the Island.

Traditionally, crofting was a communal activity with people working together and being dependent on each other. Relationships between crofters were practical and mutual; if you did not go to help somebody with cutting their peats then they would not help you with yours, villagers would fish together and always ensure that people who were not able to fish got a share of the catch.

A person who grew up in a Gaelic crofting family explained that as people used to rely on each other they therefore came to know each other well. Just as people had a functional relationship with the environment, they had a functional relationship with each other. As people have become less reliant on, and connected to, the environment, they have become less reliant on, and connected to, each other.

“People were closer together at that time and got on better, dependent on each other, all work was done communally, a lot of fun, a lot of banter. People are more independent now.”

“People are more stressed now. The art of conversation is gone. People stay home using the internet rather than talking to real people. In the old days they worked hard but had a rest, cleared their mind. You cannot do that now.”

“You could always stop in to see somebody anytime, they would say ‘Come in and have a tea. The scones are just baked’. You would get dragged in. Now they say, ‘would you like a cup of tea?’ That is a subtle but significant difference. People don't have time now.”

As the lifestyle and economy developed people have become more independent and materialistic and there is a feeling that these changes have not been entirely positive as community relationships have weakened.

“We’re no longer a crofting community, we’re a community of crofts, which is a very different thing.”

“When we went to school, we were all the same. All lived in government funded houses, had animals, cut the peats, had a family member, or three or four, who were an alcoholic. Now people have fancy cars and fancy houses.”

“People were content with their lot, now people want more and more. Each house has to be bigger than the last. Everybody used to get a ride to town on whatever tractor or vehicle was passing. Now everybody drives on their own in their own car, each house has two or three cars.”

“Neighbours used to randomly call on each other in the evening and stay for 3 or 4 hours and pass the time. TV has not been good as it has stopped that.”

There is a strong nostalgia for the past in which the social bonds which united the community were stronger. Further talk of development is therefore treated with concern that it may propagate further weakening of social bonds.

The counterpoint to this is that action which may restore these community bonds is needed. Together, depopulation and greater independence have weakened social bonds and civic participation on the Island and led to a depletion in the services available in Island villages including Steall and Cearban. Communal services are very important to maintaining social relationships and individual wellbeing, but these meeting places have disappeared in recent years with implications for villagers. Investment is therefore needed to enable these valued services to continue.

“The crofting has changed; the people have changed. It’s tidied up a lot, become suburban. Then everything has closed. Post office, shop, school, nursery, old people’s centre. The post office was a real blow, it was a meeting point. An old man said to me ‘this place is finished, if they close the post office I might as well give up’.”

To summarise this section, the significant changes which have taken place on the Island over the past decades are important for understanding how future changes, such as MRE projects, will be perceived. Islanders recognise the improvements in living standards that modern developments have brought but are also aware of negative changes in social

In sight and in mind: social implications of marine renewable energy relationships that have occurred alongside material improvements in living standards. Renewable energy projects can therefore be interpreted as having both a positive and a negative impact on the Island. Islanders recognise that developments such as MRE are needed to create economic investment and employment opportunities that will keep people on the Island and provide community services, and with it help sustain the Island's culture and heritage and strengthen social capital. However, Islanders are simultaneously wary that these developments may in fact accelerate decline in traditional culture and heritage and further weaken community bonds.

So far in 6.2, I have identified specific contextual factors of the Island related to the simultaneous desire for development and maintenance of old ways, which influence perceptions of the trade-off of impacts and resultantly social responses. Having looked at local contextual factors, I now turn to project related factors which influence Islanders' perception of impacts, starting with the distribution of impacts.

### **6.2.6 Distribution of impacts**

Whilst energy projects are seen as a much-needed source of industry and economic opportunity, the debate about benefit takes on a new dimension as people discuss where it will accrue. Many people are concerned that the benefit to the Island could be minimal, with most going to the project developers and landowners. Indeed, many people were opposed to the large windfarm because they felt the developers were going to benefit disproportionately compared to Islanders.

“The company would have swallowed all the money, leave the crumbs for the locals.”

“It was a pittance that was on offer and they were enormous. A linear plan following the road all the way to [Town]. The landlord woke up after 50 years of neglect and saw an opportunity. We didn't even know who it was before that. Why should one person make it rather than the people who live here? That was the spur to pursue community ownership. To let the people benefit from the opportunities.”

Interestingly, one businessman who said he personally benefited from each turbine that was brought to the Island stated that he was not keen on having more turbines constructed on the Island. While it was evidently good for him financially, he did not feel that it brought sufficient benefit to the Island more widely. This apparent selflessness is a reflection of the

In sight and in mind: social implications of marine renewable energy  
traditional egalitarianism of crofting and highlights the importance of an equitable  
distribution of benefits to Islanders.

There is a history of local Gaelic song writing to celebrate and poke fun at the people and places of the Island, and this both contributes to and reflects the social constructions of events on the Island. Carrying on this tradition, a Gaelic poem *Na Rothan Gaoithe, The Wheels of Wind*, by Uilleam Caimpbell, mocks the likely benefits of the large windfarm. The poem pokes fun at the scale of the benefits claimed by the projects backers and implies that they are not to the betterment of the Island. I was attending a Gaelic *ceilidh* in the old school at Steall when this poem was performed and caused much laughter among the rest of the assembled group. Not understanding except for the few English words such as 'renewable' which are used for comedic effect, I nonetheless realised that the poem was a statement on wind energy on the Island.

The poem talks of the dramatic changes to the Island that the windfarm has brought, new cars and boulevards, designer goods and luxury food items. The essence of the poem though is that these are not needed on the Island and the windfarm is only of benefit to the English. The development is therefore not in keeping with the Island or to its furtherance.

### Na Rothan Gaoithe

S e na tuathan gaoithe thug piseach oirnn (x3)  
Nuair a thig na rothan gaoithe eadar Barbhas s  
Beinn a Saighde  
Bidh lift off aig Muirneag a h-uile oidhche an arda  
os chionn na rionnagan.  
Space station air an Achadh Mhor son an  
stui readh sabhailt tro na neoil  
Le uidheaman aca de gach seors thug iad a Cape  
Carnabharal  
Bidh na Siaraich falbh air splaoid s bodaich Nis a  
deanamh innte.  
'S fios gu bheil guga ann le cinnt air creagan  
cruinne Jupiter  
Bidh spacesuit aig a h-uile being le Amec sgriobte  
air an druim  
An aite cruach le steidheadh grinn bidh Rolls  
Royce is Cadillacs.  
Bidh Sheiks a fuireach anns a Phairc le sunset strip  
an Gearraidh Bhard  
Embassy aca anns gach aite air na Boulevards an  
Calanais  
Chan fhaic tu collie falbh air sraid, caora dhuibh na  
caora bhan  
Chihuauas corgi air gach lamhair cuairt le  
cailleachan urramach  
Cha bhith bochdainn idir ann cha bhith goinnead  
ann an doigh  
An aite sgadan air a bhord bidh caviar s giomach  
ann  
Designers labels air gach cot cailleachan le or man  
sron  
Diamond bracelets air gach dorns post air fir  
renewable  
Bidh Camilla s Tearlach a tighinn suas chun  
chaiseatl ann an Dal bho Thuath  
S aig a cair anns an Loch a Tuath bidh yachtaichean  
na millionaires  
Air machair Shuainaboist bidh glair le eich s coin s  
tally ho  
Le saeaid dhearg s briogais chlo Na mal a sealg na  
sionnaichean  
Mo bheanna chd aig na rothan gaoithe bheir  
soillse do dhorchadas na oidhche  
Bheirteas s soillse bho na tuinn a leodhas gun a  
Sasanaich  
Ach nuair a thigan latha mor s na councillors a  
lorg a bhot  
Co mheud aca a bhiod sir an dole bho mile iad  
oirnn na monaidhean

### The Wheels of Wind

The wind turbines made us prosperous (x3)  
When the wheels of wind arrive between  
Barvas and Benside  
There will be lift off at Muirneag each night  
high above the stars.  
A space station on Achadh Mor safely  
guiding through the cloud  
The wee machines of every kind taken  
from Cape Canaveral.  
The Westsiders will be off on a mad  
adventure the old men of Ness going along  
with it. It's certain that there are gannets  
on the round stones of Jupiter.  
Everyone will have a spacesuit with AMEC  
written on their back  
In place of well-made peat stacks beautiful  
Rolls Royce and Cadillacs.  
Sheiks living in Pairc the Garryard sunset  
strip  
An embassy in each area with the  
boulevards in Callanish  
You won't see a collie on the road, black  
sheep or white sheep  
Chihuahuas and corgis walking on each  
hand of respectable old ladies  
There will be no poverty at all no one  
wanting in anyway  
In place of herring on the table there will  
be caviar and lobster  
Designer labels on each coat, old ladies  
with gold around their noses  
Diamond bracelets on each fist married to  
renewable men  
Camilla and Charles will be coming up to  
the castle in North Dell  
At anchor in North Lochs will be  
millionaires' yachts  
On the Swainbost machair [sandy soil] will  
be glory with horses, dogs and tally ho  
With a red jacket and tweed trousers  
hunting the foxes  
My blessings to the wheels of wind which  
will give light to the darkness of night  
Richness and light from the [wind] waves  
of [the Island] to the English  
When the big day comes and the  
councillors are looking for the vote  
How many of them will be needing the  
dole because they ruined the moor for us

Islanders recognise that MRE could have benefits to the Island, but as with wind, they question where these will fall. People want to see clear benefits to everyone rather than just a few selected interests and given their experiences of wind and other developments are sceptical that this will happen.

“What’s in it for the bog-standard guy in Steall? Probably not very much.”

“How much does the community really benefit? There are concerns that all the workers come in, but the Island doesn't benefit in any lasting way. That would be my biggest concern would we get anything out of it? I saw that with the new hospital, all the workers came in and the only people who benefited were the [hotel] and [ferry company].”

Marine energy will lead to changes on the Island, such as the construction of new access roads to the shore, and people want to feel that they are getting some benefit in return. The use of the word compensation suggests that the community is bearing something unwelcome and needs to get something in return.

“If the money went back to you or the community for compensation because they would have to put roads in [then it would be ok], but if it was for somebody in London or elsewhere to make money from...”

The distribution of benefits appears to be just as crucial in Islanders’ responses to MRE as to wind energy. So, while there may be benefits available there is a recognition that these need to be distributed fairly and to the community. There may be benefits to the Island but to which areas and people on the Island is not clear.

This subsection has shown that the particular distribution of benefits accruing from energy projects is important in determining Islanders’ social responses. The following subsection will turn to another closely related factor that informed perceptions of impacts on the Island, the scale of projects.

### **6.2.7 Scale of projects**

Another project related factor which influences social responses is the size of the project. There is a feeling that smaller projects are more in keeping with the Island and are more acceptable as they strike a better balance between the positive and negative impacts.

In sight and in mind: social implications of marine renewable energy  
Islanders are not looking for wide-scale transformations but for developments that are proportionate in scale to a small Island and population.

Projects on a small or demonstration scale are unlikely to cause as much negative response and could subsequently be developed further if they are successful. As a few Islanders observed in reference to failed projects such as the large windfarm and Lord Leverhulme's proposal to industrialise the Island:

“Why do they always go for these huge plans?”

Each of these projects proposed to make large transformations to the Island, and Islanders deemed that they were not in keeping with the place. The trade-off between the positive and negative impacts was not perceived to be appropriate and there was little support amongst the local population.

The large windfarm is case in point; if a small project had been developed first, it may not have been so vocally opposed and it may have been subsequently possible to expand it in stages. Indeed, the two commercial developments, with six and three turbines, were both consented and constructed. For many Islanders then, renewable energy is welcomed as long as the scale is interpreted as in keeping with the place rather than transforming it.

“I went to a [large windfarm] meeting and found out how big the turbines were and thought ‘shit’.”

“I don't mind wind turbines, but I wouldn't want a lot of them.”

“One turbine fits in, but 100s would take it over.”

The issue of scale came up in one conversation with a young mother who rhetorically asked me “why would anybody object to wind turbines? We build houses and they don't change the place”. I replied, “what if we built 200 houses?”, and she admitted that a housing development on this scale would change the place.

Contrasting two of the wave energy plans shows the different scale. The oscillating water column plan was for a 4MW demonstration project that would have been localised and required minimal disruption and infrastructure. The development would have been in one

In sight and in mind: social implications of marine renewable energy particular location and affected one village and common grazing. The local responses to the project appear to have been largely positive.

The 40MW Oyster device project would have stretched along several miles of coastline and required much more onshore infrastructure. Characterising the project as a large-scale commercial energy project, one Islander made clear that they felt the scale was not appropriate as it would alter a large part of the coastline.

“It is industrial. It would stretch from here to the [end of the Island].”

This subsection has shown that a projects scale informs Islanders’ perceptions of impacts, with smaller projects being favoured. In the following section, I consider how small-scale projects can deliver maximum benefit through community ownership.

### **6.2.8 Community ownership**

So far in this section I have shown that the perception of positive benefits to the community is central to Islanders’ responses to both wind energy and MRE. I have further shown that positive impacts on the economy, culture and heritage are all desired. In this subsection I consider how community ownership of both the land and wind turbines influences social responses on the Island.

Community ownership of renewable energy projects brings the profits directly to the community, and resultantly provides more money to be spent to the benefit of the community. Community-owned projects are also typically conducted on a smaller scale; the community energy projects on the Island have between one and three turbines, and the size of each individual turbine is also smaller than those proposed in the large windfarm project. As these community-owned projects are conducted on a small-scale and are based on local distribution of benefits, community energy is popular among Islanders and has positively shifted responses towards wind turbines on the Island.

“There was a lot of opposition to wind a few years ago but this has turned around due to community ownership.”

As one of the community energy trusts explained to me, windfarms do not create a significant number of jobs post construction. There is approximately one maintenance job for every ten turbines. The Trust maintains that community ownership provides much more

In sight and in mind: social implications of marine renewable energy benefit to the local area as it captures the income stream allowing that revenue to be spent on other projects locally to stimulate jobs and opportunities.

By capturing the revenue stream, the three large community-owned turbines are providing approximately £1 million for the community each year. This is the same amount per annum that the commercial developer is offering in its community fund from its planned 36 turbine development. The same benefit can therefore be derived from fewer turbines. Community energy can thus be seen as a way of maximising the positive benefit whilst minimising the negative impact.

Even a generally fierce critic of wind turbines had to admit that the three large community-owned turbine “scheme is very altruistic. How can you object to that? They’re offering things to the whole Island.”

Moreover, the revenue from community-owned turbines can be used to fund activities with the aim of improving community wellbeing and generating wider community benefit. As such, community ownership is about taking control of local resources and decision-making and can lead to benefit above and beyond what can be bought with money from a turbine. Community ownership results in community engagement around how to distribute and spend the revenue and empowers the community to take control of its resources, a topic which I develop further in section 6.3.

As outlined earlier in this section the provision of local benefits and distribution of impacts are important factors behind Islanders’ social responses. The clear purpose of community development behind community-owned renewables means that the local benefits are maximised, and the financial gains concentrated in the community.

“We’re not here to save the planet, we’re here to make a difference locally.” Community-owned energy trust member

Community-owned wind turbines, however, are still not universally welcomed, particularly on the west side of the Island. While benefits are welcomed, some people still feel they are giving up too much to get them. The Upper Estate told me that they sense a feeling among the community that the three turbines they already have are enough. They believe that whilst people like the ends of community development they do not necessarily like the means.

The Estate believe that there is a preference for MRE projects in the future instead, where it is hoped that the benefits can perhaps be gained by giving up less in return.

Financing community-owned renewables is difficult and led the Upper Estate to open a community share offer in order to raise funds for their second and third turbine. The share offer raised more than £700,000 from 167 investors located across the country, making the average investment a little over £4000, with, notably, limited investment from local people.

Many of the proponents and beneficiaries of the wind turbines are thus outwith the Estate, and the Island, which appears to diminish the locally-led aspect of the project in some residents' minds. One Estate resident was not impressed about this believing that forthcoming payments would thus not be to the community and that the benefits would instead be distributed "to the investors [who] don't even necessarily live on the Island."

From the Estate's point of view undertaking the share offer was a necessary step in order to raise the finance required to construct the turbines which will ultimately lead to local benefit. The limited take up of the share offer by local residents demonstrated ambivalence towards the project and is reflective of the lack of desire for change discussed in 6.2.4, and a lack of agency which I discussed in section 6.3.

In summary, there is strong support for community-owned renewable energy on the Island as the clear focus on local development that is behind community-owned energy ventures fits with the general narrative among Islanders, discussed in 6.2.6, that renewable energy, wind or MRE, should only be developed if it benefits the Island. However, it may also serve to reinforce this narrative, which could be problematic for the MRE industry which generates less revenues than wind energy and cannot offer the same levels of community investment. The challenge for MRE then is that whilst it may be preferred to wind energy as it is perceived to have fewer negative impacts, it may not be able to deliver sufficient positive benefits to make it a more popular option than community-owned wind. I conclude this section with a final discussion of the trade-offs of impacts.

### **6.2.9 Debating benefits on the Island**

Community energy is favoured on the Island as it is interpreted as representing the maximum positive benefit for the least negative impact. However, as outlined in Chapter 5.1, no new energy projects, including community-owned wind and MRE, can be developed

In sight and in mind: social implications of marine renewable energy at present as the Island's electricity grid is at full capacity. Reinforcing the grid is expensive and in order to finance the interconnector a significant amount of new generation capacity needs to be constructed on the Island. This raises substantial questions about the impacts of new energy projects and their trade-offs.

Neither small-scale community developments nor MRE projects have the size to warrant grid upgrades and are therefore predicated on large-scale windfarm developments going ahead. Taking forward community-owned wind and MRE projects therefore presently rests on commercial-scale wind projects being developed. This places those who may want community-owned energy but not large commercial scale energy in a bind. In face of this problem, most renewable energy advocates are in favour of the interconnector being built, as it will enable more community projects to proceed.

"I've no objection to the big stuff if the wee stuff wins too. You cannot build more community stuff now because of capacity and you need the big stuff to develop the interconnector."

This seems to suggest that it is the distribution of benefits and ownership which are most important to some Islanders rather than the scale.

"I don't think people would object if the majority of the benefit is to the Island. It can be commercial but local commercial."

Other Islanders' though are less supportive of the interconnector as they do not welcome the large-scale development of turbines. As many people seem to like the ends but not the means, given the choice between no new turbines or many, they would opt for none.

"You better enjoy the view while you can because it is not going to last very long. There will be thousands of turbines once the interconnector gets built."

MRE cannot be considered an alternative to wind energy on the Island, as at present it is dependent on the interconnector and large-scale wind developments in order to facilitate the grid infrastructure that it requires. The respective trade-offs of positive and negative impacts between MRE, community-owned wind, and commercial wind are therefore academic as the first two cannot be delivered without the latter. How these potential options could be reconciled is discussed in section 6.3.4.

## 6.2.10 Summary

This section on impacts has discussed the importance of the perception of benefits to informing social responses on the Island. In it I have shown that the Island context leads Islanders to welcome MRE and the positive benefits it could potentially bring, but to simultaneously be sceptical about whether these benefits will actually materialise, and very cautious about the negative impacts that could result. Projects are welcomed if they can provide stable employment and livelihoods that enable people to make their homes on the Island. These opportunities are vital in order to halt depopulation and keep people on the Island and involved in Gaelic language, culture and traditions. If people continue to leave, then the traditions can leave with them. At the same time new ideas brought from outside are perceived as a threat to these traditions as they dilute and erode traditional practices and culture, leading to a wariness towards new industry and developments. Furthermore, prior experiences of insecure employment and unsustainable industries on the Island result in scepticism towards claims that new industries, such as MRE, will indeed lead to secure employment opportunities.

Two further factors which influenced social responses were the distribution of impacts and the scale of projects. Islanders were supportive of projects in which the benefits accrued locally and less supportive of projects that were perceived as benefiting outside interests. Similarly, small-scale projects were perceived as having fewer negative impacts and were preferred to large-scale projects which lead to greater transformations of place.

Accordingly, there is strong support for community-owned energy on the Island as it is focused on providing benefits to local communities rather than to external shareholders. It is also typically small in scale and therefore is perceived to have less negative impact and maximum positive benefit. Nonetheless, community-owned energy can still draw negative responses, as whilst Islanders like the ends, they can still see negative impact in the means.

Individuals' perception of the trade-offs between positive and negative impacts resulting from MRE projects are therefore important in determining social responses. Islanders broadly welcome MRE and other investments, but they want it to benefit the Island.

Determining how MRE can be developed in a way that is favourable to the Island communities requires greater community participation in planning and decision-making, and it is the role of decision-making processes in informing social responses which I now discuss in the final section of this chapter.

## 6.3 Processes

The third broad factor I discuss in this chapter are the processes by which decision-making is achieved, and the actors involved in these processes. Evidence from the Island shows that there is a history of poor engagement processes, and that as a result community empowerment in decision-making is low. This influences how MRE will be received by Islanders and what processes MRE developers should follow on the Island.

Decisions which are perceived to be made without due consideration of Islanders' ideas lead to negative responses. Community development organisations are working to increase local decision-making; however, Islanders are not eager to participate in these new localised processes. Getting Islanders involved in MRE decision-making processes is therefore a challenge for MRE developers and proponents but is one that could lead to positive community benefit.

To begin this section on processes, I first discuss a number of social and cultural factors which are important for understanding responses to MRE on the Island. These factors are also important in understanding the reasons people leave and return to the Island and the attachments that they have to it. In the first subsection I discuss agency and empowerment. This is followed by a discussion on the relationships between indigenous Islanders and the outside world. After that I introduce examples of planning on the Island and how these inform responses concluding with a discussion of energy planning.

### 6.3.1 Agency and empowerment

In this subsection I develop the theme of participation in processes through discussion of disempowerment. Islanders are reluctant to participate in decision-making processes and I discuss the cultural factors behind this and their implications for MRE planning.

Many community events are organised throughout the year such as agricultural shows and fêtes in summer, bonfire night in autumn, and regular fundraising soup and pudding lunches and curry evenings in each village hall. These events were always very well attended, and I found them to be great social occasions. Continuing to run these events, and even expanding them, is important for maintaining community bonds and relationships, and will have a positive social impact for the Island community.

In sight and in mind: social implications of marine renewable energy

Crucially, however, meetings that concerned planning events or projects struggled to attract people. Community projects in Cearban including the polytunnels, museum, village hall and rowing club, all of which aimed to redress some of the problems of disappearing services and communal meeting places, had difficulty getting members of the community to participate. This is indicative of a lack of civic participation, particularly in new ventures.

“If you are prepared to provide something, they'll take it, but don't ask them to get involved. General apathy, that is typical of this island.”

Crofters have long been provided with grants to ensure the sustainability of the practice and their living standards. Families have received grants to do up their houses, or build new ones, to put up fences or improve the productivity of the soil on the croft.

“If there's a grant for it people will grab it without thinking if it is good, bad or indifferent.”

“What crofter ever paid the full price of a fence they put up?”

These grants have been for specific things that support the traditional crofting lifestyle and people rely on them. While there is a tradition of being provided things, as outlined in section 6.2.1, there is not an eagerness for change and development, and there is not a tradition of participation in decision-making beyond the local common grazing level.

“In my mother's generation, things were always done to them, rather than with them.”

The lack of participation in community activities on the Island, the reticence to get involved and to speak out results from many factors going back hundreds of years and which stems from the influence of outside actors which I now discuss.

### **6.3.1.1 Culture of disempowerment**

Contemporary non-participation and reticence to change is deeply rooted on the Island and I discuss here where it originates and how it manifests in practice.

Islanders suggested to me that disempowerment has built since the 18<sup>th</sup> Century post-Culloden era. During this period policies were enacted to suppress Highlanders', reduce their independence and ensure their loyalty to the Anglophone Crown.

“We’re a very subdued people. They’ve done something to us. After Culloden they tried to crush us, crush our language, crush the clans, ban the kilt. Like the Native Americans, the Maori, the Aborigines.”

The influence of one of these polices remains today in the Island’s strong Presbyterian culture. Presbyterianism was promoted across the Highlands in the post-Culloden era as a way of asserting English cultural influence and control and Calvinism took hold on the Island during the 18<sup>th</sup> and 19<sup>th</sup> Centuries (MacDonald, 1998). Many people working in community development on the Island today believe that the Calvinist culture promoted by the Church continues to contribute to a culture of disempowerment on the Island by reducing Islanders’ self-agency and available leisure time on the Island. As a powerful local institution that is at the heart of Island culture and identity, I discuss here how this is relevant for community planning processes including MRE and subsequently influences social responses by limiting willingness to participate in planning and articulate real opinions on these matters.

These critics of the Church viewed it as an institution that “crushes the ego” and holds back progress as it “stops you from being anyone in this life, from bettering yourself, being creative”. With the salvationist message leading to a mentality that “somebody else is going to cross the [sea] and save us” rather than giving people self-agency.

“They [the Church] think we’re here to suffer. They want us to be miserable... Some old people only see the postman. Maybe they go to Church on Sunday only to be told they’re damned, they would be better off staying at home.”

“Religion means that you’re here to suffer, you’re chaff in the wind. It doesn’t matter because you’re doomed to failure, but don’t worry because you’ll go to heaven. Don’t get too big for your boots or somebody will smite you down.”

“[Church] features in every organisation on the Island. It’s organisations that have shed that jacket that are moving forward. The biggest issue for the [town] Trust is not how to develop a goldmine of wind, it is whether the golf course should open on a Sunday.”

Sabbath observance means that Sundays are a quiet day on the Island. Saturdays in contrast are very busy at the sports centre and supermarket; children’s birthday parties,

In sight and in mind: social implications of marine renewable energy DIY, sports clubs and all other non-essential activities must also be done on Saturday. This reduces the time that people have for getting involved in pastimes like rowing or tending the community allotment, which cannot be done on a Sunday (Figure 6-1). The Sabbath could thus be seen as limiting the time available for leisure, innovation and participation in community planning and as such, albeit indirectly, disempowering.



**Figure 6-1: "Sign outside a Westside playpark" by the author, June 2016**

As a result of these historic factors, of which the Church is just one, which limit innovation and self-agency, Islanders are not accustomed to articulating their views on issues, at least in public.

"Everybody knows everybody and are very judgemental. People are therefore afraid to take responsibility as it can incur criticism. They [others] will say 'that's a stupid idea'."

"People here are very afraid to give an opinion. To say what side of the fence they are on. At a meeting only one or two people will ask questions, but then outside they will all be talking about it. You are so open to criticism that people do not want to put themselves out there."

"People are incredibly well-mannered and polite which leaves them reserved. Reluctant to speak up about what they're unhappy about unless they know you or are one-to-one."

These accounts of non-participation chime with the way that Parman (1990) describes decision-making being conducted during her time on the Island. She explains that nobody was prepared to make a firm suggestion as to when an activity like the *fank* [communal sheep pen used for sheep dipping] should happen. Instead, people would offer a suggestion such as “how about we do it Tuesday?” and then wait and see how people responded to the proposal. Eventually through this process a decision would be reached that nobody objected to.

This longstanding, cultural unwillingness to advocate for a viewpoint or to get involved in project planning has implications for conducting public engagement and for achieving positive social impacts.

As discussed throughout section 6.2, Islanders recognise both the need for economic development and that they are less close than they were before and wish for stronger community relations. At the same time, they appear to lack the skills or desire to engage in processes around community development and planning that may restore these links.

In the following subsection I discuss another way in which disempowerment manifests and that has implications for planning processes on the Island: cliques.

#### **6.3.1.2 Cliques**

Other themes present on the Island which are associated with disempowerment and the inability to resolve differences include the formation of cliques, the exclusion of outsiders or newcomers, the maintenance of traditional ways, and the enforcement of group norms. Rather than resolving differences and working together people tend to adopt entrenched positions.

Several times I was told of people from Cearban who wouldn't go to church or other community events in Steall and vice-versa.

“[If] Cearban is doing something, Steall doesn't want to be involved, and if Steall is doing something, Cearban doesn't want to be involved.”

“Cearban and Steall will argue, then when [next village] comes along they will get together to argue with them. Then the west side will join to oppose town.”

For Churchgoers the institution is an important and positive influence in social life. It binds people together and they build up strong relationships with everyone who goes there. This leads to house fellowship whereby parishioners visit each other's homes after the service and further strengthen their bonds. However, it can be to the exclusion of others.

"It's a big social thing the Church. You wouldn't be aware of it [from outside]. They're very supportive and protective of each other. It's exclusive, however much they say it's inclusive, it's not."

Another interesting aspect of the Church on the Island is that there are many different denominations of the Church as groups have split away from the main branches to form new ones. These splits have been broadly about disagreement of Church management and worship practices, such as whether music is allowed in the Church.

"[It's] one of these [Island] things where people take the ball away with them."

"It [religion] is supposed to promote peace. They are like squabbling children, 'mine is better than yours'."

This helps to highlight the lack of processes that can resolve differences of opinion even within members of the same broad grouping. Where differences of opinion arise, Islanders are not well-practised at following processes to resolve them and instead revert to cliques.

This was further illustrated during a public meeting on the proposed renovation of the Cearban community museum. The project to restore the building and reopen the museum had been led by a local community group who had organised the meeting in the village hall to discuss the architect's plans for the renovation. After the plans were announced they were met with some disapproval in the community and this opposition was made clear at the meeting by one individual, though most of those present remained silent and I could not work out what their real opinions towards the plans were. During the meeting I caught the eye of one of the silent attendees, who I believed to be an opponent, and was given a wink and a sly smile. What this meant for what side they were on I'm not sure, but it suggested that it was all just a game and perhaps they didn't really mind one way or the other. As some people had explained to me, people in the community "like a bit of needle" and "want to be on one side or another".

This shows that people are willing to have an opinion or take a side and may actively seek to do this in certain circumstances but will not want to do it publicly. This unwillingness to speak up, or eagerness to pick sides has implications for conducting deliberative planning on the Island. The reluctance towards participation in decision-making means it is difficult to know what people's real opinions are towards proposals which therefore makes it challenging for policy-makers and community planners to operate on their behalf. I discuss this with reference to Sabbath observance and community energy in the next subsection.

### **6.3.1.3 Real opinions**

The following examination of the Sunday opening issue shows, that without effective processes designed to encourage debate about the issue and allow people to express their personal view, it is hard to know where public opinion on this issue actually stands. There are similarities between how views are expressed towards Sunday opening and renewable energy.

Sabbath observance and the role of the Church divides opinion amongst Islanders. There are Sabbatarians who strongly believe in the sanctity of the Sabbath, while there are others who feel that the Church has too much influence and that people should be free to do what they want on a Sunday.

Sabbath observance, however, is an important part of the culture of the Island which makes it more than just a religious practice. As one incomer observed it also makes it "more powerful, more deserving of respect, and harder to change". Islanders therefore want to protect the Sabbath not just on religious grounds but also to preserve the culture and traditions of the Island. The tradition and routine of having a rest day on a Sunday is one that many Islanders say that they appreciate and do not want to lose.

I found that getting Islanders to speak openly about their views on the Church was difficult as many people did not want to discuss the topic with me. The most common response I received was that people appreciate having a relaxing day in which they do not have to complete chores or have engagements.

"I love Sundays, the fact that you don't do anything, or have to do anything. I wouldn't change it."

From my discussions with Islanders it became clear that while many do not personally believe in observing the Sabbath, they do it out of respect for others and to maintain community harmony, and do not wish to actively take steps to end the practice.

“You can ignore it [Sabbath observance] and say ‘fuck you’, and some people do, but I want to live here for the rest of my life.”

Understanding where people’s real views lie on this issue is difficult without a deliberative process that encourages people to speak openly. This was illustrated by one Islander who told me that he was in favour of Sunday opening, and explained that people had told him they were in favour of Sunday opening at the sports centre, but who then appeared as signatories to a letter from the Church opposing it. It is unclear then where these people’s real opinions lay.

I was never quite sure then whether the response that people like Sundays was a genuine one or simply one that people were accustomed to articulating in order to avoid conflict with Sabbatarians or anti-Sabbatarians. Indeed, this response neither supports the sanctity of the Lord’s Day, nor suggests that they do not support the Sabbath, and fits with the suggestion that people do not want to state their real opinions for fear of incurring criticism.

In relation to responses to community energy, as people came to repeat the line that they like community energy in much the same way that they like a peaceful Sunday, I wondered whether this response was in fact genuine, or was a response that was articulated to avoid criticism from either the staunch opponents or supporters of wind turbines.

As stated in 6.2, the issue of the large windfarm, and wind turbines in general, split opinion on the Island with people both strongly for and strongly against. As I have shown in this section, Islanders do not like to engage in debates or publicly give an opinion on sensitive topics. Finding out where Islanders’ real opinions towards MRE lie is therefore a challenge that planning processes need to be aware of and address.

In this section, I have used the example of the Church and the Sabbath to illustrate the lack of empowerment that Islanders have in speaking up on difficult issues. Furthermore, the narrative of the Church’s teachings appears to restrict the desire for change and development. The disagreements within the Church reflect a lack of agency on the Island

In sight and in mind: social implications of marine renewable energy for dealing with disputes and contentious issues in a positive and open manner. This highlights the importance of strong processes for decision-making and planning on the Island.

All these issues have implications for the way that planning and engagement around MRE should be conducted and how it will be received. Specifically, it raises questions about how to have an open debate about whether MRE raises positive opportunities for the Island or represents negative developments, and in what circumstances, if any, it should be welcomed. People clearly do have opinions, but a lack of empowerment restricts Islanders from offering their real opinions on controversial matters. Islanders need to be empowered to participate in decision-making and to have their voices listened to and respected and their ideas taken forward.

Following this discussion of agency and empowerment, I next look at how relationships on the Island also inform planning processes.

### **6.3.2 Home and Away**

As already discussed in 6.1 and 6.2 of this chapter, Islanders have strong place attachments based on the linguistic and cultural heritage of the Island. In this subsection I consider how these place attachments affect relationships between indigenous Islanders and incomers and in turn how this affects planning processes, community priorities and social responses.

Islanders often refer to the Island as 'home' and the mainland and elsewhere as 'away'. This terminology highlights not only the attachment to home but makes it very distinct from other places which are away. The differences between home and away, and between indigenous Islanders and those who have moved in from other places take many forms and manifest in different ways. In general, locals are friendly to incomers and there are no issues between them, but there appear to be factors which keep a degree of separation.

Islanders have traditionally been dictated to, and excluded from decision-making, by outside officials who have different priorities for the community, and this has contributed to the disempowerment outlined in 6.3.1. As a result, Islanders are suspicious of ideas and regulations originating from outside the community and I now discuss the relationship between insiders and outsiders.

### **6.3.2.1 Insiders and outsiders**

There are clear differences between the philosophical outlook and behaviours of locals and incomers, and this influences the way that they engage with each other, with decision-making processes, their priorities for community development and ultimately their social responses to projects. Here I first outline this distinction before discussing how it informs social responses to projects in the community. There is a difference in participation in community projects between locals and incomers and in the perception of what constitutes a positive social impact. I observed that many locals are involved in genealogy and local history projects that enhance and maintain traditions and heritage, while incomers tend to be more involved in new community development projects.

A local community magazine publishes a list of births, deaths and marriages and these often include the names of people born 'away' to grandparents on the Island. Whilst it is clearly of local interest what is happening to relatives who are 'away', in contrast, there are seldom names of incomers living in the area listed. I was informed that incomers are welcome to list their announcements in the magazine, but either they do not wish to submit them, or the editors do not effectively solicit them.

People with ancestral links to the Island have strong connections which it can take incomers many years to develop, as the following examples illustrate. I asked one middle aged man who had lived on the Island since he was a child whether he considered himself to be local. He replied, "I do, but they don't!"

One weekend an Australian gentleman and his daughter came to visit Cearban as his wife's great aunt had been from the village. This lady was known to the villagers and accordingly this Australian had a genealogical connection to the and was welcomed as a part of the community. In contrast, incomers who do not have a place in the local croft history or genealogy do not have a clear reason to be there.

Both the Steall Community Trust and the Lower Cearban Development Trust had young development officers whose parents were from the Island but had grown up in the Central Belt. The family of one officer was from the village and his grandmother still lived there, while the other officer's family was from the other side of the Island. The first officer was more readily embraced into the community as he was already had an established place in the community.

Genealogy then determines who is an insider and who is an outsider, but other differences in outlook also mark a distinction such as the attitudes towards Island culture and heritage. One overt distinction is the attitude towards the church, with differences between churchgoers and non-churchgoers. As one local churchgoer observed, “incomers don’t go to church”, suggesting that they do not integrate with local practices. From the incomer perspective, it was explained to me that it is hard to have a meaningful friendship with someone when they talk about creationism and you fundamentally disagree.

An outward looking, non-church going local remarked that “even if you went to church, they would find a fault with you ‘like you don’t wear a hat’”. He explained that the differences went deeper than attitudes towards the Church and as “people have been born together, gone to school together, worked together, retired together, it makes them very inward looking.” This doesn’t encourage innovation and makes it hard for incomers and new ideas to be accepted and relates to the discussion on change in 6.1.1 and 6.2.5.

During my time on the Island I certainly found it easier to talk to incomers or to people who have been away and lived elsewhere. I found these people to be more open and less guarded, and accordingly the conversation was more natural and felt more comfortable. I was wary of overemphasising the difference between outsiders and locals but discussing it with the outward looking local got affirmation that “there are [differences] and sometimes they are not so subtle”.

These subtle, or not so subtle, differences between insiders and outsiders mean that there are different conceptions of how planning processes should be conducted, and the types of development which are suitable for the Island. Furthermore, projects or regulations proposed by outsiders are subject to suspicion which can lead to less favourable responses. I illustrate this point by referring to community-based development projects.

At an event organised by the Lower Cearban Development Trust to showcase the local projects that had been previously funded by the Trust, as well as projects that other organisations on the Island were running that might have been of benefit to people in the community, I was struck that the external organisations promoting housing and conservation projects were all represented by incomers. In contrast the local community groups were all represented by locals.

With the exception of the rowing club, which was initiated by an Islander now living away, none of the community-based projects that the Lower Cearban Development Trust has funded with its wind turbine profits have involved any innovation. The projects have all been existing projects that needed financial support to continue. This further emphasises that whilst incomers are pushing innovation and new developments, Islanders are content to maintain existing standards and consider this to be a positive social impact.

Following this showcase event, I discussed the project the housing agency were promoting with a local who had attended. This project was offering to help finance the repair and renovation of the abandoned houses that dot the Island. The local had been struck by a person from England proposing what should be done with old houses and suggested that they did not know anything about the area, as the old houses are typically poorly constructed and very difficult to improve. The local person believed that people build new houses for a reason and that is because they are cheaper, safer, and more functional. Indeed, it is a phenomenon I observed across the Island that incomers like to buy an old house and do it up, whereas locals much prefer to build a new one. This highlights both the different priorities and outlooks of locals and incomers, and how the former respond to projects proposed by the latter.

The events I witnessed on the Island with regard to empowerment and outsiders are also similar to those described by Hutchison (2003) in his account of Lord Leverhulme's plans for the Island in the early 20<sup>th</sup> Century. This underlines how these phenomena are historically and culturally embedded. Leverhulme wanted to develop an industrial fishing industry on the Island, but Islanders were not supportive of these plans as they simply wanted to maintain their crofting livelihood. Hutchison recounts one recorded incident in which Leverhulme gave a final impassioned speech to a group of crofters setting out his vision and trying to persuade them to support it. When he finished, he was given a round of applause which led him to believe that he had finally won their support, when in fact they still had no intention of supporting him. Afterwards, they were asked why they had applauded and said that he gave a good speech and it was polite to clap him for it.

This shows the differences in approach between insiders and outsiders and how this leads to different expectations of how planning should be conducted and the social impact that a project should have. I next explore how this informs responses to proposals by outsiders.

### 6.3.2.2 Views on outside actors

As discussed in section 6.2 the conservative nature of many Islanders affects how they view change. Another factor which influences responses is the actor behind the change. In the previous subsection I identified the tension in outlooks between insiders and outsiders and this extends to how outside actors are viewed.

“[The Island] is quite racist. We can go anywhere in the world and have a Burns supper. We say people are our greatest export. But if anybody comes here with new ideas, we say they’re affecting our culture.”

“People view change with suspicion, and it depends on who is creating the change. If somebody comes in to create change it is super suspicious.”

Outside organisations such as the Royal Society for the Protection of Birds (RSPB), Scottish Natural Heritage (SNH) and Historic Scotland, were quite unpopular and mistrusted as they were perceived to be dictating what crofters can and cannot do. There is a perception that these organisations have too much power to create conservation areas that restrict land use options that could generate opportunities to keep people on island.

Historic Scotland for instance will not allow renewable energy projects near to historic standing stones, which is a real issue for the community-owned estate the most famous stone circle is located within. Crofters believe geese to be a real problem as they destroy grazing land and make it impossible to produce good silage as there is too much geese poo. The RSPB protects these geese which crofters find a nuisance. Crofters also expressed concern about possible changes to traditional practices such as a proposal from SNH to stop peat cutting or stricter regulations from the Crofting Commission on croft management.

“They’re [SNH] a quango so that makes them dangerous.”

“Quangos have knowledge of sorts, technical knowledge... Those people have no idea what it’s like to live in a crofting area. One time this carbon emissions thing came through, ‘stop ploughing your croft’. Then you can’t grow any vegetables. Many things they tell you don’t make sense to a crofter.”

There was a strong idea that people in Edinburgh, London, or Brussels were dictating to them and over regulating things. The frustration that these crofters felt in having their

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traditional knowledge and practices undermined appeared to contribute to a loss of  
wellbeing.

“This is really pissing people off.... Most crofters in my age group  
are giving up.”

This contemporary antipathy towards officials dictating what locals can do is not a recent phenomenon and is not only confined to outside officials. Crofters have traditionally been very independent and are hostile to anybody within the community dictating what they can do. In sections 6.1 and 6.2 I introduced Gaelic language song and poetry to illustrate how the concept of place attachment and distribution of benefits were socially constructed, shared and embedded in Gaelic Island culture. Similarly, the hostility towards officials can be seen to be an entrenched part of Island life as evidenced in the local song *Amhran Na h-Officials, The Official's Song*.

### Amhran Na h-Officials

'N cuala sibh nand' fhi dir sibh *officials* an raoir,  
Thàinig iad don bhaile seo an tui team dubh na h-oidhch;  
Le *walking stick's bowler hat's* còmhradh deas nan Gall,  
'S e tactics a' *Gestapo* bha na Sàtain ri toirt dhuinn.

Na mharbh sibh bò, na molt, na caora, na crileigach de laogh,  
Na mharbh sibh chearc den bh' a in an spiris, no an coileach bh' air an ceann;  
Ma mharbh sibh càil chan fhaod sibh inns, bidh leth na lideadh feadh na sgìre,  
Bidh an ceòl air feadh na fìdhle's bidh *officials* a-nall.

Bidh muilt ri falbh nam feadhlaichean's iad a mèathachadh na saill,  
Bidh bodaich's iad ri mèaranaich gus fiacail chur nan druim;  
Bidh bhò bhlàr a' ruith am mhonadh gun sgrìd-laoigh na pinnt de bhainne  
Chuireas ùilleag air a' bhrochan's chan eil math ach e bhith lòm.

Tha taigh air ceann am bhaile againn ach an t-ainm chan fhaod mi inns,  
Bha leth tèas am bharaill ac gun fhalach air no nì;  
Nuair dh' eubh na nàbannan san dorus, sud Catrìona chaidh i seachad  
'S gu robh Còinneach leis a' bharaill cur nan caran dhi dhan (dìg).

Bidh cailleachan ri turraban, ri giùram, is ri caoidh.  
Na *rations* air a druideadh orr's na h-uighean fàs cho gann;  
An sìoman chleachd a bhi ri bragal le annlan cruaidh gu goinne'n earraich  
Chan fhaic thu air ach stocainn *Dallas*, treallaich *fancy*, 's gùntan oidhch.

### The Official's Song

Did you hear and did you notice officials last night?  
They came to this village at the dark fall of night;  
With walking sticks and bowler hats and the southern foreign tongue,  
It was the Gestapo's tactics that Satan was to bring us.

If you kill a cow, or ram, or ewe, or a runt of a calf,  
If you kill the hen inside the roost, or the cockrel on the roof;  
If you kill anything you cannot tell, or half the news will be all over town,  
There'll be music of the fiddle and the officials will come.

Rams amongst the sands washing out to sea,  
The old men just yawning, thinking of getting a bite out of them;  
The white cows running the moor, without a calf or a pint of milk,  
Add an oil-film to the stew it'll have to be meagre.

There's a house at the top of the village, but its name I cannot say,  
Half a cow in a barrel out of sight from anything;  
The neighbours shouted through the door,  
"There's Catriona, she went by"  
Kenneth with the barrel did cartwheels to the ditch.

The old women will shake their heads, complaining and lamenting,  
The rations being kept from them and the eggs now so few;  
The hanging rope that once was stocked with drying meat till the hunger of spring,  
You'll see none but Dallas stockings, fancy rubbish, and night gowns!

### 6.3.2.3 Energy project proposers

This common distrust towards outside actors illustrates generally negative views towards outside directives and interference in Island life. Accordingly, it is not surprising that the origin of energy project proposers influences responses towards the project with projects initiated locally being more favourably received.

The large windfarm plan was brought forward by a French multinational company, while the commercial six-turbine project was constructed by a company from Devon. This led to the motives of the developers being questioned.

“If you’re from Devon and you want to put up a wind turbine why don't you do it there?”

In contrast, the idea for the oscillating water column (OWC) wave device came from within the community. Members of the community wanted to develop the slipway in order to take boats out and were advised by a local engineer that a breakwater would be required in order provide shelter to make the launch area safer. The idea for installing the wave device followed on from that.

“We wanted a slipway and anything else was a bonus. The community were very much in favour. Nobody came to us, we went to them.”

According to both a local boat user who initiated the OWC project and the local engineer who took it forward, the immediate local community was supportive as the impetus came from the community and they were kept informed all the way. There were no objections to consent which, according to the engineer, was unheard of as far as the project’s multinational backer was concerned. As the engineer explained, “there was somebody engaged by the community doing something for the community so there was trust.”

The community-owned North Estate were said to be in favour of the OWC project. In contrast, when the Oyster development was planned the Estate was more cautious and not entirely pleased at the approach from the developer. According to the Estate, the developer wanted the Estate to be in partnership with them and share their risk by giving them cheap rent, but the Estate wanted to deal on a strictly commercial basis. From the Estate’s point of view, they felt that the developer had come in and thought they would

In sight and in mind: social implications of marine renewable energy naively accept what was offered. A situation that was described as akin to “red Indians meeting the white man for the first time”.

The background and motivations of those proposing projects has a strong influence on responses to them. Projects which are locally-led are perceived to have more concern for local interests and provide greater benefits locally, while externally-led projects are perceived to serve corporate or external interests. This has implications for how outside agencies proposing MRE projects on the Island might be viewed by Islanders. Giving people more power to decide how to manage their land, sea and resources is clearly important to them.

So far in 6.3, I have discussed how distrust of outside agencies, together with other cultural factors contribute to a situation where Islanders have a low sense of agency and empowerment in decision-making processes. I next broaden the discussion to look at other ways in which planning processes on the Island influence social responses. These examples examine more localised plans which were brought forward in order to develop projects that were intended to serve the community. These examples underline the difficulties in utilising the proceeds of renewable energy to achieve community benefit. They further suggest that achieving consensus around a plan is an almost impossible task.

### **6.3.3 Local processes**

Through my experiences on the Island I witnessed several consultations and the ways in which they engaged people, and people engaged with the decision-makers. These suggest that it is both the people making decisions and the processes that they follow which are important in determining social responses. Examples of processes leading to frustration and dissatisfaction include those led by the Council, the *Comhairle*, and by community organisations and I now discuss these in turn.

#### **6.3.3.1 The Council**

Distrust and displeasure with planning and decision-making on the Island is not reserved to outside organisations. The *Comhairle* and other Island bodies are also unpopular:

“This Council isn’t known for fairness.”

“There are too many vested interests in the Council.”

Here I outline two examples of poor consultation conducted by the *Comhairle* that I observed. First, was a consultation on proposed cuts to the *Comhairle's* spending on certain services due to budget cutbacks. As part of the consultation, the *Comhairle* produced a list of items that it proposed to cut in order to meet its budget restrictions and put this out to the community to consult on which cuts should be made. The total savings identified in the list were slightly more than the savings the *Comhairle* stated that they needed to make, therefore almost all of the items, and all of the big items, would need to be cut in order to balance the budget.

I attended a packed meeting at the council chambers where members of the community argued passionately for saving many of the services proposed to be cut pointing out that they were valuable to Islanders. In the eventuality almost all of the items on the list were indeed cut. This consultation did not therefore really engage the community in deciding how to spend the budget and by making the cuts it seemed to ignore the results it received. It appeared tokenistic and designed merely to demonstrate that there had been consultation. This process therefore had the effect of cutting off meaningful participation in the decision-making. It is therefore easy to see why some people do not have faith in the *Comhairle's* decision-making processes. A history of being left with no opportunity to positively participate, only to voice opposition, is disempowering and results in people feeling that participation is not worthwhile.

At this meeting in the council chambers people did speak up loudly and publicly give an opinion about the budget. It seemed to me to show that people did want to be involved in decision-making and be consulted on local issues. Though as one local observer wryly commented to me "they will always tell you if you propose something they don't like". This reiterates that people do want to contribute but are not used to being afforded the opportunity to do so positively and in that sense are being disempowered.

The second example I witnessed of the *Comhairle* conducting opaque consultation concerns Sunday opening of the sports centre. While I was on the Island a campaign group was set up to push for Sunday opening of the *Comhairle* run sports centre as a public service to those who wanted to use it on that day. The *Comhairle* was resistant to this move and employed various tactics in order to avoid having to make a decision on the request. A process that led one Christian to comment that "defending Christian values with non-

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Christian means” was not a good procedure. Finally, the issue was brought to a council meeting where the proposal was rejected on financial, rather than religious grounds. Public submissions revealed by the *Comhairle* showed that letters of objection to the proposal heavily outnumbered those in support, and were based on religious, rather than financial, objections. As discussed in 6.3.1.3 it is difficult to elicit Islanders’ real opinions on this topic, and the *Comhairle* was happy not to try and do this as obfuscation suited their interests as they tried to avoid open debate on this emotive issue.

These examples of poor public engagement are evidence of the *Comhairle* not listening to people and disenfranchising them from participation in decision-making. I now look at participation in community-led processes.

### **6.3.3.2 Community-led processes**

The Island's community trusts have made a number of attempts to try to engage and consult their community members and enable community members to lead the local decision-making process and determine priorities on what projects the trusts should develop in their communities. Despite this there has been limited participation amongst community members, and disagreements about local plans. I now discuss these examples to show that in a culture of disempowerment designing open engagement directed towards community-led development is not automatically going to facilitate participation and that opposition can arise to locally-led projects.

Since its inception the Lower Cearban Development Trust has attempted to engage its residents to determine their priorities for community development. They have conducted community surveys and held community consultation events. I attended a community consultation event, held following the most recent community survey, at which community members were invited to select which of the projects suggested in the survey responses they would like to see the Trust take forward. This approach then clearly, and successfully, gave those people who attended the event the power to decide on projects for Lower Cearban. One local person who attended told me that they really enjoyed the event and were very positive about the new opportunity to participate in decision-making by “ranking, choosing, picking priorities [as] that stuff never happened before.”

However, there was minimal community attendance at the event which suggested that most people were not keen to use this power. Perhaps though they felt that they had

In sight and in mind: social implications of marine renewable energy already exercised it with the survey, or with the consultations that were conducted in previous years, or perhaps the timing of the event was not convenient. As one Trust committee member reflected “are people not interested, or are they happy with what is happening and happy to let us get on with it?”

I discussed with a representative of the Trust why in order to generate the original list of priorities that were ranked in the consultation event, they had issued a questionnaire to every household rather than begun with a more participatory method. I was told that the Trust had asked the community how they wanted to be consulted and that they had indicated that they liked questionnaires. I wondered whether a community which is not used to being consulted was aware of other more participatory methods that could be used. Though perhaps people who are disempowered, wary of change, used to tokenistic consultation and who do not like expressing their real opinions felt that a questionnaire was a safe option that did not require them to undertake deeper engagement. Either way, the Trust has significant sums of money generated by the community-owned wind turbine to spend on projects in the community but find it difficult to engage people in developing or participating in these projects.

In order to further consider how decision-making processes operate on the Island, and the implications this has for social responses towards projects and achieving positive social impact in the community, I next look in more detail at two community projects in Cearban which show that negative responses can occur even to small community level projects designed explicitly for the benefit of the community. In turn this demonstrates the difficulty in achieving positive social impact through projects, which requires more than investment but also effective processes.

### **6.3.3.3 Achieving consensus**

Traditionally decisions within the community were made together, collectively, and people would not do anything without getting their neighbours agreement first. In 6.3.1.1 I outlined that achieving consensus was a difficult task and influenced people to be cautious in expressing their opinions. As I now show, this illustrates why gaining participation in community projects is difficult and why people might be upset when they are imposed on by developments on which they have not been adequately consulted.

The Lower Cearban Development Trust received external funding to construct polytunnels and a community garden to encourage the community to eat healthy local food. The tunnels are open to the community but, as I alluded to in Chapter 4.3, not many community members were involved in growing produce.

The polytunnels have been constructed on a side road at the higher end of the village. This was the third site that was considered as a location for the community garden, and ideally it would have been located more centrally in the village. The Trust wanted to gain community support for the garden and tried to get consensus within the community about where to build them. Objections were expressed by villagers located near to the first two proposed sites who were concerned with about noise and traffic, so the Trust sought alternative sites.

After this the Trust decided that it was becoming too difficult to achieve consensus within the village so went ahead and made a planning application to the *Comhairle*, as they had to meet the timeframe set by the external funders. Planning permission was granted by the *Comhairle* as the planning officers deemed that the plans were in accordance with the planning guidelines and objections about noise and traffic were not valid. This experience shows the difficulty in building consensus and buy-in for a community-led project which is designed to serve the community.

Another community project involved the renovation of the old church in Cearban which a local group were trying to restore as a community museum. Architects were employed to develop plans for the building that would be able to attract the external funding required for the renovation. Conscious of the local objections which had delayed the polytunnels, the plans were submitted directly to the *Comhairle* for planning permission. After which “there started to be some disquiet in the community” as some people were not happy with them as they included a modern extension which would have changed the character of the original building and impacted upon the available light in the neighbouring house.

A meeting was subsequently held in the village hall to discuss the plans during which the opponents made their views known. There was no disagreement about whether the museum should be renovated, only whether this was the appropriate renovation and whether the committee had adequately represented the community in advancing these plans, with the suggestion that “the committee did not consult on what they were submitting on our behalf.”

The objections at the community meeting were led by one individual and it was hard to discern how widespread the disapproving voices were, though it seemed to be quite clear to me that several others were also opposed. This is yet another example of the difficulty in establishing real opinions outlined in 6.3.1.3. The museum committee were frustrated that they had privately received support for the plans, but that nobody would publicly air it at the meeting. As one of the elders said:

“They’re very good at telling you what they think about it before the meeting, and again afterwards, but they never say anything in the meeting.”

The committee felt that they had taken this project on when nobody else in the community was prepared to get involved and had represented the community to the best of their abilities to get the museum developed for the community. The contrary argument was that in representing the community they must therefore make sure that everybody agrees with the plans, but as the polytunnels had proved this is a very difficult task.

After the meeting I spoke to community elders about the difficulty in achieving consensus. They explained that in the past “you wouldn’t do anything without speaking to your neighbour first and if he didn’t like it you would find a compromise”. More recently though instead of finding a compromise people have started deferring to the local authority planning guidance which sets out what is and is not acceptable development. Another community elder explaining that “if the law says it’s okay then they do it. They can then say ‘it is not my fault, blame the Council, they permitted it’”.

The planning law however follows technical guidelines and does not require meaningful community participation and is therefore different to traditional community decision-making. As an opponent of the museum plan said “the [*Comhairle*] planning committee will look at it with cold technicality. We should address it with compassion as a community.”

These incidents thus illustrate that there are different approaches to the way planning should be conducted with different groups having different priorities. They also reiterate, as set out in 6.3.1, that people are unwilling to publicly give their opinions or get involved in leading and developing community projects.

Achieving community consensus is a seemingly impossible task which can hinder the implementation of projects and explains why as outlined in 6.3.1 people are reluctant to make proposals as there will always be somebody against them. This has led community groups, which predominantly consist of incomers, to break with traditional community ways of negotiation in favour of outside regulations, the very thing many people in the community profess to dislike. However, whilst this may speed up the deployment of projects it does not lead to more positive social responses or greater positive social impacts as it can reinforce disempowerment and exclusion.

Finding effective planning processes in a community that says it wants to be consulted and does not like having things imposed upon it, but then does not want to participate in shaping decisions when it is given the chance is very challenging. In the next subsection I look at how these challenges relate to energy.

### **6.3.4 Renewable energy processes**

So far in this section I have shown that Islanders are distrustful of outside actors, feel disempowered from decision-making and that this influences levels of engagement with participation in planning. In this subsection I present further evidence of how decision-making processes inform social responses to renewable energy projects.

The processes that a project's proposers follow are important for informing social responses both in the project planning phase, but also in the operation phase where ongoing engagement is needed around the distribution of benefits.

#### **6.3.4.1 Marine**

The planning processes involved in MRE projects are important for social responses, as whilst the devices may be located offshore, the associated infrastructure and project construction will be centred onshore. Getting support from local landowners and communities is therefore essential for MRE projects and can be the hardest part of project development and thus requires effective engagement. I now look at how process informs responses to MRE and the challenges and opportunities for MRE planning processes.

In 6.3.2.3 I outlined how the local impetus for the OWC breakwater wave project led to favourable local responses. Related to this was effective engagement which maintained

In sight and in mind: social implications of marine renewable energy trust and kept the community informed all the way. The process then was important in ensuring positive social responses.

In contrast, it was shortly after the large windfarm plan was scrapped that plans for the Oyster wave energy farm were introduced, by another outside developer. I was told about a public meeting in Cearban where the developers had been invited to come and present their project. In one account of this meeting it was recounted with a grin by an Islander that the man who had come from Edinburgh was quite shocked to find that all these old people were both very sceptical of the project and very informed about it and asking where the pylons and buildings would go.

This account fits with that of the Upper Estate I outlined in 6.3.2.3 that the developers did not initially appropriately engage the community landowner. The Estate considered that the developer did not understand how to conduct community engagement and did not see it as important. After initially being very wary of the developer's proposal, the Upper Estate eventually agreed terms with the developer to use their land. After giving their support to the project, the Upper Estate led community engagement around the project on behalf of the developer and conducted consultation events within the community. This approach focussed on being transparent with the community to engage them with the plans for the wave farm and outline how it would impact the area. This was something that the developer had not been conscious of doing and local responses to the project could have been different without the Estate acting as an intermediary between the developer and the community. For example, when one negative headline about the project appeared in the local press the leading opponent was personally reassured, and their concern was dispelled.

In this instance the developer had to work with one community landowner who helped facilitate community engagement processes. Elsewhere on the Island, another community organisation that was interested in developing tidal energy within a sea loch with strong tidal flows made clear the terrestrial planning difficulties that would need to be overcome, in addition to all the technological issues. The area has a number of landowners who would all need to be in approval and who have different agendas such as preserving the nearby historic sites and maintaining the salmon run on the river, making developing a project here much less straightforward.

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Similarly, an MRE professional living on the Island, recounted issues with terrestrial consenting for a project on the mainland and maintained that the onshore consenting is the hardest part of MRE project development. The company apparently had all the permissions for putting the devices in the water but could not get agreement from one landowner to run cables across his property to connect to the grid, as he was demanding a much higher price, based on wind industry norms, than the developer was able to offer. This is the same point that I made in 6.3.2.3 with regards to the Upper Estate expecting higher payments for hosting the Oyster infrastructure than the developer initially offered.

The importance of early engagement for maximising benefits was further illustrated by the initiative of one local stakeholder who worked to set up a business that could have provided many of the services required in the construction and operation of the wave farm. Without early engagement this would not have been possible, and the services would have had to be provided by contractors from off the Island.

#### **6.3.4.2 Wind**

In this subsection, I first discuss processes in relation to community-owned wind in Cearban, and then look at how the consultation process, or lack thereof, was a factor in informing social responses to the large windfarm project.

Developing community-owned wind turbines with the express purpose of community development is far from straightforward and can still cause negative responses within a community. The completed community turbines took many years to complete and as one member involved in the Lower Cearban turbine observed “it is remarkable that it got built at all.” The technical process involved in developing the plans and seeing them through to completion require expertise in finance, planning and project management that are not widely present in rural communities. In Lower Cearban, the process from the initial idea through to construction and operation was largely down to one person’s skills and perseverance. As a member of another community trust explained:

“The only reason for doing community energy is community development. We’re not masochists.” Community-owned energy trust member

Whilst in Lower Cearban they were able to complete this long process and build the turbine, in Upper Cearban they were not. I was told that Upper Cearban had well developed

In sight and in mind: social implications of marine renewable energy plans to construct five turbines before Lower Cearban started their project. I heard various stories about why it failed, but it seems that there were disagreements within the community and that despite being a community initiative not all members were in favour. There were seemingly disagreements amongst the group taking it forward and opposition from respected community members. As one villager commented:

“I like community energy, but it can cause conflict in a community. A lot of things in a village cause conflict.”

Another villager explained Upper Cearban “was way ahead of [Lower Cearban] in developing turbines. But the likes of [names respected community member] blasted it out of the water. [The leader of the Lower Cearban Trust] was able to ride over it, have a reasonable discussion about it and push it through somehow.”

In the case of Upper Cearban then, building community consensus around the plans had proven to be impossible and eventually they were abandoned. In Lower Cearban, a project led by incomers rather than locals, they had been able to follow the statutory planning guidelines and work through to the project completion. Of course, building the turbine is one thing, achieving ongoing engagement in how to utilise the revenues and achieve positive social impacts from them is another.

“I always said building them was the easy part, now there is 20 years of agreeing what to do with it [the income].”

Community-owned energy is thus not conflict free and planning processes influence both the ability of a community to complete projects and the responses of community members to them. Having touched upon the importance of processes for community-owned wind developments, I now look at the case of the large windfarm.

There was a feeling that the large windfarm was being imposed on the Island as the developers came from outside and submitted their plans without consulting the community. Islanders stated to me that the developers of the large windfarm conducted no consultation until after opposition arose; only then did they hire a community liaison officer. When members of the community tried to express their opinions, they felt that they were not listened to:

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“[The developers] make you feel like cretins for not agreeing with them. They make you feel small for opposing having it in our backyard.”

“[The developers] were not honest about how much they were going to make and how much the community was going to get.”

In this case, the process itself informed responses towards the project and the developers and generated emotional responses. Indeed, the planned project reportedly divided the Island with members of communities and families split over the issue. The planning processes used at the time were clearly not able to result in mutually agreeable outcomes. While the *Comhairle* backed the project, they had not acted as an effective intermediary between the developer and the community in the way that the Upper Estate did with the Oyster wave farm. The *Comhairle* unreservedly supported the large windfarm development and therefore was not in a position to be an effective intermediary. This further speaks to the lack of trust that people have in the *Comhairle* and the lack of effective engagement by the *Comhairle* in conducting other decision-making consultations set out in 6.3.3.1.

More than ten years after the first proposal for the large windfarm, the developer is still pursuing plans for wind energy on the Island. The size of the planned windfarm has been reduced and there is now a concerted effort to engage with the community and promote the community benefit payments that will be paid to the community; a community liaison office has been opened and a new liaison officer has been hired. Through 2016, whilst I was on the Island, the developer published quarterly newsletters updating on progress with the project plans and sponsored local events and organisations. They also conducted community engagement events within the community to determine how the anticipated £1,000,000 annual community benefit fund should be distributed. The community have also been offered a chance to take a 20% ownership stake in the windfarm.

By adopting this new strategy of better engagement, less wind turbines and more community benefit the developer is clearly recognising that these are important factors in gaining positive social responses to the project. On the corollary, the developer then implicitly recognises that in the first proposals the consultation process was not transparent and engaging, that the size of the windfarm was too large, and that the amount of community benefit on offer was too small.

This new approach however remains tokenistic in that the developer and the *Comhairle* still believe that the windfarm is good for the Island and should be developed. There has not been a shift to debating the principle of what renewable energy developments, if any, are appropriate for the Island. I discuss this in more detail in the next subsection.

### **6.3.4.3 Energy planning**

So far in Chapter 6, I have identified a range of social responses to renewable energy developments on the Island and discussed the breadth of factors which inform them. As I outlined in Chapter 5, it is not presently possible to develop any new projects to further exploit the Island's wind and wave energy resources as the Island's electricity grid is at full capacity. New projects are thus dependent on the completion of expensive grid upgrades. In turn this grid upgrade, in the form of a high voltage direct current interconnector to the mainland, is dependent on significant new electricity generating capacity being installed.

Debates about whether MRE is appropriate for the Island are thus intrinsically tied up in debates about whether other forms of renewable energy are good for the Island. MRE therefore cannot be seen as a less controversial energy option for the Island, because it can only be developed as part of a package of energy options. Here I discuss why taking a holistic approach to energy planning is important and how the current framework and priorities do not achieve this.

The existing planning processes around energy infrastructure are orchestrated individually for each component of an integrated energy system. This means that there is no opportunity for the public to participate in decision-making around the larger question of what the energy future on the Island should be and what energy projects and infrastructure are appropriate for the Island. As this chapter has shown, there are many different viewpoints towards how these natural resources should be exploited, or not, yet consultation within the current planning system is highly tokenistic and does not allow substantive participation in this important local issue.

Critics of the prevailing approach to renewable energy planning believed that other options for developing the Island's renewable energy resources could have been more widely explored. The original large windfarm project included the construction of the interconnector and since then the *Comhairle* have backed plans for the interconnector and commercial windfarms on the Island. Many Islanders who I spoke to however, particularly

In sight and in mind: social implications of marine renewable energy those from community energy organisations, were critical of this approach. They believed that the *Comhairle* was “wedded to the idea of the interconnector”, and had therefore neglected to explore any opportunities to develop innovative ways of generating and consuming renewable energy on the Island which could have undermined the case for the interconnector.

In the meantime, the grid has reached capacity and all renewable energy developments have stalled, while possibilities to pursue hydrogen technologies, smart grids, electric vehicles, battery storage or other on Island uses for electricity have not been pursued. Indeed, it appears that rather than encouraging energy innovation on the Island, the *Comhairle* have been waiting for an outside body to provide standard energy infrastructure. This is reflective of the disempowerment on the Island outlined in 6.3.1.

New plans have been developed for the interconnector which conform to the new proposals for the scaled-down large windfarm. In October 2015, I attended a consultation event held one evening at a hotel in the Town to gather feedback on the proposed siting for the interconnector substation. The event was hosted by the company who build and maintain the transmission network, and had posters of the plans and a team of smartly dressed staff to explain them (Figure 6-2). Located upstairs inside the hotel only a handful of people came to view the plans and the team had a quiet evening.



**Figure 6-2: “Interconnector substation consultation event” by the author, October 2015**

This lack of public attendance at the event suggests that people either had no objections or that the process did not sufficiently engage them. From my perspective, the siting of the substation was probably not very controversial, but I believed that the principle of its construction was more so. However, there was no scope to object to the interconnector in principle as part of this consultation. That decision would be made following a separate planning application to Marine Scotland. Furthermore, I was told that there would be a separate consultation event for the plans for the distribution cables from the substation to the wind turbines. The turbines themselves were subject to separate planning application and had already been granted planning permission.

As this shows, the planning process considers all elements of the project separately and spaced out over a long time period, in this case years. This makes it difficult for the public to engage with each element as part of a collective whole and with the fundamental question of whether the overall development is a good one, and who, if anyone, should undertake it.

These are important questions as the plans for the interconnector and the revised windfarm are not without controversy and attract mixed social responses. The new plans for the large windfarm have been contested by the large community-owned turbine group who would like to develop the entire windfarm under community ownership and have been pushing to get permission to do so, arguing that this would bring much greater benefit to the Island.

The *Comhairle* however, is backing the private developer who already has permission from the Town Trust to construct the turbines on its land. The large community-owned turbine group argue that as community-owned land it should be for the community members to decide who can develop turbines on it, and that as a community organisation they should be allowed to do so. This issue is related to cliques set out in 6.3.1.2 whereby different groups will not work with each other to common shared ends but instead are exclusionary and work to their own ends.

At present of course, nobody can develop turbines without the interconnector or other transmission solution in place. Whilst the community-owned developers on the Island welcome the interconnector in principle as it will enable the construction of more community-owned energy, they worry that all the transmission capacity will be taken up by the large commercial developers and that there will not be spare capacity available for

In sight and in mind: social implications of marine renewable energy small community-owned projects. Furthermore, they disagree with the commercial principles under which the interconnector must be developed and would like to see the Scottish Government fund it in order to facilitate the development of community-owned energy projects on the Island.

The broad and overarching question then is whether Islanders want to see the interconnector built and turbines erected, and if they do on what scale and by which developer. However, this question is not being addressed in any of the planning processes which treat each aspect of this broad question separately.

This issue is directly relevant for MRE when thinking about community engagement and consultation around project plans and understanding whether the community are in support or not. MRE projects also consist of multiple elements, and social responses are formed based on all aspects not just one. The holistic picture therefore needs to be considered in order to properly appraise social responses and community support, it cannot simply be assumed that because MRE is less visually intrusive that it is more socially acceptable without considering other factors. Further, MRE cannot be an alternative to wind energy as it necessitates wind energy to fund the transmission infrastructure it requires.

In section 6.2.9 I discussed how Islanders debate the trade-offs in impacts from different energy projects with some welcoming the interconnector and large-scale energy developments and others preferring to restrict development to a handful of community-owned turbines. Public participation in planning could address this overarching issue of what development is appropriate rather than being restricted to consultation on individual elements of this big picture.

Without processes that are designed to hear all voices and opinions and demonstrably try to reach consensus, even if this is not possible, there are always going to be people who argue that it should be done differently. Whilst shutting off debate may help get plans through statutory guidelines and get projects built, it does not build the community support for the project that is needed if the project is to have positive social impact on the community.

### 6.3.5 Summary

In summary, this section on processes has identified a lack of agency and empowerment on the Island. This influences participation in decision-making processes and the extent to which local people and organisations are willing to innovate for new ideas and novel projects and technologies. It has further shown that the historic relationship between insiders and outsiders informs engagement with planning and responses to proposals, with general scepticism towards proposals made by outsiders.

The apparent distrust in decision-makers and seemingly poor consultation practices present in other aspects of planning on the Island are likely to influence the way that MRE plans and consultations are received. While projects may be supported in principle, without proper community participation in planning processes it is possible that negative responses to specific proposals can arise.

There are important decisions to be made about what type of energy developments and infrastructure are appropriate for the Island and how these can most positively benefit the Island. Effective, transparent consultation is therefore important for MRE projects, and the Island's wider energy future, but there is a real challenge in designing engagement practices that will encourage people to participate in the decision-making process given the levels of disempowerment, reluctance to voice real opinions and participate in decision-making and planning, and tendency to form cliques.

At the same time, Islanders want to have a meaningful say in decisions that affect them but need to be empowered to participate in the process and have faith that they can influence the outcomes. The consultations that I witnessed led by governing authorities were largely tokenistic and did not enable community members to adequately influence decision-making. If this could be done successfully and the existing barriers to participation overcome, then that would constitute a positive social benefit to the Island. The community trusts on the Island are endeavouring to facilitate greater community participation in planning and this is something that other planners and decision-makers could learn from, particularly in regard to determining how the Island's energy resources can be most appropriately exploited.

## 6.4 Conclusions

In this chapter I have outlined the range of factors related to place, impacts and processes, which inform social responses to renewable energy projects on the Island. There are strong attachments to place based on traditional Gaelic and crofting culture which Islanders want to protect, and which inform social responses. Renewable energy is interpreted as both protecting and threatening the heritage of the Island and thus place attachment leads to both positive and negative social responses.

From a place attachment perspective, the Island appears to be a good social fit for MRE as the coastline and marine area are underutilised so marine space users would not be affected, while place attachments to the sea are not as strong as to the moor, making MRE a less threatening form of development than wind energy. MRE, however, does require onshore infrastructure so place attachment to both the marine and terrestrial environments inform social responses to MRE.

This chapter has demonstrated that perceptions of the social impacts of projects are critical to social responses. If the project is believed to be of benefit to the community then it will likely be welcomed. If not, then the rationale for it will be questioned. What is interpreted as a positive impact and what is not, is however closely tied to interpretations of threats and enhancements to place and dependent on individual perceptions and social constructions of heritage and change.

There is a strong desire for industry and employment creation to halt depopulation and attract people to the Island and this is an important factor behind support for renewable energy. The creation of new industry and infrastructure is interpreted by some as a necessity for sustaining livelihoods and in so doing protect traditional culture, language and ideas, yet, for others, these new developments are seen as a threat that could further erode this very same diminishing heritage. Procedural issues such as the perceived fairness of the distribution of benefits and openness of engagement processes are therefore important and can heavily influence responses.

In general, for Islanders positive social impacts do not involve the widespread transformation of the Island, but instead support the maintenance of its culture, heritage and community relationships. To this end, small-scale community-owned renewable energy projects are looked at favourably as they focus on providing local community benefits and

In sight and in mind: social implications of marine renewable energy less widely transform the valued landscape. Similarly, MRE is looked at positively as it is perceived to be smaller in scale and have less visual impact than wind energy. The counterpoint to this is that as a nascent industry MRE projects are not able to generate as much financial returns to invest into a host community as wind energy projects. Getting a better understanding of non-financial and secondary benefits to communities from MRE projects could therefore be important for informing positive social responses.

Lastly, the chapter has demonstrated the role of planning processes in determining social responses and that without meaningful early and ongoing consultation negative social responses can occur. On the Island there is a general disempowerment from participation in planning and decision-making based on cultural factors and a history of exclusion by governing authorities. This leads to a general distrust in decision-makers and officials and scepticism towards innovation, particularly towards new projects proposed by outside actors. Accordingly, negative social responses can occur to MRE projects proposed by outside developers and from planning processes that do not fully engage the local community.

Effective public engagement is therefore required in order to give Islanders meaningful involvement in decision-making in their community and ensure that processes which are perceived as unfair and opaque do not lead to negative social responses. The Island has significant wave and wind energy resources, and polarised views on how these should be exploited, if at all. Meaningful community participation in planning would help to ensure that whatever decisions are made are respected and lead to positive social impacts for the Island.

Having presented the findings of the in-depth Island case study, I now present the findings from the broader Dialogue workshops.



## Chapter 7 The Dialogue findings

In this chapter I present the findings from the public dialogue workshops held in six communities around Scotland. As I introduced in Chapter 4.2, the Dialogue was commissioned by the Scottish Government to develop new knowledge on the social impacts of ORE, which, as outlined in 2.2, is currently lacking. Following the depth of data presented in the preceding Island chapter, the data from the Dialogue provides a breadth of discussion from the six workshops and demonstrates the potential transferability of the key issues that emerged from the Island data to other communities.

Participants at each workshop evaluated three ORE scenarios, offshore wind 1, offshore wind 2, and tidal; these are detailed in Chapter 4.2.3. Participants discussed these scenarios in detail as a group, and with the Government representatives, and considered the positive and negative impacts that they thought each scenario might have on the local community.

The data from the Dialogue workshops shows that in communities around Scotland, as on the Island, it is the perception of impacts which most strongly influences responses to MRE with a clear desire for positive social impacts to manifest from projects. To this end, the tidal scenario was widely preferred as it was interpreted as having the most local benefit.

Furthermore, this chapter shows that processes and attitudes towards officials are crucial in informing responses. Participants had limited faith in the way much decision-making occurred in their community and this influenced their responses towards the scenarios. Participants wanted the public to be more involved in decision-making, and given the lively discussion towards the different scenarios, which demonstrated a range of views, early public engagement processes appear to be key for including the public in debate around which projects, if any, are most suitable for their area.

I begin this chapter with a discussion of place. In each workshop location, participants expressed strong connections to their area and the people who lived there, and it is these relationships which were important in participants' determination of the impacts of ORE projects. Responses towards the scenarios differed slightly between the workshops and this was based largely on local contextual factors.

In the second section, Impacts, I discuss how participants perceived the scenarios to impact upon the people and places that they cherish and how this influenced their responses. In

the third section, I discuss how the participants interpreted planning processes and how this informed their responses to the three ORE scenarios.

## 7.1 Place

An important theme which came out during the workshops was the things that people valued in their lives and the sense of community that participants had. They had strong connections to place and to the people who lived there, and this strongly influenced how they responded to the scenarios. There were different social responses between people at each workshop, and between workshops as different place attachments and personal values led to perceived differences in social impacts.

In each workshop it was clear that participants cared deeply about their community and what happened to it. They discussed how their communities had changed, what made them special, and how they could be improved. The ORE scenarios were then evaluated according to what social impacts they were perceived to have on the local area and its people. In particular, it was the perceived impacts on the strengths of a place such as a pleasant environment and good community relations that people valued and wanted to protect, and on the weaknesses of a community such as lack of infrastructure and employment opportunities that people wanted to be rectified, that informed responses.

Participants were not asked to talk directly about their own communities as the focus of the workshop was on discussing the impacts on a generic community. Throughout the workshops however, participants referred to their own communities and the impacts that ORE would have on them, rather than on the hypothetical community. Indeed, the generic towns that participants created on the map often reflected the locations the workshops were in. A Forth and Tay participant observed that his group made a town on the map like their own, “one with no commerce on the waterfront, unlike other towns in the area”. In Moray Firth, a group put a river through their town, just like in their own village.

These strong connections that participants had to their community strongly influenced their responses to the ORE scenarios. The connections that people have to their community and environment clearly, though perhaps subconsciously and imperceptibly, extend beyond the foreshore and out to sea. Despite the offshore wind turbines being located out to sea, it was felt that the project would still belong to their community. In this sense it is hard to consider an ORE project as out of sight and out of mind.

“Why do we think that this is part of our community, which I do, when it is so far out?” Argyll participant

I now detail the positive and negative connections that participants articulated towards their communities that influenced their responses to the scenarios, before discussing how personal values change temporally and spatially, and influence perceptions of change.

### **7.1.1 Positive connections**

Participants talked about what they value in their life and their community and protecting these positive aspects was important for them. Primarily, what participants valued was their relationships with the local environment and with local people, family, friends and neighbours. The ORE scenarios were evaluated for whether they would negatively impact on these positive and valued elements.

Participants in all the workshops also expressed how much they value the environment and physical landscape, including the seascape, and that they have very close connections to it.

“I like [Solway] because there are lots of great spots around that you can drive to and visit.” Solway participant

“When you live inland and you come to see the sea it is wonderful.” Forth and Tay participant

Accordingly, concern for protecting the local environment was an important consideration for participants in determining responses to the ORE scenarios.

“Everybody who lives here is lucky to have it [the beauty of the sea] and we need to protect it.” Forth and Tay participant

Connections to place were particularly strong in the Highland and Island communities where participants mentioned issues around local identity, heritage, culture and Gaelic language that were unique to the area as being highly valued to them.

“It feels like the Island is your home. I pick up litter in the woods and it feels like you’re cleaning your living room”. Argyll participant

As well as having strong connections to their local environment, participants spoke about the positive social elements of these rural communities. The strong community spirit in

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these places was mentioned with participants talking about the close relationships that they had with their neighbours and fellow residents. These relationships were valued and cherished, and participants were wary about developments that could lead to the loss of these positive aspects of their community.

“I went to Canada for a month to visit my sister and I didn't even lock my door!” Argyll participant

“If you break your arm here there's a line of people waiting to take you to the hospital.” Moray Firth participant

The positive place attachments that participants felt across all the communities, and the perceived social impacts on them were important for determining their social responses to the scenarios. Equally important were negative connections to place, which I discuss next.

### **7.1.2 Declining communities**

The close connections that participants had to their communities ensured that they wanted the best for the area and its people. In many of the communities, however, participants talked about how their areas had declined and their concern for the long-term future of these communities. This negatively affected the pride that they felt in their community and led to a desire for investment that could bring positive change.

“This community is like lots across Scotland, just hanging on by the fingernails.” Moray Firth participant

The issue of community sustainability was therefore very important for participants, particularly in the Highland and Island workshops, as well as the Solway workshop. There was concern expressed in these communities about the insecurity of employment with there not being jobs for life anymore, and about depopulation, predominantly among young people. For example, participants in Argyll explained that the island's population has decreased massively as farms have gone from employing twenty people to two.

Declining populations make it harder to maintain vital services like schools and hospitals, without which communities become less desirable places to live. Participants were also worried about the expense of other services like transport, fuel and energy and that this made life in the communities more difficult.

In these declining or underdeveloped communities, some of the workshop participants mentioned how they lacked the confidence to tell people where they are from because they felt that their locale did not have a good reputation or was not well known.

A: "We want to get recognised for where we live."

B: "I always tell people I live south of John O'Groats."

A: "We all do." Moray Firth participants

"I'm mortified to say that I am from [Solway] because it is all users and empty shops." Solway participant

In this sense a new project which could give the place a new reputation or recognition would be a very positive social impact as it would give people renewed pride in their area. There was further hope that the ORE projects in the three scenarios could have a very positive impact on the communities through investment and job creation.

"Could turn town back to life again because it is a ghost town."  
Solway participant

"Revitalises it because these communities are dying." Moray Firth participant

Strong community connections therefore led to both positive and negative social responses to the ORE scenarios depending on whether participants viewed them as having much needed positive social impacts or not. Individual values also inform perceptions of change and responses to the scenarios and I discuss this next.

### **7.1.3 Perceptions of change**

The interpretation of changes that might occur in the community as a result of ORE projects is central to informing social responses to the scenarios. In most workshops, participants were actively looking for some positive change in their communities which they felt were suffering. The notable exception to this was Forth and Tay where the no change option was viewed more favourably.

A: "People don't like change."

B: "It depends on whether the change is positive or negative in individuals' lives." Central Area participants

"Islanders have embraced change all down the line." Argyll participant

Participants' willingness to embrace change depended on their personal values and circumstances, as well as that of their community. Participants observed that the things that they value have changed over time. What is important in people's lives is therefore fluid and can change temporally and spatially.

For instance, incomers to Moray Firth observed that the things that are important to them have changed since they moved there from the city. One participant commented how the shops used to be very important when living in the city. Another said how their business used to be 24/7, and how money and material things were valued and competed for.

"My neighbour had a two-year-old Merc. My Jag was three-year-old, so I had to get a new one. Now I run a ten-year-old car and don't care." Moray Firth participant

In other workshops participants talked about how aging made you re-evaluate what is important. For instance, a retired participant who had spent their career at sea, was now having a life of leisure, walking, watching sport, and going on sunshine holidays.

"It used to be work, work, work, but not anymore." Solway participant

"Satisfaction is before career now, but it used to be the opposite." Forth and Tay participant

These changes in the participants' lives had been positive for them leading them to feel more contented with a slower pace of life. In contrast the changes that people felt had been happening in their declining communities had not been viewed positively. Further changes that could reverse the trend were therefore welcomed.

To summarise this section, the strong connection that people in the workshop areas have to their community is important for understanding their responses to MRE and the way that they interpret the changes that it may bring. People are concerned about both improving their declining communities, but also maintaining the cultural and social bonds within them. Differences between communities leads to different interpretations of the impacts that ORE may have, and it is the perception of the balance between positive and negative change that is crucial to participants' responses. In the next section I expand on how perceptions of impacts inform social responses towards the ORE scenarios.

## 7.2 Impacts

Participants' interpretation of the impacts of the three ORE scenarios was the main factor in shaping their responses to the scenarios. Through their discussions participants identified that there were a range of potential social impacts that might result from ORE, and their responses to each scenario were primarily informed by how positively or negatively they perceived these impacts to be on the people and places that they valued in their community.

Participants welcomed ORE where it was interpreted as having positive local benefits. In contrast, where it was not perceived to have positive benefits then support was much more limited. In general participants were more interested in ameliorating the positive social impacts of ORE than mitigating the negative impacts.

"I'm all for renewable energy but the impact it can have is vast."  
Central Area participant

"It's needed, renewable energy, so we have to do it even if there's impacts, but communities should have a say in getting benefits."  
Central Area participant.

"If you're being visually impacted by an offshore wind farm you should benefit. I can be bought! My island needs the money."  
Argyll participant

As participants discussed the potential impacts and benefits from the scenarios, they naturally weighed the scenarios against each other in their evaluation and tended to respond more positively to the tidal scenario which was perceived to have greater local benefits. Participants had differing perceptions of the balance between negative impacts and positive benefits and therefore different social responses. There were also differences in responses across workshops reflecting the different local contexts at each location.

In the following subsections I discuss in turn the range of possible impacts and benefits that participants identified as potentially arising from the scenarios and how these influenced their responses. There were two issues that were most frequently raised as benefits that participants wanted from an ORE project, jobs and cheaper energy, and I discuss these factors in 7.2.1 and 7.2.2.

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In 7.2.3 I discuss the distribution of benefits which was also important to participants who expected positive local benefits, particularly when there were perceived negative local impacts. The issues of visual impact (7.2.4) and infrastructure and services (7.2.5) were also important considerations for participants with discussions about how to balance the positive and negative impacts associated with these factors. The legacy (7.2.6) of benefits was another significant concern for participants who wanted a lasting positive impact from ORE projects not just a short-term boost. Finally, in 7.2.7 I discuss how participants considered ORE within the context of other energy options.

## 7.2.1 Energy prices

Participants were keen to derive positive benefits from the ORE scenarios. As these ORE projects were designed to produce electricity, cheaper energy for the local area was widely seen as a positive benefit that could be provided.

“If you build turbines and then you cannot afford to put a fiver in your metre, what’s the point?” Solway participant

Electricity and petrol cost more in the Highlands and Islands than in the Central Belt and participants in these locations were concerned about energy prices. The electricity supply is also less reliable in these areas, with power cuts occurring more often. In addition, participants were frustrated that they were paying more when the north of Scotland is rich in oil and renewable energy. For these reasons there was a strong feeling that cheaper energy should be a benefit from renewables projects.

“Every pensioner in [Moray Firth] wouldn’t be paying for electric if it was down to me in a community fund.” Moray Firth participant

“Historically we have suffered from power cuts, so it is a contentious issue.” Argyll participant

“All the oil is off the coast and we’ve got the highest fuel prices in Britain. We’ve also got the highest electricity costs. I dinnae ken why we’re paying 6p more a unit up here.” Moray Firth participant

As under none of the three scenarios, was free or subsidised electricity to be made available to the community, this factor did not lead to different responses between the scenarios. They were all viewed negatively for it.

“The only thing that benefits is if the jobs come in because we are not getting the power.” Argyll participant

Along with cheaper energy, employment opportunities were seen as the most important benefits that a community could get. These two issues speak to the primacy of direct economic benefits for participants.

## 7.2.2 Jobs

Secure jobs were widely described as the most obvious manifestation of sustainable benefit for a community and were a key factor in determining social responses. Participants were very concerned about the number of jobs that would be created by ORE projects and whether local people would have the requisite skills to get these jobs.

Jobs were seen as important in many workshops as people recognised that job opportunities were limited in their communities and that many young people had to leave to find regular employment.

“Young people are haemorrhaging.” Argyll participant

ORE was therefore seen as an opportunity to bring employment prospects to communities that needed them. This was particularly strong in the Moray Firth, Argyll and Solway workshops.

The number of jobs created under each scenario was provided amongst the details given to participants for each scenario and was a key factor in differentiating participants’ responses between the scenarios. Offshore wind scenario 2 was generally the least popular of the scenarios amongst the participants at all the workshops. It was interpreted that under this scenario there was little local benefit as the construction and operation would all be conducted at sea from large ships. The 100 jobs that the project did create were thus not going to be for local people and possibly not even Scottish people.

“Less than 100 Scottish jobs, I wouldn't touch that with a barge pole, either for Scotland or for the Island.” Argyll participant

Offshore wind 1 was predicted to create 400 jobs in Scotland and was thus generally the favoured of the two offshore wind scenarios. The location and type of jobs however were not detailed. This led some participants to wonder where they would be, and who would

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get them. Some participants even questioned whether the jobs would materialise at all,  
with one suggesting it was a sophism.

“You tell us what benefits this has to our people? If we’re getting  
no jobs and no cheap electricity, we’re not getting anything.”  
Moray Firth participant

The tidal scenario featured the least amount of jobs, but crucially these were going to be  
local jobs. The high percentage of local jobs led participants to believe that the majority of  
the benefit from the project would be realised locally.

Participants in the rural communities identified that even a handful of permanent jobs  
would provide valuable employment in a community. Ten jobs could lead to ten families  
staying in the area which would put children into the school and help support other jobs  
and families in the community. It was hoped that this would lead to a multiplier effect.

“Give us ten permanent jobs and free electricity and you’ve got a  
deal!” Moray Firth participant

Whilst local job creation was a key consideration, another frequent concern about jobs was  
whether local people would have the skills required to take on these jobs with participants  
citing experience of previous local projects. A participant in Solway remarked that a  
homebuilding project had generated 300 jobs, but that none of them had gone to locals. In  
the Moray Firth workshop participants recognised that people in the area did not have the  
skills required to work in the jobs that would be created under the scenarios.

Participants in Orkney, however, remarked that the North Sea oil and gas industry, which  
employs many Orcadians, was contracting and shedding highly skilled workers. ORE was  
therefore seen as a way of ensuring that these workers, who had many of the requisite  
skills, were able to find future employment. Indeed, without new jobs that required these  
skills, they were worried that these people would not be able to retrain into other sectors  
and would thus be left unemployed, which would have significant negative impact on their  
community.

While most participants felt that if there were no guaranteed local jobs to be gained then  
the project would not be worth it, the exception to this was in Solway where participants  
recognised and valued the possibility of a job. The project would give hope for a job, and

In sight and in mind: social implications of marine renewable energy that even if there was no guaranteed job, there could be one, and that was better than nothing.

This seemed to reflect the high unemployment in the area, and among participants at this workshop, resulting in the prospect of a job being valued more highly than in other locations. Furthermore, in other areas people were more accustomed to leaving to find work elsewhere if it was not available locally, where as in Solway many participants lacked the skills to conduct higher paid work that might justify a move elsewhere.

“When you go to the job centre, they make you feel like shit...They want you to go all the way to Ayr for minimum wage.”  
Solway participant

Accordingly, if new industry could help fund better training courses in the local area then participants also saw this as a possible route to a future job. Training, apprenticeships, college courses and skills development were therefore seen as an important part of the jobs package.

“You shouldn’t be importing skills, that's the problem in this country, loss of apprenticeships.” Forth and Tay participant

“Even if you don't get a job, you’ve got skills you can take elsewhere.” Solway participant

The ‘value’ of a job came through particularly strongly in Solway where it was made clear that a job had more than economic value.

“If he [my partner] could get a job it would change his life, my life, the kids’ life... it would raise self-esteem. He’s just a man about the house.” Solway participant

While participants were very focussed on jobs in their discussions, it was not the job per se that they were concerned about. What they were really concerned about was the social wellbeing that would result from the employment. Jobs were prioritised because they can provide for families and sustain communities.

Having outlined the importance of the distribution of jobs for the participants, I next consider other ways in which the distribution of benefits influenced social responses.

### 7.2.3 Distribution

The distribution of positive and negative impacts was another important consideration amongst the workshop participants. Participants recognised that the impacts were not distributed evenly across the community or the country, and their perception of this distribution was important in informing their responses. In general, the tidal scenario was viewed as having the greatest local distribution of benefits, whilst also having the least negative impacts due to its smaller scale and was therefore viewed most positively.

Participants recognised that ORE represents an opportunity for long-term sustainable development in coastal communities and wanted the benefits of ORE projects in their communities. Further, as the negative impacts were generally believed to be occurring locally, it was therefore felt that it was only fair that these were offset by positive benefits. In addition, participants articulated a moral rationale for the communities that have the natural resources to benefit from their exploitation. There was support for all three of the scenarios if the benefits were distributed locally.

“What’s the economy for? Is it for shareholders or is it for people?  
There’s a feeling in Scotland that it should serve the community.”  
Central Area participant

“If you look after Argyll, the people and the place, we would be  
very proud to have this.” Argyll participant

During a discussion in Argyll for example, it was noted that whilst an offshore windfarm that had been proposed near the island would have been visible from the island, the cabling would have gone straight to the mainland taking the electricity with it. It was therefore felt that there were impacts without benefits which led to negative responses.

“We see it but don't get it.” Argyll participant

“The benefits are so minor for the disruption to every part of life  
in this little place, it is not worth it.” Argyll participant

Following from sections 7.2.1 and 7.2.2 above, benefits were generally viewed as local jobs, and cheap, reliable electricity. If these were not forthcoming, then many participants showed little support for a project.

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“Benefit to Scotland, yes, benefit to west of Scotland, yes, benefit to [Argyll], no.” Argyll participant

Indeed, participants compared the offshore wind scenarios which were perceived to have little local benefit, particularly offshore wind scenario 2, to colonial ventures exploiting local resources for external gain.

“We used to do this and go in and take all the gold from places.” Argyll participant

“Like with our oil, a British government gets the profit. They take away our oil, they’ll take away our wind.” Central Area participant

Participants were clear that the wind and the tide were a Scottish resource and the distribution of benefits should be focussed on Scotland, and preferably the local community.

“I would be sickened if some foreign company got the benefit from this.” Moray Firth participant

“Who gains financially from this? Because all along I’ve been thinking this is a Scottish or British company, but now I’m thinking that’s not right, and that doesn’t sit well with me.” Central Area participant

As established in 7.1.1 and 7.1.2, participants understood offshore wind scenario 2 to have the least local benefit, with any benefit that would flow from the project accruing elsewhere.

“[Offshore wind scenario] 2 feels like you’re being used rather than utilised. If you’re utilised it feels better.” Solway participant

“Its [offshore wind scenario 2] taking everything away from these communities and giving nothing back.” Central Area participant

The tidal energy scenario was generally the preferred scenario amongst the participants as, due to being closest to the shore, it was considered to have the greatest local distribution of benefits of the three scenarios.

“Woohoo scenario three! Best option out of the three.” Argyll participant

A: "It feels more part of the community..."

B: "The fact that you have the project management locally."

Central Area participants

The tidal option was also viewed positively as its small scale was thought to be appropriate for the needs of a small community rather than generating electricity to be consumed elsewhere.

"This is a more appealing option... generates the amount of electricity that we need here." Moray Firth participant

The counterpoint to the distribution of perceived positive impacts is the distribution of negative impacts. Being the furthest out to sea offshore wind scenario 2 had the least negative local impacts. Crucially however, the desire for positive impacts outweighed concern for negative impacts amongst most participants.

Having considered the distribution of impacts, in the following section I look at visual disamenity which was viewed as an important local negative impact by many participants.

#### **7.2.4 Visual impact**

The issue of visual disamenity was discussed at all workshops. Participants had a range of views on the visual impact that would result from the turbines and their associated infrastructure under each of the three scenarios. Reduced visual disamenity was favoured and there was a recognition that offshore wind was better than onshore in this regard.

"I think it is quite a viable alternative for renewable energy. If you put it offshore it will have less opposition than if you do it onshore." Forth and Tay participant

Participants recognised that the further offshore the turbines were located the lower the visual impact would be. Crucially however, participants understood that in the scenarios the further offshore the turbines were located, there was also reduced community involvement and accordingly less community benefit.

"You want the windfarm as far offshore as possible to reduce the visual impact, but you want it closer to get some community benefit." Forth and Tay participant

Individual perceptions of this trade-off were thus crucial in informing responses. For most participants, at most workshops, greater community benefit was more important than reduced visual impact. This was based on the primacy of economic benefits in informing their responses, as discussed in 7.2.1 and 7.2.2.

Only in the Forth and Tay workshop was there real support for offshore wind scenario 2. At 14km offshore, offshore wind scenario 1 was considered by some participants here to be too close to shore with concern expressed about “75 turbines in your vista” and the negative impact that might have.

“I don't think people would come to the area to see turbines, but they might not come because of the visual impact, so the further away they could be the better.” Forth and Tay participant

This was notable as it was the most affluent workshop location where the prospect of employment and opportunities was much less of a feature than at the other workshops. How people perceive this trade-off between reduced visual impact and reduced community benefit thus depends on the context of each individual and that of their community.

This was illustrated by other workshop participants who felt that the negative impact of visual disamenity was in fact exaggerated, and this was not a factor in determining their responses.

“For me the daily impact on my routine is the view. This is not an issue, no.” Orkney participant

“If folk are really honest, how often do they look out of their window? They're glued to their iPads and laptops.” Orkney participant

The tidal scenario was appraised positively at all of the workshops as, as well as having the greatest local distribution of benefits, it had the lowest visual impact due to the turbines being situated underwater.

“What the eye disnae see, the heart won't bleed for.” Central Area participant

“If you can't see them, people aren't going to talk about them.” Argyll participant

Whilst the tidal turbines themselves were understood to be less visible than the wind turbines, participants recognised that there were still visual impacts from the transmission and other infrastructure. While the visual impact on the seascape was reduced, there was still a visual impact. The tidal scenario was thus not viewed as an entirely visual disamenity free option.

“I like my views and wee walks. I don't want these offices and substations and activity around.” Central Area participant

“I'd rather see the turbines than the pylons.” Moray Firth participant

“We've got to have power, but I would hate to have pylons here. Don't want it blighting the countryside.” Forth and Tay participant

This section has shown that visual disamenity is an important issue in determining participant responses and that it is a personal one which affects different individuals in different ways. I next consider the impacts on infrastructure and services, the interpretation of which also played a role in informing participants' responses.

### **7.2.5 Infrastructure and services**

Participants at the workshops considered how the scenarios might impact local infrastructure and services. Participants' responses were very much informed by whether they perceived that the projects would add to the pressure on infrastructure and services or would instead lead to investment and improvements. Participants' views varied across the workshops as did the infrastructure and services that they considered to be important.

Participants in Moray Firth and Solway raised the vulnerability of the transport infrastructure in their areas. They explained that in each community the train service is irregular, and that they are reliant on one key road. If this road is cut, then they are severely affected. In addition, Moray Firth participants mentioned their direct experience of the impact that transporting turbines north to onshore windfarms in Caithness has had on the key road in the area, and that this affects their concerns about impacts on infrastructure pressures.

“More on the roads?! They're already at breaking point.” Argyll participant

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Moray Firth participants stated their frustration with experiences of large recent projects. A landslip on the main road had taken 18 months to repair, whilst work on a new substation had apparently been ongoing for more than two years.

Some participants recognised that there could be real benefit if more infrastructure and services were provided or sustained, particularly in the Highland and Island locations. If the roads could get upgraded, then that would be perceived as a real benefit. Likewise, if more young families lived in the area the schools could get more numbers which would sustain them. If more medical services could come to the area it would really benefit people, especially the elderly. This was particularly important in areas such as Argyll where people currently have to travel to the mainland to access certain healthcare.

In contrast, participants in the Central Area talked about the importance of information technology infrastructure and how they are now reliant on the internet and mobile phones and want “instant access stimulation”. They recognised that telecommunications infrastructure is not as developed in the periphery of Scotland and felt that faster broadband connections could be a real benefit to rural communities and might arrive with ORE developments. Interestingly, this was not really mentioned in the rural areas where people were more concerned about the provision of basic services which are seemingly taken for granted in the city.

Participants also recognised that new sorts of amenities directly related to the ORE projects might arise under the scenarios, such as a visitor centre or education centre providing information about the project. It was generally felt that these would bring people to the area and were seen by many participants as valuable amenities that could be expected to be built as part of an ORE project.

In general, participants were keen for the investment in infrastructure and services that they felt was possible under the scenarios. The one workshop location where new infrastructure was not widely seen as a positive was Forth and Tay. Participants here believed that rather than not getting enough new developments, the area was getting too many. This was a clear difference with the other locations.

“It’s a wee medieval town, it cannot take any more infrastructure.” Forth and Tay participant.

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There is clearly an important balance to be struck between attracting investment to expand and maintain needed infrastructure and services and putting additional strain on already stretched infrastructure and services. As one Orkney participant succinctly articulated “too many people - not enough facilities, works both ways”.

The scale of investment in new infrastructure and services was therefore a key point for many participants with different people and locations interpreting this differently.

The tidal scenario was generally viewed positively as, being smaller in scale than the offshore wind scenarios, it was felt that there would be fewer negative impacts on the local infrastructure.

“There’s less to panic about [with a small-scale project].” Argyll participant

“Less impact on everything, except perhaps sea life.” Orkney participant

In contrast to the tidal scenario, people imagined the large-scale transformation that might occur under offshore wind scenario 1, and worried about the potential influx of 400 new workers.

“I wouldn’t want to see 400 homes built, that’s why you move to Orkney, the space.” Orkney participant

Others though rationalised that the arrival of new people was actually not much to be concerned about believing that “100 [new] people in 20,000 is pretty nominal”. Orkney participant

The prospect of a mass influx of temporary workers to a community was discussed with both hopes and fears for the benefit and impact that this could have on infrastructure and services. Some participants were positive believing that having 400 temporary jobs would be a boost to their community and provide an impetus to local services such as the bank, and petrol station which were struggling for customers.

Temporary workers were seen as an opportunity if managed correctly as new accommodation might be built for them which could be used by the community in the long-term. Alternatively, hoteliers in the region could get an increase in business by

In sight and in mind: social implications of marine renewable energy accommodating the workforce. It is unlikely however, that there would be long-term investment in infrastructure and services to support a temporary increase in workers in a region.

Participants mentioned their experiences of having temporary workers in their communities before. In Moray Firth, one participant remarked that when Irish workers had previously been in the area, they increased the amount of business in the local shop. This led to more product lines being stocked which locals were then able to also buy. This seemingly simple thing was recognised as a real benefit to people in the community.

Others, however, expressed concern for how an influx of largely young, male workers would impact a community. Examples were given of negative experiences in Shetland and Aberdeen of hosting workers and the increase in anti-social behaviour resulting from this which put strain on local services.

To summarise, participants' responses towards the impacts on infrastructure and services depended on whether they felt their area needed more people and investment, or not, and whether they felt the scenarios would bring this investment, or not. I now move on to further consider how the long-term impacts of ORE projects influenced responses.

### **7.2.6 Legacy**

As participants considered the positive impacts that the scenarios might have, a key issue was whether these benefits would be long-lasting or not. Participants were wary that a project could bring an initial short-term boost but ultimately have no enduring benefit for the community. A project that was viewed as delivering a legacy was viewed far more favourably than one which was considered to be boom and bust. A legacy was not seen as a piece of infrastructure that would last for many years, but as something which would allow the community to sustain itself over time.

“If all we get out of it is a swimming pool then I’m not interested.”  
Forth and Tay participant

“These big companies should be tied into legacy projects, not just putting a flower pot in at the end going ‘hallelujah’ we’ve got our wind turbine.” Moray Firth participant

As well as being dismissive of token gestures towards the community by the developers, participants were worried about what happens following an initial investment after the developers leave. Participants expressed concern about boom and bust which could actually leave the community worse off in the long-run. They talked about how as money comes in locals sell up for a good price and leave, then as the investment dries up the community is weakened.

Participants wanted the developers to invest in the community for the long-term to develop infrastructure, services and employment that would make the local area a better place for future generations.

A lot of the appeal of the tidal scenario was due to the possibility of Scotland becoming a leader in the technology and the greater potential for turbine manufacturing to be in Scotland.

“Why not make it something we can be proud of, keep all the manufacturing in Scotland.” Forth and Tay participant

Participants were informed that the wind energy supply chains are already developed and international and that this was one of the reasons why there were fewer Scottish jobs under the offshore wind scenarios. In the newer tidal energy industry, there was still a possibility for Scotland and the UK to be industry leaders and export the technology. It was hoped that this “silicon glen” in tidal energy could be a real legacy to Scotland.

## 7.2.7 Energy options

Occasionally participants reflected on the bigger picture, even though they were not really prompted to do so during the workshops, and this informed responses towards the scenarios for some participants. They recognised the benefits of renewable energy such as providing clean electricity, clean air, and energy security. Renewables were generally contrasted favourably with the other energy options such as coal and nuclear.

“The more we can put in around the Scottish shores, the more self-sufficient we can be. Ticks a box for me right away.” Moray Firth participant.

“This is Scotland, it’s beautiful, and anything that changes that is contentious. But we need to do something. If we’re in the dark, we won’t be able to see anything.” Forth and Tay participant

The workshops were focussed on discussing social rather than environmental impacts, nonetheless some participants recognised the harm that humankind is having on the planet.

“We’re destroying the planet.” Forth and Tay participant

Concern for local environmental impacts were then questioned in relation to the larger question of mitigating climate change, which in itself is an important social impact.

“In the grand scheme of things, when we’re moving away from nuclear and carbon what is a few mussels?” Moray Firth participant

From a secure, renewable electricity supply perspective, some participants did recognise that the demonstration-scale tidal energy scenario generated far less electricity than the large commercial-scale offshore wind scenarios. This led them to wonder if it was worth it and whether it would be better to pursue the offshore wind scenarios.

Participants from Orkney, where tidal and wave energy have been developed for many years, also used their experiences of the slow pace of development to suggest that investments in offshore wind would be more sensible.

“Tidal energy is an economic black hole that you don't want to get involved in.” Orkney participant

Having discussed how participants’ social responses were informed by their perceptions of the social impacts of the scenarios, and that this sits within the wider context of energy and climate change, in the next section of this chapter I discuss how decision-making processes influenced the participants’ responses towards the ORE scenarios.

## 7.3 Processes

A recurring theme throughout all the workshops was a sense of dissatisfaction and mistrust in decision-making processes and officials, both elected and unelected. This strongly influenced responses to all three scenarios and showed the importance of effective public engagement for MRE projects.

Participants talked about how they felt that they didn't have control over decisions being made in their lives and in their communities and how that led them to “feel a bit disempowered.”

“It’s like living in the Teletubbies here. Things just appear and disappear, and nobody knows how.” Argyll participant

“I live here, I know the people in the Highlands. Westminster doesn't give a shit. They don't even know that we're on the mainland.” Moray Firth participant

This mistrust seems to have built up in many ways and through relationships with different officials and authorities. In Argyll, participants mentioned how they do not have control over the land as it is owned by landlords. They were also frustrated with the activities of the RSPB who operate a number of wildlife reserves on the island.

“The RSPB has loads of power, they dictate to locals, and time after time they are wrong.” Argyll participant

Participants in the Moray Firth workshop stated that there has been significant decline in fishing vessels in the village over the last 15 years. There was a feeling that the British Government and the EU are to blame for this decline as the quota system benefits industrial fishing rather than the small-scale fishers who operate from the area.

“They crucified us with quotas.” Moray Firth participant

In Solway, participants were upset with the recent general decline in the town and felt that there was insufficient support available from multiple agencies.

“[Solway] is falling apart and nobody is doing anything about it.” Solway participant

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Wherever the 'truth' might lie in all of these cases, participants clearly felt that they were not adequately involved in the decision-making processes; that the views of local people were not sufficiently heeded; and, that decisions were not being made to the benefit of local people, or in accordance with their wishes.

In Argyll participants had direct experience of ORE planning as both offshore wind and tidal projects had been proposed around the coast there. None of these recent plans had actually progressed to project construction, however, and participants at the workshop expressed frustration with the way that the community were consulted.

"We're looking forward to it, getting quite excited about this project, and then [clicks fingers] no information." Argyll participant

"It got kicked into touch after people were stomped all over by one of the corporations." Argyll participant

Whilst in the main, the workshops involved discussion around three hypothetical scenarios, this real-world experience highlighted how processes do influence social responses to ORE, and that the responses participants gave to the hypothetical scenarios are likely to be replicated in real life if the scenarios do go ahead in actuality.

It was clear that people wanted to be involved in decision-making and wanted to be trusted to make decisions about their communities. They did not think it was right that developers dealt only with the local authority.

"These big companies just pay lip service, they talk to the councils and they think they represent the people, but do they?" Orkney participant

"We look at what is best for the bigger picture. The council is focussed on short-term financial self-interest." Solway participant

Participants did not only think that local authorities were pro-development while the constituents were less keen. It was also suggested that it was the other way around with the council being anti-development.

"The local council would say no to this [offshore wind scenario 1] but if you asked the general public you would get a different answer." Solway participant

Further evidence of the dissatisfaction with existing processes and decision-makers came in the pointed responses from participants when asked what they would like to see their council do:

“Tell the truth!” Forth and Tay participant

“Drop dead and get somebody else in!” Solway participant

There were occasionally tense exchanges during the workshops between the Government representatives and participants about the processes that are followed in deciding on whether to approve projects such as those featured in the scenarios. The Government representatives defended their work and the processes that they follow, the participants meanwhile, felt that these were not good enough.

“You say they listen to us [politicians], but I don't think they do, they just go their own way.” Forth and Tay participant

“There's a lot of mistrust of the exercise of consultation to get the green light.” Argyll participant

Participants did not feel that the decision on planning approval was always based on the communities' views, or even on the balanced evidence that the civil servants said they collected to inform the Minister's decision, but instead could be made on the Minister's preconceived personal ideas or political agenda. The Government representatives stated that the electorate could vote out any politician or minister whose decisions they did not like. The five-year time frame that might be required to do this was considered too long by the participants, however, as the project could already be built by then.

Participants clearly then understood democracy to be more than a vote cast every five years but rather to involve meaningful citizen participation in project decision-making. These exchanges were uncomfortable for the Government representatives who felt that they were doing an honest job and diligently following the planning processes set down in law.

This highlighted the importance of having greater dialogue between the public and decision-makers and planners so that both sides can better understand each other's perspectives.

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The majority of participants enjoyed the workshops and really appreciated that the Scottish Government had come to their community to consult with ordinary members of the community on this topic and wanted to see more events like this in the future.

“This group today is from a broader spectrum than the community council who are stuck in their ways. This is better.” Moray Firth participant

A: “There’s a lot of knowledge in this room with people who are not in committees.”

B: “That we didn’t know we had.” Orkney participants

“Need people like you [Government representatives] to keep coming back to us and saying come to this forum, because otherwise we don't have a focus to get together.” Argyll participant

After the workshops, participants had more certainty that the public should have a say in decisions about developing renewable energy in Scotland’s seas. As a participant from Solway explained, he had started the day believing that it was a high-level thing that should be left to decision makers, but had come to realise the value of community decision-making.

Others though remained sceptical that their voices would actually be listened to.

“It’s a political decision of which we have no control over except for our vote. I came in positive, but I leave more negative.” Argyll participant

Participants wanted more transparency in governance and had suggestions for what processes they would like to see followed.

“The more public you make it, the less you have for people to say you’re hiding something.” Forth and Tay participant

They wanted early information provision so that the community would know what might happen. It was felt that it was important that this was followed by consultation and discussion, so that when a project then does happen, people know that it has followed an open process and it does not feel like a *fait accompli*.

## In sight and in mind: social implications of marine renewable energy

Participants suggested that the consultation process for all of the scenarios should ensure that there was a local advisory group set up early on to consult and get local knowledge. This was envisaged as being a two-way process that could highlight local issues before they become a problem and get locals educated and involved. It was felt that a variety of people from different interests within the community would be happy to contribute to a group like this.

While the participants at the coastal workshops in communities that could potentially host ORE developments were understandably keen to have a say in planning decisions in their communities, participants at the Central Area workshop also recognised that it was important that the views of people living near to the projects were heard, and that these views took precedence over those of people living elsewhere in Scotland.

“We don't see it, so it doesn't affect us. People in those communities should say.” Central Area participant

To summarise this discussion on processes, I have shown that planning and decision-making processes were important in determining workshop participants' responses to the three ORE scenarios. Participants felt that decisions on projects like these have often been made before any public consultation, with the consultation that occurred being tokenistic. Participants wanted more real democratic consultation that involves the community early and throughout the planning process.

## 7.4 Summary

The Dialogue workshops allowed participants to explore how three ORE scenarios would impact the coastal community which hosted the projects. Participants' responses to the three scenarios were primarily influenced by whether they perceived each scenario to have a positive or negative impact on the local community. Despite the workshop being designed around a generic hypothetical host community, participants routinely focussed their discussions on how the scenarios would impact their actual community.

This helped to illuminate the different responses that can be expected in different communities due to the particular geographical, economic, and social factors in each community. Whilst each community understood the impacts that the scenarios were likely to have differently, the thing that they all had in common was dissatisfaction with decision-making processes and decision-makers and this also informed their responses.

The amelioration of positive local impacts from a project was a more important consideration for most participants than the mitigation of negative impacts. Accordingly, participants favoured the tidal energy scenario over the two offshore wind scenarios as they understood this to have more positive benefits for the local community than the offshore wind scenarios which were located further away. As a small-scale project the tidal scenario was also interpreted as being more in keeping with the local area and having fewer impacts than a large-scale project. Participants did recognise, however, that there would be local impacts from the tidal scenario including onshore infrastructure involving substations and pylons. The tidal scenario was therefore not seen as an impact free alternative to wind energy.

Only at the Forth and Tay workshop, in the most affluent community, were the offshore wind scenarios viewed positively. In contrast to other workshops, at this workshop participants put more weight on the mitigation of negative impacts and considered less the amelioration of positive local benefits. Accordingly, there was more support for having projects further out to sea, whilst some participants at this workshop were not in favour of any of the scenarios.

The extent to which participants were willing to support ORE depended on their perceptions of the impacts that it may bring to their community, and how desperate they were to get some positive benefits. In Solway, the most deprived workshop location,

In sight and in mind: social implications of marine renewable energy participants were the least cautious of the negative impacts and most hopeful of the positive impacts.

In general, however, participants were often sceptical that there would be any positive impact from ORE projects for their community and this led to negative responses towards all scenarios. It is clear that as impacts and processes are both important for determining social responses, processes are needed which build trust with communities and establish, through early engagement, what infrastructure and services are welcome in communities. This process can help to ensure that projects do generate positive social impacts and could be a positive benefit in and of itself by giving people satisfaction in the process and pride in having their voices heard.

Having presented the two sets of research findings from the Island and the Dialogue, in the next chapter I bring these together in a discussion with the literature.

## Chapter 8 Discussion

In this chapter I bring together the data from the Island and the Dialogue to discuss, with reference to the literature, the key findings from this research. The data from both the Island and the Dialogue reveal that there is general support for MRE in principle, but that a range of factors inform social responses to MRE projects, and that principal among these is the perception of the impacts that a project will have on host communities. This interpretation depends on a number of project-related factors and community context factors that I discuss in this chapter. I start with an overview of these findings before individually discussing these factors in more detail.

The key findings from across the data were that positivity towards MRE exists but that this is not unconditional and was qualified on the perception of impacts. On the Island and in most Dialogue workshops, there was a desire for investment in the local area that could positively boost the local economy and with it improve local services and community wellbeing. MRE was thus widely seen as a technology that could harness natural resources for the benefit of the community. This research further suggests that this public support for MRE is qualified based on the interpretation of the trade-off between positive and negative impacts. If either negative local impacts were felt to be too great, or positive local benefits too few, then there was less support for MRE projects. This research therefore aligns with the assertion of Bell et al. (2013) that publics' support for renewable energy is conditional and can be revoked if this trade-off is not deemed satisfactory.

Both data sets reveal a number of complex factors which inform the perception of this trade-off. These include attachments to the local environment and the history and heritage of the community, the willingness of individuals and communities to embrace and enact innovation and change, the trust and faith that people have in the promised benefits actually materialising, the perception of the distribution of benefits between local, national and international stakeholders, and the trust and faith that people have in the decision-making process. These factors are discussed in more detail across this chapter.

Furthermore, the data illustrate the type of positive impacts that people are looking for in their communities and that these include cultural, social and wellbeing benefits as well as economic benefits. The data further informs discussion on how MRE planning processes could be most effectively conducted.

Following this overview of the research findings I now discuss them in more detail. In Chapter 1, I started this thesis by considering whether the characterisation of MRE as being opposition free, as it was 'out of sight and out of mind' was an accurate representation of social responses to MRE, or whether more complex factors informed social responses and negative responses could in fact occur. In Chapter 3, I introduced the theory of social constructionism and reviewed the literature on social responses to renewable energy. I structured that discussion around six factors identified in the literature as informing responses to renewable energy projects: visual impact; local context and place attachment; scale; relationships and trust; planning and participation, and; benefits. I now return to these factors to discuss them in light of the Island and Dialogue findings.

## 8.1 Visual impact

The existing literature on the visual impact of ORE suggests that there is a perception that locating devices offshore reduces visual disamenity and that this is a factor in publics' support for ORE (Gee, 2010; Bailey et al., 2011; de Groot & Bailey, 2016). At the same time studies have shown that concerns over visual impact also lead to negative responses to ORE, particularly towards offshore wind (Firestone & Kempton, 2007; Haggett, 2008; Devine-Wright & Howes, 2010). The onshore infrastructure required to support ORE, such as transmission pylons, has also been documented as leading to visual disamenity and negative responses (Batel et al., 2013; Devine-Wright, 2013; Aas et al., 2014). In this section I detail the evidence collected in this research; this data supports the notion that MRE has less visual impact than wind energy both on and offshore, but also shows that negative visual impact can still be an issue.

In both the Dialogue and on the Island, people expressed support for MRE as they believed that it had less visual impact than onshore wind. MRE was therefore evaluated favourably compared to onshore wind and this was an important factor behind support for all ORE technologies. Furthermore, in the Dialogue, participants recognised that there was no direct visual impact from tidal stream turbines as they are to be located underwater on the seabed, and in this respect tidal energy was viewed positively compared to offshore wind.

In both research components, and with regard to all ORE technologies, however, it was recognised that there were other visual impacts associated with the projects through the onshore infrastructure. Each technology requires substations, warehouses and transmission

In sight and in mind: social implications of marine renewable energy cables, while the Oyster wave energy project proposed for the Island required power take-off units and shore access roads. Many workshop participants and Islanders considered these onshore infrastructures to be more visually intrusive than the technology itself. Whilst Islanders and workshop participants both cited reduced visual impact as a reason for favouring MRE over wind energy, they also recognised that visual impacts still occur; MRE cannot therefore be fully considered 'out of sight and out of mind'.

Through the Dialogue participants' discussions, it became clear that a range of responses were shaped by the visual impact of the scenarios. Some participants were very concerned about visual disamenity resulting from ORE, whilst for others visual disamenity was not considered to be an issue at all. This highlights that what one individual perceives as a significant visual disamenity is no disamenity at all for another. This research is thus in agreement with Firestone et al. (2018) that the visible presence of energy infrastructure is not uniformly interpreted as a visual disamenity, as the visual impact of wind turbines is socially constructed (Firestone et al., 2015).

Just as Greider & Garkovich (1994: 2) state in relation to social construction of the environment that "every river is more than just one river [and] every rock is more than just one rock", every wind turbine can be understood as more than just one wind turbine. As with rocks and rivers, physical pieces of technology or energy infrastructure are also socially constructed, and accordingly responses to them, and the visual impact that they are deemed to have, are determined on an individual and community level.

Another important aspect identified in this research in relation to visual impact is how it is perceived to trade-off against community benefits. The participants in the Dialogue workshops considered three ORE scenarios, two offshore wind scenarios and one tidal energy scenario, and the visual impacts they associated with each scenario. Participants recognised that the further out to sea an offshore wind farm was located the lower the visual impact would be. However, they did not believe this to result in zero impact as the turbines would still be visible. For those individuals most concerned about visual impact, not building the project was understood to be the best way of mitigating the impact.

For other Dialogue participants, however, visual impact was a less significant factor in determining responses; for example, for the majority of participants the provision of other socio-economic benefits to the local community was more important in determining how

In sight and in mind: social implications of marine renewable energy they felt about a project. Participants understood that as turbines are moved further offshore, there would be fewer socio-economic benefits to the community. A project located further offshore may thus have had less visual impact, but crucially fewer benefits. Under this scenario, most workshop participants did not want to accept even minimal visual impact when there was no perceived community benefit. The majority of participants preferred the offshore wind scenario in which there was more visual impact but also more community benefit.

This contradicts previous research (Ladenburg & Dubgaard, 2007) that suggests that people are prepared to pay more for electricity in order to ensure that turbines are located further offshore. Context appears to be key here, however, as participants in the wealthiest workshop location were least concerned about getting socio-economic benefits from ORE projects and most concerned about visual impact and did appear willing to pay more to site turbines further offshore. This further shows that visual disamenity is socially constructed (Firestone et al., 2015) and that local context is key for understanding social responses, as the perceived visual impact depends on perceptions of place (Devine-Wright & Howes, 2010).

In summary, this research confirms previous findings that MRE has lower visual impact than onshore projects (Bailey et al., 2011; de Groot & Bailey, 2016), but nonetheless cannot be considered a visual disamenity free alternative to onshore wind energy (Haggett, 2008; Devine-Wright & Howes, 2010; Gee, 2010). How people respond to, and are impacted by, the visual presence of MRE technologies is not uniform and depends on individuals' perceptions, and how visual impact and other factors such as socio-economic community benefit is socially constructed. An important part of this is the local context and place attachment which I turn to next.

## 8.2 Local context and place attachment

Strong place attachments amongst Islanders and Dialogue participants meant that people had a strong emotional concern for their communities and developments proposed in them. Similar to previous findings by Devine-Wright & Howes (2010), Devine-Wright (2011a; 2011b) and van Veelen & Haggett (2017), place attachments led to both positive and negative social responses within communities and across communities depending on whether developments were perceived as place enhancing or place disruptive.

The extended Island fieldwork revealed how place attachments are socially constructed through Gaelic language, crofting heritage and personal and community connections to physical environments, and how these place attachments, along with the local context, informed social responses to MRE. For example, the Island shows that responses can differ within a community, that multiple place attachments can exist within the same geographical location, and that the same place attachments can lead to different responses. Similarly, the Dialogue findings show that strong place attachments existed in all the workshop locations and that these were important for social responses, which differed across workshop locations depending on the local context.

On the Island, the complex emotional bonds between people and place which are understood to form place attachments (Devine-Wright, 2009; Scannell & Gifford, 2010) were clearly in evidence and built on the functional attachment (Lin & Lockwood, 2014) that Islanders have to the sea, the moor, and the croft that they have been dependent on for their livelihood, and the emotional and cultural meanings that these spaces represent to them (Greider & Garkovich, 1994; Hidalgo & Hernandez, 2001; Lewicka, 2011). The Island data shows place attachment is socially constructed - that there are different social constructions between Islanders and between marine and terrestrial environments.

These different social constructions are demonstrated through the way in which place attachments on the Island are particularly strong for older, indigenous, Gaelic speakers who spent their formative years visiting the *shieling* [summer pastures] or fishing at sea. In previous generations the crofting lifestyle was intricately linked with the local environment and this is reflected in Gaelic language and local culture which help inform place attachment. Younger generations and urban Islanders did not have such an intimate relationship with, nor develop knowledge of, the physical landscape and are less attached

In sight and in mind: social implications of marine renewable energy to the marine and moorland environments. For some Islanders then the moor is an inhospitable empty space that is suitable for renewable energy developments, whilst for others it is full of memories, heritage and important cultural landmarks which are threatened by these same renewable energy developments.

Islanders' attachments to the Island do not stop at the low tide line; the surrounding marine environment is considered to be as much a part of the Island as the land and there are strong place attachments to the sea (Hayward, 2012; Voyer et al., 2015), but there are differences in place attachments between the sea and the moor. Attachments to the sea are weaker than to the moor which has a more cherished role in crofting heritage. In contrast to the moor, the sea is socially constructed as a dangerous, unwelcoming environment and accordingly there is a perception that it is a place best avoided.

In this sense MRE appears to be less threatening to place than onshore wind turbines and viewed more favourably. At the same time this also influenced Islanders in expressing scepticism towards the development of renewable energy in this hostile environment.

MRE projects, however, are not confined to the marine environment as they also require onshore infrastructure and as such it is not just the marine environment which is physically altered by MRE but the terrestrial environment as well. Place attachments to both environments are therefore important for understanding social responses to MRE.

In general, different place attachments led to contrasting responses towards energy projects. More complicated however, is the fact that people who exhibited the same attachment to the heritage and culture of the Island had both positive and negative social responses to renewable energy projects.

For some Islanders, all renewable projects, including MRE, were interpreted as threats to the traditional culture and heritage of the Island and its people, and were therefore to be resisted. For other islanders, this culture and heritage is already in decline and projects are interpreted as a way of rejuvenating the Island and sustaining its culture and heritage. Similar to findings from van Veelen & Haggett (2017), the same place attachments therefore lead both to oppositional responses and serve as a motivator for project development.

What is notable about the Island, however, and contrary to hypotheses in the literature (e.g. Devine-Wright, 2009) is that place protective action is not about protecting wild landscapes, but instead about protecting human landscapes. Opposition to renewable energy developments on the Island are therefore not about protecting wild spaces as is commonly suggested in the literature (Devine-Wright, 2009), but instead about protecting the human heritage of the traditional Gaelic, crofter lifestyle which is in decline throughout Scotland. Similarly, support for renewable energy was based on the notion that it could enhance place by sustaining population, culture and heritage.

The human element of landscape on the Island is emphasised in the way that it is socially constructed. Islanders tend to view the sea and the land as functional spaces that are there to provide for the local population. Renewable energy projects, including MRE, represent functional uses of the environment and accordingly can be interpreted as fitting within this anthropocentric view of the environment as a new way for humans to exploit the environment for their own benefit. Place attachments, however are based upon the past functions that these places have had in Island livelihoods (Lin & Lockwood, 2014), and these functions are an integral part of the cultural heritage and there is strong emotional attachment to place based on these functions (Greider & Garkovich, 1994; Lewicka, 2011; Hunter, 2014; Macfarlane, 2015).

Developing new functions for these spaces was thus interpreted by some Islanders as a threat to the Island's heritage. Those proposing new functions must therefore be aware of how they can disrupt these place attachments. In particular, previous functions such as animal grazing, peat cutting and fishing were done on a small subsistence scale, taking what was needed for the Island. Proposals for large or commercial scale projects that exploit local natural resources for export to other areas, therefore appear to be particularly disruptive to place attachments.

Islanders and workshop participants all wanted to enhance their place, but they disagreed on how this should be done, and most specifically on whether ORE projects did enhance the place or not. In most Dialogue workshops there was a view that the place was declining and needed investment to sustain it, place attachment was thus a key motivator for ORE development which was seen as a place protective development. In contrast, the Forth and Tay workshop was held in a more affluent community where concern was not about lack of

In sight and in mind: social implications of marine renewable energy development, but overdevelopment of a historic and prosperous town. Here, there was less support for ORE which was more widely interpreted as place disruptive and opposition was considered as place protective.

In summary, there were strong place attachments on the Island and in the Dialogue workshops, and these influenced social responses to ORE. In most locations there was a recognition that investment was needed, but different interpretations of whether ORE was a place protective or place disruptive investment. These interpretations depended on both the local context and individuals' unique place attachments. They also depended on the particular ORE project and whether it was felt that scale of a project was a 'fit' with the place (Devine-Wright, 2009; 2011a; 2011b). I develop this theme further in the following subsection.

### **8.3 Scale**

The extent to which publics prioritise local issues compared to global issues has been shown to be a factor in determining social responses to renewable energy projects (Devine-Wright et al., 2015). In both the Island and Dialogue research components, responses to MRE and ORE were almost exclusively influenced by concern towards local issues, namely did the project benefit the local community or not. The idea that these projects were contributing to global climate mitigation with benefits for the wider world was not widely considered by Islanders or Dialogue participants. This aligns with the findings of Devine-Wright et al. (2015) that local publics base their responses on local rather than global issues, but is in contrast to previous findings which showed that contribution to climate change mitigation was a factor in publics' support for MRE (McLachlan, 2011; Devine-Wright, 2011b). As I discuss below, the reasons for this are complex and varied and include local contextual factors, MRE technology factors, as well as the Dialogue workshop design.

The focus of local issues for Dialogue participants is perhaps unsurprising as the workshops did not introduce debate about global issues, focussed as they were on exploring the local social impacts of ORE projects. The issue of climate change was occasionally raised, most often in the Forth and Tay and Central Area dialogue workshops where participants appeared to be more aware of their identity as Scottish and global citizens as well as local residents and responded more positively to the global climate benefits of renewable energy. The utility of deploying MRE, a small-scale technology still in its development

In sight and in mind: social implications of marine renewable energy phase, to tackle an urgent global climate problem, however, was questioned by workshop participants. Participants concluded that the best way for Scotland to take meaningful action on mitigating global climate change would be to develop offshore wind rather than tidal technology as it can be deployed at greater scale and thus generate far more renewable energy. This is one practical reason that MRE is not supported as a climate change mitigation tool.

On the Island there was no suggestion of support for any renewable energy option being developed to support national and international carbon reduction, the case for renewable energy was all about local development. In this marginal economy with a small and declining population, and a clear need for development and investment it is perhaps understandable that people are more focussed on local rather than the global issues. In addition, the Island findings demonstrate a somewhat inward-looking community used to being dictated to by outside forces and actors, rather than developing projects and innovating in order to contribute to national or international agencies or issues.

Another issue of scale which has been identified with positive social responses to ORE is that host communities feel that they are sharing a collective burden with other communities for the greater good (Firestone & Kempton, 2007). However, as there are limited locations for the deployment of MRE technology in Scotland (Kerr et al., 2018), there will not be widespread deployment of projects around the country. The impacts of MRE will therefore be confined to the few communities with the physical resources that are suitable for MRE projects.

Throughout the Dialogue and the Island there was a clear sense that local resources should only be developed if there was local gain. Similar to findings by McLachlan (2011), negative social responses were expressed towards projects that were perceived as exploiting local resources for outside gain. Local development issues were widely seen as the most important issues for people and social responses were largely determined based on the interpretation of local impacts.

In the Dialogue workshops there was extensive discussion on where jobs and profits may accrue, and this was an important factor for participants who wanted them to be as local as possible. An interesting aspect of the globalised energy system, however, is that workers from the Highlands and Islands are already employed across the North Sea and around the

In sight and in mind: social implications of marine renewable energy world in the oil and gas and renewables sectors. Without these jobs, depopulation from the Island and other Highland communities would be far more extensive than it currently is. The development of both the marine energy and offshore wind industries can then provide jobs for Scottish workers, and benefits for Scottish communities, even if the projects are located in other countries. In a global economy positive community benefits can accrue in communities far away from the project site.

A final concern among Dialogue participants and Islanders with regards to scale was that large projects would have significant local impacts in small communities. Large projects were interpreted as transforming an area rather than complementing it. Small projects which generate tens of megawatts of electricity were considered to be a less controversial option than large projects capable of generating hundreds of megawatts. Indeed, the small-scale community-owned wind turbines on the Island have received greater support than the large-scale windfarm proposals.

Specifically, the case of the Island's Upper Estate, from which there was vocal and concerted opposition to the large windfarm, but which subsequently constructed three community-owned wind turbines, demonstrates that the scale of the project is important for determining social responses. The case further illustrates that scale is a factor in the social construction of renewable energy projects and that every wind turbine can be understood as more than one wind turbine.

MRE projects at present are small-scale and can thus 'fit' within the host community (Devine-Wright, 2011a; 2011b) rather than overwhelm it. With small-scale projects there was less trepidation in the community about the negative impacts that they may have. This issue of scale was important in the Dialogue workshops and on the Island and has been documented in the literature (e.g. Haggett, 2011). Large-scale projects are less likely to be found to be in keeping with small coastal communities that have limited energy demand, particularly if they are perceived to produce no greater local benefit than smaller projects.

In summary, it is the local rather than the global which informed social responses to MRE across all the data.

## 8.4 Relationships and trust

The Island and Dialogue data both showed that the relationships that host communities have with decision-makers, local and national authorities, and outside agencies are important for determining responses to projects. This has previously been shown to be a factor in both theoretical studies (Terwel et al., 2011) and empirical studies (Haggett, 2008; Devine-Wright & Howes, 2010).

While none of the Dialogue participants had direct experience of dealing with ORE developers, and Islanders had very limited experience, both groups made clear how poor relationships with planners influenced responses to other projects and that these experiences conditioned how people responded to prospective MRE developments.

On the Island and in the Dialogue, people spoke about how they had little faith in the local authority or other officials and regulatory bodies who they felt were imposing things on their respective communities against their wishes. At the same time there was feeling that these bodies were not responding to the concerns that people had about decline and lack of investment in their communities. As identified by Huijts et al. (2007), people's perceived lack of trust in both the competence and the intentions of these actors resulted in scepticism towards the motives of MRE developers and advocates.

In accordance with previous findings that private energy companies are mistrusted (Firestone & Kempton, 2007; Howell et al., 2014), a lack of trust in the multinational developer of the large windfarm, who was seen as imposing the development on the Island, was an important factor in opposition to that project. Islanders were also suspicious of the motives of both wind energy and MRE developers coming to the Island and questioned whether developers' intentions aligned with community priorities.

In contrast, the plans for the first wave energy project proposed on the Island, the OWC breakwater project, originated locally and resulted in more community trust towards the project and the motives behind it. Similarly, community-owned wind energy projects which are developed locally with the express purpose of supporting community development (van Veelen, 2017) achieved greater local support. The data thus aligns with previous evidence which shows that trust in the developer is positively correlated with favourable social responses (Devine-Wright & Howes, 2010). This again demonstrates that every wind

In sight and in mind: social implications of marine renewable energy turbine is more than just one wind turbine and that social responses are socially constructed based upon the trust that people have in the turbine's proponents.

In most instances Islanders and Dialogue participants understood projects as being developed by private companies for their own private gain rather than for the greater environmental or community good. This is in contrast to the community-led energy projects that had been developed on the Island and had a clear purpose of community development and local benefit (van Veelen, 2017). Occasionally, the motivations of these community-based organisations were also questioned by Islanders who did not feel that they fairly represented the entire community and led to some community members benefiting or suffering more than others. This perception of winners and losers leads to negative social responses and poor relationships between the community and the developer (Gross, 2007).

Similar to findings by van Veelen & Haggett (2017), the data shows that local involvement and project leadership does not automatically lead to acceptable relationships and outcomes. Whilst community-owned wind turbines had more support on the Island than commercially owned turbines, they were not universally welcomed as individuals had different levels of trust in the competence and intentions of the community groups behind them. Again, this illustrates how renewable energy is socially constructed and that every community-owned wind turbine is more than just one community-owned wind turbine.

Mistrust and poor relationships were not reserved to outside organisations, commercial companies or the actual project developers. In the Dialogue and on the Island, there was mistrust and poor relationships with local authorities and national government who were also perceived to be acting out of self-interest rather than community interest. This negatively influenced Dialogue participants' responses to the scenarios as they were sceptical of the claimed positive impacts of the scenarios and that local voices would be sufficiently considered during the planning and decision-making process.

In summary, trust and relationships between host communities and MRE developers and policymakers influenced social responses to MRE projects. There was instinctive scepticism towards MRE developers based on historic and cultural factors. Building trust and relationships with host communities is therefore important for MRE developers and marine planners. To this end, in the next subsection I expand on the role of planning and participation in MRE development.

## 8.5 Planning and participation

As discussed in the section above about trust and developers, Dialogue participants had no direct experience of MRE planning processes; while on the Island there was limited experience based on the plans which had been proposed but never completed. The data from the Island and Dialogue suggests, however, that participation in planning, or lack thereof, is a factor in determining social responses.

Through the Dialogue and the Island, it became clear that the lack of trust that people had in developers and decision-makers resulted from experiences with planning and participation processes that were deemed to be unsatisfactory. As highlighted in the literature, unsatisfactory planning and participation processes lead to negative social responses towards renewable energy projects (Gross, 2007; Wolsink, 2007a; Firestone et al., 2012). On the Island there were contemporary examples from the large windfarm project and other energy planning debates as well as local planning and budgeting decisions which did not properly engage community members or listen to their concerns. The Island data also showed that lack of engagement is a historic problem situated in centuries of exclusionary planning practices (Hutchinson, 2003; Hunter, 2014). Islanders have a strong feeling that throughout the Island's history decisions have been taken by officials, often outsiders, without considering the wishes and priorities of local people. This repeated and ongoing disappointment in decision-making processes has led to significant apathy and disillusionment towards the planning system.

The Island has a unique culture based on Gaelic language, crofting and Protestantism which Islanders are keen to protect. This heritage also means that Islanders have unique knowledge of the Island and its culture and environment. This knowledge is socially constructed using Gaelic language and is embedded within crofting heritage on the Island. It appears, however, that this indigenous knowledge is not incorporated into planning processes, which are conducted in English, often led by outsiders, and do not consider the Island's unique heritage. Indeed, historically, certain decisions have been made on the Island to deliberately exclude and diminish Gaelic heritage. This has led in part to the contemporary unwillingness amongst Islanders to participate in planning processes and community projects and decision-making.

Contemporary examples of tokenistic consultation and poor planning and participation on the Island, which appear to reinforce pre-existing apathy in decision-making, include the setting of the local authority budget, debates over Sunday opening, the redevelopment of the Cearban museum and the large windfarm project. The large windfarm was proposed by an external multinational company without any meaningful community engagement or consideration of the Island's heritage and 'lay' local knowledge. Many Islanders are in favour of the Island's wind and wave energy resources being exploited in principle, but were opposed to the large windfarm because there was insufficient consultation and community participation in the planning process.

With regards to the Cearban museum, there was agreement in the community that the museum redevelopment was a good thing, but disagreement arose over which form the redevelopment should take. This highlights the importance of planning and participation for positive social responses. Even when there is broad support for a project in principle, without effective and early engagement there is potential for negative social responses to arise based on specific aspects of the project design and planning process.

The 'decide-announce-defend' model of planning and consultation has been criticised for poor engagement leading to negative responses (Bell et al., 2005) and sits on the middle rungs of Arnstein's (1969) ladder of participation which characterises this sort of engagement as tokenism. Two of the wave energy projects on the Island were proposed by external developers and consultation only occurred after the plans had been put forward. Without early and meaningful community participation in MRE planning then it is possible that negative social responses could occur based on dissatisfaction with the planning process.

Islanders and Dialogue participants were supportive of MRE in principle but effective community participation in planning and decision-making is required to make sure that this qualified support is not revoked. Dialogue participants were clear that they wanted to have meaningful involvement in decision-making processes within their community. This desired participation went beyond the ability to object to plans and instead to have the power to shape and influence plans from the outset (Chilvers, 2009; Haggett, 2009).

Dialogue participants recognised the importance of 'local' and 'lay' knowledge that is found within communities and that this knowledge can bring different perspectives to decision-

In sight and in mind: social implications of marine renewable energy making than 'expert' knowledge (Aitken, 2009; Chilvers, 2009). Accordingly, participants wanted local voices and knowledge to be included in MRE planning processes in ways that it has not been to date in terrestrial planning processes (Aitken, 2009). There is therefore a challenge to marine planners and MRE developers to design participative planning processes that incorporate and value all types of knowledge and work to overcome the apathy that results from previous repeated disappointments with decision-making.

The final factor which I discuss here is community benefits.

## **8.6 Community benefits**

Following the discussion in 8.3 that social responses are predominantly based on local issues, I here discuss the major factor which informed responses to MRE in both the Dialogue and on the Island, the perception of whether the project would have a positive social impact on the local community or not. The provision of community benefits has previously been shown to inform social responses towards wind energy projects (Aitken, 2010c; Cass et al., 2010; Cowell et al., 2011) and this research reveals it to be a key factor in potential MRE host communities. Islanders and Dialogue participants understood MRE projects to have a range of both positive and negative impacts, and social responses were determined by individuals' perceptions of how positive or negative these impacts would be, and the trade-off that they were willing to accept between positive and negative impacts.

How individuals interpreted impacts was based on perceptions of visual impact, place attachment, scale, trust and relationships, and planning and participation. Community benefits is thus a cross-cutting factor that incorporates elements of all the factors hitherto discussed. Another important element in informing the perception of community benefit was the comparison of projects, with the Dialogue participants comparing the positive and negative impacts of the three ORE scenarios they were presented with, and Islanders evaluating MRE against onshore wind energy, both commercial and community-owned.

The data shows that the local context was important for informing whether publics were more focussed on gaining the positive local impact of MRE projects or avoiding the potential negative impacts of projects. On the Island and in the Dialogue workshops in Solway and the Highland and Island communities, there was desire for improvements to what were felt to be declining communities. In these places, where people were actively looking for investment, MRE was seen positively for the much-needed potential positive

In sight and in mind: social implications of marine renewable energy impacts that it could have in the community. That is not to say that support was unequivocal, however. There was general positivity towards MRE, but this was qualified based on the perceived benefits that would accrue. If it was perceived that there was no local benefit, or this positive benefit was outweighed by the negative impacts of a project then support was weaker or even turned to opposition (Macdonald et al., 2017). This supports the hypothesis of Bell et al. (2013) that whilst publics may support renewable energy in principle, support for specific projects is qualified around local and project specific factors.

In the Forth and Tay Dialogue workshop, there was less perceived need for positive impacts in the community, and participants put greater emphasis on the potential negative impacts of ORE. Here there was much more concern for new developments putting too much strain on already stretched infrastructure and services, and negatively impacting a community that was deemed to be prosperous. This emphasises the importance of local context in determining perceptions of benefits (Devine-Wright & Howes, 2010; Kerr et al., 2015).

In the other Dialogue workshops and on the Island the need for investment to create employment and opportunities that would sustain population in marginal communities and halt the outflow of people, particularly young people, was central to the idea of benefits that renewable energy projects can provide. The positive benefits that Dialogue participants most routinely referred to was the creation of local jobs. Jobs are tangible benefit that can boost the local economy and tackle depopulation and if these were forthcoming then there was support for projects. Development of other infrastructure, such as transport links, and essential public services, such as education and health care, were also cited as benefits that people wanted to see. The extent to which projects were perceived as supporting these services, rather than adding extra pressure to them, was also important for determining social responses.

Whilst discussing benefits it was clear that Dialogue participants were concerned with the long-term benefits that ORE could have for their communities. They wanted projects that could contribute to a sustainable legacy for their community. Short-term boosts to the community, whilst to be welcomed, were not the only thing that participants hoped to get. As discussed in 8.4, this was one of the reasons why trust in elected representatives and project developers was low, as they were perceived to act in short-term personal interest

In sight and in mind: social implications of marine renewable energy rather than long-term community interest. Participants wanted jobs and investment that would sustain the community for future generations.

Part of the appeal of MRE to the Dialogue participants was the recognition that there could be long-term benefits to the local community and the country through supply chains, manufacturing and company ownership, which would not be possible for wind energy in which multinational companies and global supply chains were already heavily involved.

Alongside, socio-economic benefits, another important positive impact which was sought was the reinvigoration of community. Putnam (2000) identified that loss of civic participation has resulted from modernisation and increased independence and individualism. These findings resonate with the data from the Island where depopulation and individualisation have resulted in a weakening of community. Islanders remember fondly the close relationships and sense of community that used to exist, and it was this decline in community relations that many Islanders felt had been the negative aspect of the modernisation that had occurred in recent years.

On the Island there was resultantly a desire to improve interactions between Islanders and restore the strength of relationships to the levels they used to be or even exceed them. When Islanders talked about wanting benefits from renewable energy projects, they wanted economic opportunities which would help sustain livelihoods on the Island, but they also wanted a restoration of community activity. They wanted community centres, and community groups that facilitated social interaction and restored the community spirit of old. MRE was thus not only assessed for the economic impact that it could have but whether this investment would lead to restoration and protection of social capital.

In addition, Islanders wanted to restore and protect the unique Gaelic culture of the Island. Here the shared concern of protecting cultural heritage was interpreted as both being negatively and positively impacted by MRE. The revival of this declining community is what motivates the community development trusts on the Island and across the Highlands (van Veelen & Haggett, 2017; van Veelen, 2017; Haf & Parkhill, 2017). Renewable energy is viewed as an important enabler of community revival, and this is what motivates community energy organisations to develop their projects, and why local benefit provision is central to determining social responses. Renewable energy is not developed purely for the economic benefit, but for the social benefit that can derive from this (van Veelen, 2017;

In sight and in mind: social implications of marine renewable energy van Veelen & Haggett, 2017). Another important aspect of this social benefit is the promotion of cultural heritage including Gaelic language (Haf & Parkhill, 2017).

On the Island, the financial dividend from community-owned wind turbines was being invested into the community, yet, similar to findings from Berka & Creamer (2018), the positive social benefit that was resulting from this money was not clear. There was limited enthusiasm among Islanders to participate in community-led development projects or to develop new projects and services from the turbine proceeds. Community benefit payments are therefore not an end of positive social impacts but rather only a means through which it can be achieved. The social processes through which money is invested in the community and the participation of community members is therefore important for realising actual community benefit (Macdonald et al., 2017).

On the Island, debates about onshore wind energy were very much influenced by Islanders' perceptions of the benefits that turbines can bring. To this end, community energy appeared to be favoured over commercial wind energy as it produces more local investment by keeping the revenues in the community. Dialogue participants appeared to interpret tidal energy in the same way, favouring it over offshore wind energy as they perceived it to produce greater local benefits. They also expressed more pride in a locally situated project which they had more connection to and could feel more ownership of.

Both community-owned energy and MRE are conceptualised as having more benefit per unit of energy produced than larger commercial scale onshore windfarms or offshore windfarms (Kerr et al., 2017; Rudolph et al., 2017). As demonstrated on the Island, three community turbines are producing the same community windfall as 36 commercial turbines are slated to. The scenarios presented to the Dialogue participants illustrated that ten small tidal turbines could create as many jobs as 85 large offshore wind turbines. Community-led energy and MRE projects are therefore perceived by host communities to produce as much benefit to the local community but with much less impact.

The tension in this approach is that if benefits are the number one factor for communities, then they should embrace onshore wind which, as the most mature technology, has greater profitability and more revenues to invest in communities. Even commercial wind is currently able to offer larger benefit payments to communities than MRE could do.

It is therefore possible that MRE could find itself trapped as not being able to provide as large financial benefit payments as onshore wind but still resulting in impacts. For publics who prioritise financial benefits there is little rationale to support MRE over wind energy, and for those who are concerned about negative impacts, opposing both wind energy and MRE would be a natural position to take.

In this section I have shown that community benefits are an important factor for members of potential MRE host communities, particularly in marginal Highland and Island communities. Evidencing positive community benefit is therefore important for achieving positive social responses to MRE in host communities. Without large financial dividends to invest into host communities, MRE may need to evidence other positive social impacts such as the promotion of social capital, community participation and cultural heritage.

## 8.7 Summary

This research has shown that there is strong support for MRE in principle, but that this support is qualified on a number of factors. Chiefly amongst these is the perception of local impacts, which is evaluated based on visual impact, place attachment and local context, scale, trust in decision-makers, and participation in planning processes. These factors have all been previously shown to inform social responses to other renewable energy projects (Haggett, 2011), but this research contributes to the literature by showing that they equally apply to social responses to MRE. It further suggests a new way of understanding these factors as collectively contributing to individuals' appraisal of the social impacts that projects may have on the local community.

Host communities want positive social impacts but at present MRE projects are able to provide less financial community dividends than wind energy projects (Kerr et al., 2017). While MRE may be favoured over wind energy for having less negative local impacts, if ameliorating positive local impacts is genuinely more important to host communities than mitigating negative impacts, it cannot be assumed that MRE will achieve greater public support than wind energy. This is particularly so when MRE is compared to community-owned wind energy (Kerr et al., 2017), which at present offers the best opportunity for community development whilst still having lesser negative local impacts.

The research has shown that host communities want to be involved in decision-making but have typically felt excluded and disempowered from planning processes. Without trust in planning processes and decision-makers negative social responses to MRE projects could occur (Gross, 2007; Wolsink, 2007a; Firestone et al., 2012), even when projects are supported in principle.

As I discuss in the following concluding chapter, in order to ensure more support in host communities MRE advocates need to consider how more public participation in MRE projects can be achieved in order lead to better decision-making, more positive social impacts and social responses.

## Chapter 9 Conclusions

This final chapter considers the implications of my research findings for MRE developers, policy-makers and host communities. I do this by returning to my three research questions to consider how the data I have collected and presented answers these questions. I then put forward the policy and research implications of the answers to these questions, and finally reflect on how this research has contributed to the existing academic literature.

### 9.1 Research questions

This research set out to address three research questions exploring social responses, planning and engagement, and social impacts, and I now discuss them in turn.

#### 9.1.1 Social responses to marine renewable energy: in sight and in mind

My first research question was concerned with understanding the factors which inform social responses to MRE. This thesis set out to identify whether the factors that have been shown to inform social responses to onshore renewable energy projects are also factors in determining responses to MRE, or whether MRE is indeed less problematic and more socially acceptable than onshore renewables, particularly wind. Specifically, I wanted to determine whether MRE would be 'out of sight and out of mind' or not.

The first research question was:

- What social responses do host communities have towards proposed MRE developments? Can MRE be considered to be 'out of sight and out of mind'? If not, what factors do inform social responses to MRE?

At this point it is useful to recall the remarks of the chief executive of a now defunct wave energy company who stated the technology to be "out of sight and out of mind" and therefore maintained that public opposition would not be an issue for wave energy as it had been for onshore wind. O'Keeffe & Haggett (2012: 3718) quote these exact same words from a local stakeholder in relation to a proposed offshore windfarm who was expressing the same sentiment, whilst McLachlan (2010) also reported belief among tidal energy stakeholders that the public favoured tidal energy over wind energy due to the 'lower visual impact'.

Evidence from the Island and Dialogue shows that there is positivity towards MRE projects as they are perceived to avoid some of the issues associated with onshore wind projects, particularly visual impact. At the same time the Island and Dialogue data show that other factors which have been shown to inform responses onshore equally apply offshore and negative responses to MRE can therefore develop.

First of all, it cannot be assumed that there is no visual disamenity from MRE as this research has confirmed previous findings (Firestone et al., 2015) that energy infrastructure is socially constructed and that individual responses to physical infrastructure therefore vary. In accordance with previous research (Devine-Wright, 2013; Batel et al., 2013; Aas et al., 2014; Batel & Devine-Wright, 2015), this study has shown that the onshore infrastructure associated with MRE projects such as power take-off units, substations and transmission cables can draw negative responses, more so even than the devices themselves.

In addition, installing devices in the sea can cause place protective action amongst publics who feel that the wildness of the natural seascape is being altered, as well as amongst people who dislike the enclosure of a public commons for private gain (Kerr et al., 2015). The scale of projects, the trust that community members have in project developers and decision-makers, and the levels of participation in planning processes have all been shown in this research to influence social responses towards MRE projects and result in negative as well as positive responses.

Furthermore, Dialogue participants and Islanders made clear that they consider the marine environment to belong to their community and with it any offshore developments to be a part of their community too. This is particularly important in small, close-knit island and rural communities where nothing can be done without residents being aware of it. In this sense to think a project could be 'out of mind' is not realistic as everyone would be very much aware of what was happening and would have a view on it.

For all these reasons it cannot be assumed that MRE projects can be developed without negative social responses forming amongst certain publics, and that the technology therefore represents an opposition free alternative to wind energy.

Moreover, the Dialogue and Island findings show that support for MRE is conditional on the perceived local benefits of projects. Positive support for MRE was strongly associated with the perception that it would have positive social impacts on host communities. In contrast, there was a distinct lack of support for projects that were not perceived as benefiting the community locally.

This research suggests that if public support for MRE projects is desired, then the positive benefits of projects to communities would need to be highlighted. This would involve making communities aware of projects and engaging them in discussion around the positive impacts that projects may have on their community.

I therefore contend that MRE projects should not be considered as being 'out of sight and out of mind', but instead be reconceptualised as 'in sight and in mind'. Even if MRE has less visual impact than onshore wind energy, it can still cause visual disamenity so cannot automatically be assumed to be out of sight. Even if visual disamenity is not a problem, new projects in small communities with strong place attachments cannot be assumed to be out of mind, as any new development in a small community becomes a part of the community. Furthermore, as positive social responses to MRE projects have been shown to be dependent on the provision of positive social impacts, these need to be clearly demonstrated and put 'in sight' of communities.

With the 'in sight and in mind' approach, rather than dismissing the possibility of negative social responses and the importance of community engagement, they are both actively considered and put 'in mind'. 'In sight and in mind' puts focus on incorporating local voices and community participation into planning processes. It further puts emphasis on considering how communities might be able to maximise any benefits from projects.

To summarise the answer to my first research question, both positive and negative social responses occur towards MRE and are based on a range of factors. MRE should therefore not be dismissed as being 'out of sight and out of mind'. Instead I propose that MRE be conceptualised as being 'in sight and in mind', as this provides a more appropriate acknowledgment of social responses to projects and the factors that inform them. In addition, doing so could then lead to a greater focus on community engagement, consideration of the social impacts of the project, and the potential for benefits to host communities from such projects.

This discussion of my first research question on social responses to MRE has outlined the rationale and evidence for greater public engagement in MRE planning, and I consider this further in the next section with my second research question.

### **9.1.2 Whose islands, whose future?**

My second research question concerned the role of planning processes in informing social responses to MRE and in answering this question I consider both why community engagement is important and how it could be conducted.

My second research question was:

- How do planning and engagement processes inform social responses to MRE? How should these processes be organised for MRE?

The Dialogue and Island findings demonstrate that community participation in many decision-making processes has historically been limited with a widespread perception that views of local people are not considered in decision-making processes; and this has led to scepticism and low-trust in planning processes. The data also show that community members want to have greater control and influence over decision-making and planning processes in their communities. Involving host community members in MRE planning processes is therefore challenging but important. As with Graziano et al. (2017), this research concludes that new a paradigm in MRE planning is required, one which is focussed on greater local participation in decision-making. Following the *Our Islands, Our Future* campaign, I propose that this new approach to MRE planning is focussed on considering 'whose islands, whose future'.

MRE projects and their associated planning processes have not yet been widely experienced by communities; this research has shown, however, that a lack of local engagement and participation in planning could lead to negative social responses. Even if MRE is supported in principle, where MRE planning processes are perceived to engage the public as poorly as previous terrestrial planning has done, then negative responses could occur as a result of the poor planning processes themselves. As with previous research findings for other low-carbon technologies (Gross, 2007; Huijts et al., 2007; Firestone et al., 2012), this research therefore suggests that early and inclusive engagement is important to build trust and demonstrate fairness of process and outcomes.

Embracing meaningful community engagement from the nascence of the industry, could be an advantage for the MRE industry that can set it apart from the wind industry which already has a reputation for poor engagement (Wolsink, 2007b; Firestone et al., 2012). This may be a way to positively differentiate MRE in the view of communities and lead to more positive social responses.

These data have shown that host communities' support for MRE is conditional upon the provision of positive social impacts. Host communities are actively seeking positive social impacts, and community participation in MRE planning would help to identify how these impacts could be achieved. This suggests that there is both an instrumental and a substantive rationale for involving host community members in MRE planning.

The instrumental approach seeks to reduce negative social responses (Irwin, 2006) and has been the motivation behind previous public engagement around renewable energy (Cowell, 2007). The substantive rationale is that community participation will lead to better decision-making and technological and social outcomes (Wilsdon & Willis, 2004). There is therefore a role for public participation in MRE planning to inform the identification and manifestation of social impacts of projects and to contribute to the ongoing assessment of ex post social impacts.

In proposing the 'whose islands, whose future' approach I am not concerned with the best project outcome but the best community outcome. As a democratic principle, community members should be able to decide what is best for their community's future and have their voice heard and valued in 'ideal speech communities' (Habermas, 1976). Local people may therefore determine that no MRE project is suitable for their community and this should not be seen as 'deviant' opposition (Aitken, 2010b). Having outlined why I believe engagement matters for MRE, I now consider how such engagement could be conducted.

As outlined in Chapter 2.1 at the beginning of this thesis, the Scottish contexts around community empowerment and marine planning are to devolve decision-making to local communities with the aim of utilising natural resources to develop sustainable communities. Similarly, through the *Our Islands, Our Future* campaign, Scotland's island communities have been calling for greater local control of the marine environment to enable island people to benefit from island resources. MRE planning, however, has so far remained outside the programme of devolution and continues to be decided on by the

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Scottish Government at Holyrood and in so doing puts the emphasis on project outcomes rather than community outcomes.

This research adds further support to the call for a new paradigm in energy planning in the Highlands and Islands (Graziano et al., 2017). One that focuses on addressing the conflicting opinions in these communities towards MRE, and other renewable energy, as identified in the Island findings. There are important issues around MRE planning with which 'lay' local publics could be involved; concerning whether energy technologies are suitable for a community, what scale and form of projects are appropriate, what positive social impacts are desired, and how MRE can contribute to positive community development.

One of the important challenges for public participation in MRE planning that this research has identified is the design of engagement processes that include members of a community who are reluctant and sceptical of participating due to their previous experiences with decision-making. These past experiences have left people frustrated with decision-making processes, believing that there is no point to engage in consultative processes as these are tokenistic at best and that community voices will not be able to influence outcomes. Community engagement processes must therefore empower host community members to participate, as simply giving people an opportunity to participate does not automatically mean that they will do so (Aitken, 2010a). This is particularly the case in communities such as the Island where there is strong apathy towards decision-making processes based on past negative experiences.

Within the Island context, one way to empower people would be to recognise and value the Gaelic cultural identity and heritage of the Island. Conducting community engagement processes in both English and Gaelic would demonstrate that decision-makers understand and appreciate Gaelic heritage and Gaelic speakers' unique viewpoints and knowledge and actively welcome them in the decision-making process. It would mark an important distinction from previous planning which has actively excluded such knowledge. Further, actively investing in and promoting Gaelic language would be a positive social impact for the Island and other Gaelic communities in the Highlands and Islands as it would both create jobs in the Gaelic industry and engender pride in the language and its heritage.

Islanders' and Dialogue participants' poor past experiences with planning and decision-making were related to both locally and nationally-led planning processes. There was

In sight and in mind: social implications of marine renewable energy limited trust in the local authority on the Island and across the Dialogue workshops, with a feeling that these authorities served themselves rather than their communities. Devolving decision-making to the local level, as called for by these local authorities in the *Our Islands, Our Future* campaign, will not therefore lead to greater community participation or improved planning processes if there are not commensurate improvements in how local authorities conduct these processes. Particularly, there is a need to ensure that power is not simply devolved to elite stakeholders at the local level who monopolise power and conduct tokenistic consultation that privileges existing forms of 'expert' knowledge.

Whilst I conclude that greater community participation in MRE decision-making is desired, devolution of decision-making should only be completed when it is accompanied by resources and expertise to invest in localised planning processes. For local people to have meaningful control over decisions in their communities there is a need to improve the existing engagement processes and empower people to participate in decision-making processes. This is the key factor and MRE planning processes that involve community participation could be initiated from either the local or the national level.

The engagement processes that I call for need to move beyond tokenistic consultation based on the 'decide-announce-defend' model and instead give citizens control (Arnstein, 1969). This approach recognises all forms of knowledge not just technocratic 'expert' knowledge (Chilvers, 2009; Aitken, 2010a) and allows citizens to have early input into deciding whether to take forward project proposals in the first place and then to have continuing input through the project cycle including ex post measurement of social impacts.

In order to do this, it would be necessary to invite a representative group of local people, such as those invited to the Dialogue workshops, to work with professional facilitators in determining community priorities and project plans alongside policy-makers and MRE industry and community development professionals. In this way, members of the community who are not normally involved, or empowered to be so, are recruited directly into the planning process, and professional planners and decision-makers are able to hear 'lay' voices. It is essential that this community group has meaningful input into decision-making throughout, as otherwise, if the process does not maintain high levels of participation, and instead reverts to tokenism, then community trust and empowerment can be lost (Dinham, 2007).

This point is vital in order to counter the widespread apathy towards the planning process on the Island which has built up following decades of disappointment in consultation practices. This disillusionment and frustration, which is now deep within the culture and prevailing discourse of the Island, can only be reversed by sustained good practice in participation in planning. Meaningful community participation in planning processes, which value local 'lay' knowledge, is therefore required consistently across all planning processes, and throughout these processes, in order to build up trust and demonstrate that participation in decision-making can influence outcomes.

In summary, most important is that MRE planning processes should focus on understanding which voices matter and why, and I suggest conceptualising this framework as 'whose islands, whose future'. This paradigm would focus on incorporating 'lay' local voices in decision-making, not just elite local stakeholders, and facilitate community participation in decision-making accordingly. The concept also challenges established epistemologies and ontologies within the planning sector and recognises the value of local 'lay' knowledge and social constructions in supporting better decision-making (Aitken, 2009; 2010a). Following Graziano et al. (2017) the approach is concerned with understanding how MRE can best contribute to community development in marginal communities around the Scottish coast, particularly in the Highlands and Islands. Despite focussing on community outcomes rather than MRE project outcomes, given the importance of positive social impacts to positive social responses to MRE, it is anticipated that this approach could lead to positive outcomes for both communities and industry.

### **9.1.3 Crofting alone**

The third research question that I set out at the beginning of this research concerned social impacts:

- What social impacts will MRE have on host communities? How should social impacts of MRE projects be assessed?

The data from the Dialogue and Island reveal a number of potential social impacts on MRE host communities covering all of the variables identified by the Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (ICGPSIA, 1995) outlined in Chapter 2.2.1: population characteristics; community and institutional structures; political and social resources; individual and family changes; and community

In sight and in mind: social implications of marine renewable energy resources. In answering the research question, I now discuss these impacts before considering how they could be assessed.

The geographically suitable locations for MRE projects in Scotland are typically in less economically favoured regions, and MRE developments represent a potential pathway to local regeneration in these areas (Graziano et al., 2017). To this end, both Islanders and Dialogue participants were actively looking for positive social impacts and were more concerned with ameliorating these than mitigating negative social impacts. Furthermore, as concluded in chapters 8.6 and 9.1.1, this research shows that positive social responses are qualified on the provision of positive social impacts.

Potential positive social impacts identified by Dialogue participants and Islanders related to public services such as schools and healthcare and amenities such as shops and community centres, which in many rural communities are struggling to survive. MRE could have a positive social impact by leading to direct and indirect job creation and financial investments and the arrival of new people who could support and sustain these essential services.

Conceivable negative social impacts included additional strain on already fragile public services and infrastructure as well as loss of amenity from visual impacts, increased noise pollution, and increased traffic. Understanding how to measure these social impacts is a challenge as variables such as these are socially constructed and depend on personal interpretations as well as pervading community discourses. As discussed in 8.1, the visual presence of a turbine does not necessarily lead to visual disamenity, nor does the physical noise of a helicopter automatically result in an audial disamenity. Other important social impacts, such as changes in the complex emotional bond between people and their meaningful environments which form place attachments, can be even harder to quantify.

On the Island the potential social impact on the Gaelic cultural heritage was a very important consideration, and renewable energy projects were perceived as both a threat and opportunity to this. This heritage, which has been steadily lost over recent years, is a strong component of Islanders' identity and is what distinguishes 'home' from 'away' and underpins Islanders' deep place attachments to 'home'. Loss of this heritage results in significant negative social impacts that are hard to measure and quantify due to their subjective and personal form.

Some Islanders felt that new industrial developments such as MRE would lead to more outside ideas coming in and a loss of traditional practices. At the same time, however, other Islanders perceived these same new developments to be a way of halting depopulation and retaining people, traditions, culture and language on the Island, and therefore having a positive social impact.

Similarly, in the Highland and Island Dialogue workshops, participants identified unique aspects of the culture and lifestyle of these places such as safe communities, kindly and reliable neighbours, and valued environments that could be both positively and negatively impacted by MRE projects depending on whether they help maintain these characteristics or undermine them through influxes of new people.

Along with the erosion of heritage on the Island, there has also been a weakening of the social bonds that traditionally bound crofting communities together. This has also had negative social impacts with Islanders feeling that social relationships are no longer as fulfilling as they were before. Further erosion of highly valued traditions, culture, language and community bonds would have a significant negative social impact on the Island, whilst if these trends could be reversed that would lead to positive social impacts.

Particularly on the Island, the research shows that social relationships have been weakening due to a decline in communal crofting activity and increasing individualism stemming from use of modern technology and personal transportation. These are the same factors Putnam (2000) cites as decreasing social capital in his book *Bowling Alone*. An important social impact of MRE projects can therefore be considered as the extent to which they build or erode social capital. Drawing inspiration from Putnam's work, I contend that in order to understand social impacts in host communities such as the crofting communities on the Island, it is necessary to understand why people are 'crofting alone'.

In the 'crofting alone' approach, community relationships are identified as an important social impact and the extent to which projects affect the strength and manner of these community bonds is actively assessed and policy measures taken with the aim of enhancing them. Under this approach the social impact of MRE projects on community bonds and social capital are actively considered, and the tracking of changes therein is undertaken as a useful approach to measuring social impacts (Ennis & West, 2013).

Whilst MRE projects were viewed positively by Islanders and Dialogue participants compared to wind energy projects as they were perceived to have fewer negative impacts, they were also understood to have less ability to provide positive financial impacts. As new and developing technologies in a nascent industry, MRE projects are not presently able to make significant financial returns and thus cannot provide economic investment into a host community. Financial impacts, however, were not what communities were looking for directly, instead they were concerned with the positive social impacts that could result from financial investments in community services and amenities. It would therefore benefit the MRE industry to understand the potential positive social impacts of MRE projects in terms of community empowerment and building social capital and to seek to realise these social impacts and to demonstrate that they occur.

This further identifies the rationale behind increasing public participation in MRE planning both ex ante and ex post and including public participation in the assessment of social impacts as part of this process. Conducting social impact assessments can identify how to ameliorate the positive impacts of projects (Vanclay, 2003) and have a positive impact on social development, particularly in marginal communities (Esteves & Vanclay, 2009). Involving community members in the social impact assessment process should be essential to the assessment process (Voyer et al., 2012) as it enables them to consider what matters in their community, and can represent a form of the empowerment I identified in 9.1.2 as necessary for increasing public participation in planning processes.

Through a process of early and ongoing engagement, communities could decide what projects they would like, how they should be managed, and then continue to monitor the impacts. This could particularly include the assessment of important social impacts that contribute to community wellbeing but are generally unmeasured, such as culture, history, tradition, 'sense of place' in the lives of communities, and social capital. As much of these impacts are subjective and qualitative, they can most effectively be identified through community participation that lets community members determine what social impacts are and how they are felt.

As with the planning processes that I propose in 9.1.2, conducting these types of participatory methods is not straightforward and requires considerable investment of resources, but these two elements of deliberative planning and measurement of social

In sight and in mind: social implications of marine renewable energy impacts could be conducted together. The methods employed in the Dialogue workshop suggest that these methods are feasible and that a cross-section of the community can be recruited and engaged in discussions of this type. Designing and facilitating appropriate deliberative workshops is, however, crucial to successful outcomes and will be challenging.

In summary, this research has shown that providing funding or infrastructure to a community is necessary but not sufficient to achieving community development. Meanwhile, involving people in decision-making, deciding what is best for their community, and evaluating the outcomes of projects can contribute to community empowerment and be a positive social impact, even without the provision of infrastructure. Processes that build social capital are both an end in themselves and also the means to greater future ends and should be focussed on as part of the community empowerment and localism agendas.

### **9.1.4 Summary**

This research has shown that there is positivity towards MRE projects in potential host communities where community members see renewable energy projects as an opportunity for local development. Support for MRE, however, is not unconditional and rather is qualified on the perception of positive local impacts outweighing negative impacts. Other factors such as transparent and fair decision-making processes, motivations of developers, and the scale of the distribution of impacts also influence social responses. To that end, whilst MRE is compared positively to wind energy as it is perceived to have fewer negative impacts, it cannot be considered to be an opposition free alternative to wind energy that is 'out of sight and out of mind'.

Potential MRE host community members actively welcomed MRE projects that they perceived could positively benefit their community and believed that projects located offshore from their community belonged to their community. I therefore contend that MRE projects should be characterised as 'in sight and in mind' as this more accurately describes the relationship between host communities and projects. This approach puts further emphasis on understanding the social implications of MRE including how communities respond to projects, and are impacted by them, and how publics should participate in MRE planning processes.

Host community members want to be involved in decision-making around MRE and conducting tokenistic consultation could result in negative social responses arising. Local

In sight and in mind: social implications of marine renewable energy voices, knowledge and expertise could be valuable for MRE developers in developing their projects and would also identify how projects could have the greatest possible positive social impact on the community. Planning processes should therefore be employed that empower participation from community members to decide on what MRE developments, if any, are appropriate for their community. I thus propose 'whose islands, whose future' as a framework for conducting MRE planning. In this approach emphasis is put on giving the people who live in potential MRE host communities the power to decide what MRE projects, if any, are appropriate for the future of their community.

Positive social impacts are not only felt in economic terms, but also in terms of community relationships. Assessing the impact of MRE projects on social capital is therefore important in Highland and Island communities where people are increasingly 'crofting alone'. A positive social impact that MRE could have would be to increase social capital by giving community members more opportunity to interact with each other and with outside decision-makers. In order to assess social impacts, including social capital, community participation is required as this is the best way to measure and quantify the personal impacts that MRE projects could have on relationships between community members, place attachments and the sense of pride that people feel in their community.

Having answered my research questions, I now discuss the implications of these findings.

## **9.2 Implications**

Having set out how I have answered my research questions in 9.1 above, I now discuss the implications of these findings. In Chapter 2 I outlined the context and policy around MRE in Scotland related to marine planning and localism and it is within this context that I consider the implications of this research.

Scotland has substantial wave and tidal energy resources and developing MRE technologies and projects has been a strategic goal of the Scottish Government since devolution. The MRE industry, however, has not developed as rapidly as initially hoped and technology deployment has thus far been limited. As new uses for the marine environment have developed, and alongside greater policy emphasis on marine conservation, marine planning has appeared as a new and important regimen for managing Scotland's seas. As a new sector, marine planning regulations, procedures, practices and processes are still being

In sight and in mind: social implications of marine renewable energy developed, and there is therefore significant potential for research to influence best practice in marine planning.

Alongside the marine planning context, there is a move to local devolution in decision-making within Scotland, both in marine planning and within Scotland's communities at large. This devolution is welcomed by communities in the Highlands and Islands who want greater control over developing their natural resources to support local community development. MRE planning, however, is presently an exception to this devolution trend as consent for MRE projects remains decided on nationally at Holyrood.

In addition, and as outlined in Chapter 2.2, there is a recognition that the social impacts of marine plans are poorly understood, and that better methodologies are required in order to assess the social impacts of MRE and other marine plans on local communities.

This research has detailed how potential MRE host communities respond to the prospect of MRE project developments in their communities, and the factors which inform these social responses. From the data presented here, I have identified a number of implications for the MRE industry and policy-makers related to marine planning, localism and community engagement. Specifically, I contend that there is a need for greater public participation in MRE planning both ex ante and ex post in order to benefit both MRE developers and host communities, which I now outline further.

First, this research has shown that social responses to MRE are based on a number of factors including visual impact of offshore and onshore infrastructure, scale of projects, place attachment, trust in developers and decision-makers, and participation in planning processes, and that negative social responses can occur based on these factors. MRE technology cannot therefore be dismissed as 'out of sight and of mind'. To this end, MRE developers must be aware that negative social responses could potentially arise and lead to delays and disruption to technology deployment which could be damaging for the MRE industry.

The implication of this research is that in order gain positive community support for MRE projects it is necessary to demonstrate the positive social impacts of the project for the host community. To date, the MRE industry has considered that publics will favour MRE over wind energy as it is less visually intrusive, however this research suggests that positive

In sight and in mind: social implications of marine renewable energy support is founded on positive socio-economic benefits, which at present MRE projects are less able to provide than wind energy projects. If MRE is to capitalise on the possible reduced visual impacts of the technology compared to onshore wind energy, it needs to be able to demonstrate the positive social impacts of the technology.

Without large financial revenues from MRE projects, MRE developers and industry therefore need to identify and consider how else MRE can have positive social impacts in host communities. These benefits could include increased social capital, strengthened community relations, local ownership of resources and decision-making, and celebration and promotion of community assets, culture, heritage and Gaelic language. If MRE is to support community development, then it is necessary to engage more closely with communities to realise benefits and put this at the heart of planning. Moreover, effective community engagement is required in order to benefit communities as well. Public participation in planning is required to ensure that MRE developments are only undertaken if they are appropriate for the community and that projects are managed to ameliorate positive social impacts and mitigate negative impacts.

Framing MRE projects around community development to address socio-economic issues in the Highlands and Islands is likely to lead to more positive social responses in host communities. Policy-makers and marine planners therefore need to consider how to put MRE 'in sight and in mind' for potential host communities by empowering community members to participate in planning processes and derive positive social impacts from projects. In addition, having placed communities 'in sight and in mind' it will be easier for policy-makers to develop focus on the social impacts of projects and processes that empower communities and build social capital.

Novel methods are required to empower participation and develop community engagement processes that genuinely listen to local concerns and are not seen as tokenistic rubber-stamping exercises, but as genuine attempts to hear and respond to local concerns. Given the polarised responses towards decision-making in communities identified by this research, processes need to allow both sides of the argument to be heard and incorporated into decision-making and lead to more respected and trusted outcomes.

The evidence from the Island shows that designing these methods is challenging, but the Island and Dialogue have both shown that community members want to be involved in

In sight and in mind: social implications of marine renewable energy these processes. The public dialogue approach taken in the Dialogue research component has given some insight into how this process could work. Recruiting a representative sample of the community who are not ordinarily involved in decision-making processes was an effective way of hearing 'lay' community voices and engaging community members in this debate. Conducting this dialogue early in the planning cycle was helpful for informing community members of possible developments in their locale and getting decision-makers from central government to hear the concerns of local people.

This approach could be built upon by having regular events throughout the planning cycle with professionally facilitated discussions between community members and representatives of industry and government determining how each project phase is taken forward. This of course takes time, money and energy, but is a step towards the 'ideal speech communities' advocated by Habermas (1976), and could ultimately lead to positive impacts for both communities and industry.

MRE is one aspect of both an extensive and complex energy network and an interconnected marine planning system. This research suggests that the meaningful public participation outlined above should not be concentrated, as currently it is, on plans for individual project components in isolation, but instead be conducted early in the planning process and integrated within the wider context of marine planning, energy planning and community development.

Accordingly planning processes need to consider the rationale for developing MRE in these communities and reconcile the differences between local and national priorities. MRE has variously been advocated for climate mitigation, security of supply, national industrial strategy, and local development. Local development and positive community benefit were identified by participants in this research as the primary motivation for developing renewable energy in Scottish communities, and the perception of the social impacts of MRE projects upon host communities was the key determinant in social responses with positive social responses associated with perceived positive social impacts.

In order to determine the social impacts of MRE projects, and new inclusive participatory engagement methods, it is necessary to make the assessment of social impact a routine part of the planning process both ex ante and ex post. Social impact assessment should be a

In sight and in mind: social implications of marine renewable energy part of the novel planning process outlined here and involve community members in eliciting, identifying and monitoring social impacts.

Finally, the skills required for community engagement are very different to the engineering knowledge required in project design and MRE developers and marine planners need to be aware of the importance of good community engagement processes and how to conduct them. Marine planning needs to learn from community development practice, professionals and literature to determine how marine planning processes can best incorporate community voices and contribute to positive social impacts.

Better aligning the work of MRE planners and community development professionals could therefore lead to mutual benefits. By recognising the role of building social capital in contributing to community benefits, the MRE sector could design early engagement practices that help build bridges amongst members of a community and link them to outside organisations. These practices could then continue through the construction and operation phases of a project to contribute to ongoing social benefits.

In summary, this research has identified several implications for marine planners and the MRE industry around how, when and why community engagement with MRE planning should be conducted. Early and ongoing public participation in planning is required to create transparent processes that lead to more acceptable outcomes for communities.

### **9.3 Contribution**

This research has put the sociology of MRE in sight and in mind. As outlined in 9.2 above, the research has made a practical contribution to understanding the social implications of MRE for industry and policy-makers. It has also contributed to the academic literature on social responses to MRE.

Social responses to wind energy have been well studied, but to date there has been limited study into social responses to MRE or the social impacts of MRE projects. This has been a recognised gap in the literature (Uihlein & Magagna, 2016; ORJIP Ocean Energy, 2017) and there has been a clear agenda for further social science research into MRE (Kerr et al., 2014) and this thesis has contributed new knowledge aimed at filling this gap and addressing this agenda. It has done so by utilising a qualitative methodological approach which had not been widely used before in the study of social responses to MRE, and which

In sight and in mind: social implications of marine renewable energy had been identified as important for better understanding the complexity of factors that inform social responses (Aitken, 2010b; Wiersma & Devine-Wright, 2014; Kerr et al., 2014). Specifically, it has been novel in employing an ethnographic approach that has detailed how social responses are socially constructed in a potential MRE host community. This in-depth sociological account of the community provides new understanding of the relationship between people and energy infrastructure and projects.

This research has determined that MRE projects cannot be assumed to be 'out of sight and out of mind' and that the social implications of MRE must be considered. It therefore supports the assertion of Kerr et al. (2014) that social science research into MRE is valuable and has practical implications. The research has contributed new knowledge on public participation in MRE decision-making and social impacts of MRE projects, both of which Kerr et al. identified as important areas for MRE social research. This research has given better clarity on the types of participation and social impacts that communities are after and that future research should focus on exploring. This research has also supported the work of Graziano et al. (2017) that MRE planning processes ought to be redesigned to focus on local participation and maximising community development.

From a methodological point of view, this research has employed two approaches and shown the validity of each. The ethnographic Island findings illustrate the attachments that Islanders have to their 'home', how they view planning and decision-making processes, and how the social responses of a potential MRE host community are socially constructed. In contrast, the Dialogue details findings on social responses from an external policy-maker-led process approach. The research has contributed to the literature by showing the worth of both approaches and the different results that each brings as well as revealing the contrasting priorities between communities and policy-makers in terms of MRE planning.

To finally conclude, this research has contributed to both academic and policy discussions around MRE planning. It has shown that a greater focus on understanding the social implications of MRE technology deployment is an important consideration for policy-makers and industry, and a valuable area for future academic study. Through its in-depth focus on the sociology of MRE, which has contributed new insights to the academic literature and a live policy area, this thesis has put the social implications of MRE 'in sight and in mind'.

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## Appendix

### Article I submitted to local Island magazine in Summer 2015

#### Westsiders and Waves by Rhys Howell

As any Siaraich knows, there is plenty of power in the waves that perpetually pound into the shore along the Westside. This power can potentially be used to generate electricity for our homes. Just as wind turbines harness the power of the wind, devices which turn the power of the waves into electrical energy, could be installed in the sea.

At present these wave energy devices are still being designed and tested and are therefore unlikely to be seen on the Westside anytime soon. The area, though, has been earmarked for wave energy project development once the devices are proven to work. Indeed, there have already been (as yet unrealised) proposals for wave energy projects along the coast near [here].

With an abundance of waves and wind, the [Island] could generate large amounts of renewable energy, and make a significant contribution to preventing climate change, moving away from fossil fuels and increasing national energy security. Any renewable energy developments on the Island should, however, be done in a way that is appropriate for the local communities. Unfortunately, until now, project developers have often failed to properly consider the needs and concerns of local people.

I am a research student at the University of Edinburgh studying the relationship between people and renewable energy. I am particularly interested in how people in coastal communities feel about having wave energy devices installed in the sea near them, and how this might affect the community. Many of you will have seen and spoken to me over the past weeks as I endeavour to answer these questions.

I have been active in the area as I seek to understand the relationship between people, energy and the sea on the Westside. I have been helping to cut peat, nurture vegetables at the community growing project, and build the new Westside skiff (which is featured elsewhere in these pages). I have taken Gaelic lessons, and long walks on the beach. In short, I am trying to know and understand the Siaraich.

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I particularly would like to know what the sea and the shore mean to people on the Westside. What role does it play in everyday life? Is it a wild, natural place to be avoided? Or perhaps a beautiful spot to be cherished and protected? Is it a resource for humans to use, exploit, and modify, as they have done since the first people arrived on the Island?

I shall continue to be around over the coming days and weeks seeking answers to these questions and more. It is important that the voices of local people are heard, as it is only in this way that energy projects can be developed with the needs and concerns of the local community in mind. So if you see me, please do stop for a blether. I can also be reached on email: [rhys.howell@ed.ac.uk](mailto:rhys.howell@ed.ac.uk)



Examples of wave energy devices currently being designed and tested in Orkney



Rhys at the shore

**Article I submitted to local Island magazine in Spring 2016**

**Dh'iarr am muir a thadhal – The sea wants to be visited** by Rhys Howell

Over the past twelve months that I have been on the Island, conducting research in to how the development of wave and tidal energy projects might affect the communities of the Westside, I have become increasingly interested in the relationship that residents have with the sea. Appreciating the role that the sea plays in everyday life today, is important for understanding how marine energy developments may be received by the community.

During my time here I have been privileged to interact with the sea in many ways, and hear stories of how it has shaped the lives and culture of Islanders for many generations. I have learned how the sea has provided for life, but has also cruelly taken it away. I have witnessed how the sea influences daily life through the weather, and availability of supplies and connections to and from the mainland.

I have listened to the sound of the waves wafting peacefully through the village on a still night. Sat on the headland, I have gazed serenely out across the Atlantic when the sea is calm, and felt the spray from the waves crashing powerfully into the rocks when it is stormy. I have wondered at the continually shifting sand on the shore, which leaves the beach different every time I visit. I believe am not alone in this, as I have often seen people coming down to look at the position of the sand, and the seaweed deposited upon it.

I have got a different perspective of the sea (and the land) by venturing on to it. Rowing, the new Westside skiff, and sailing the last remaining original sgoth, I have explored many lochs and much coastline. I have become horribly ill crossing the [sea] on the ferry!

I have heard many songs inspired by the sea, revealing the influence that it has on life and culture. Indeed, [the skiff] takes its name from an eponymous fishing boat popularised in a local song at a time when the shore was lined with boats, and the sea was full of fish. The labours of fishing feature in *Balaich An Iasgaich*, while the sea and local landmarks such as Cràgam Rock form the backdrop to love stories like *Chàluim Sgìre*.

In this short time, I have been lucky to enjoy many rich experiences with the sea, which have helped to illustrate the roles that boats and seafaring play in economic, recreational and cultural activities. However, I can only hope that these experiences do justice to the

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many more ways that the sea shapes the everyday lived experiences of the people on the  
Westside. I would be delighted to find out more about the relationship that you have with  
the sea, and whether the old Gaelic proverb, dh'iarr am muir a thadhal, is correct, and the  
sea does truly want to be visited. Please get in touch for a chat: [rhys.howell@ed.ac.uk](mailto:rhys.howell@ed.ac.uk)



Rowing to Cràgam Rock and sailing in the Loch