

A QUALITATIVE, MIXED METHODS APPROACH TO FINDING THE ROLE OF AGENTS FOR CHANGE IN THE DEVELOPMENT OF MARINE RENEWABLE ENERGY IN ISLAND REGIONS

SUZANNAH-LYNN BILLING¹

Scottish Association for Marine
Science

Suzi.Billing@sams.ac.uk

KENNY BLACK

Scottish Association for Marine
Science

Kenny.Black@sams.ac.uk

LAURENCE MEE

Scottish Association for Marine
Science

Laurence.Mee@sams.ac.uk

ABSTRACT

This study uses a qualitative, mixed methods technique to explore the concept of agents for change in the context of community within the case study of wave energy development on the Isle of Lewis and on Orkney, in the Highlands and Islands region of Scotland. It gives a summary of the developed methods and why they were chosen and briefly discusses the role of agents for change and the issues that they face.

INTRODUCTION

Scotland has pledged to reach an ambitious target of meeting 100% of the nation's electricity demands through renewable energy by 2020. Scotland is strategically well positioned to reap the benefits of a low carbon economy. It has 25% of Europe's total extractable wind and tidal resources and has 10% of its total extractable wave resource [1].

One of the major barriers to renewable energy development has been identified as local social opposition [2], [3]. However, in stark contrast to both on and offshore wind where support is limited and opposition is more likely [2]–[7], a review of literature on the development of wave and tidal energy seems to show that there is support for wave and tidal energy conversion [8], [9]. Devine-Wright [7] and McLachlan [10] opt for psychological explanations for both opposition and support of marine renewables, whereas Bailey et al. [11] suggest that public opinion may be swayed by a few influential individuals working within local communities. These individuals may be classed as agents for change.

Agents for change are people who have the skills, leadership, and influence to start and manage change. Literature on agents for change suggests that agents for change are integral to innovation and progression –but is limited to business and education sectors, where agents for change are employed for their skill set, are given the power and resources to do their jobs, and where change is necessary to keep up with constant competition and innovation of technology and human understanding [12]–[15]. The aim of this study was to develop a method that could identify agents for change, find out their role in wave energy developments, and

explore the issues that they come across when working on new projects.

TAKING A QUALITATIVE APPROACH

Using qualitative methods over quantitative methods allows a researcher to enquire into the complexities of human behaviour whilst keeping a rich contextual background or keeping '*meaning a purpose*' in the data [16]. It is used in research areas where statistical analysis would generalise to an extent that it would strip the data of contextual meaning [17]. As the nature of this study is exploratory and aims to look in-depth at the human aspects of the marine renewable energy system, a qualitative approach has been taken allowing for assessment of relationships and helping to reveal complexities and social phenomena.

METHODOLOGY

The methodology for this project is a tiered combination of four methods (see figure 1). Grounded theory is a methodological approach and is unique in the fact that concepts are built up from collected data rather than conceived before data collection – the theory is grounded in evidence [18].

Classic grounded theory allows the researcher to justify concepts by evidence in real social contexts rather than trying to force the results into a pre-conceived and perhaps ill-fitting theory. In order to achieve scientific rigour, grounded theory requires that all the evidence is visited, revisited and compared. It is an iterative technique where evidence needs to be produced through coding and category development. This ultimately ends in concept development [19], [20]. Grounded theory does not produce a conclusive theory, but rather a concept that can be modified for different instances. The produced concept should be recognisable for people familiar with the researched topic [21]. This first step – of theory building from collected data was completed during the first case study, on the Isle of Lewis. The concepts developed from the case study data were then taken to Orkney to be further explored - a) to see if the concepts from Lewis held up and b) to build a better understanding of the areas where the

¹Corresponding author: suzi.billing@sams.ac.uk

[Type text]

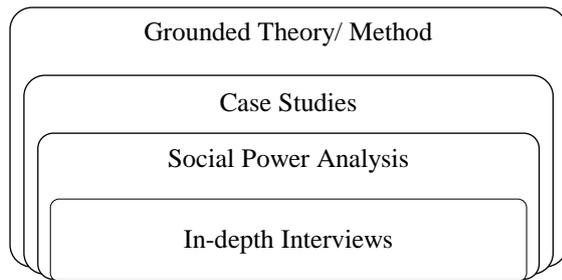


Figure 1. The 4 methods that were used for this study where Grounded Theory is the overarching philosophy for the rest of the project, and in each of the case studies a social power analysis was completed before moving on to the in-depth interviews.

concept didn't fit, through further data collection. The data collection for each case study consisted of two steps.

Step one was Social Power Analysis (SPA). SPA is used to find informal structures of power, where the people that are influencing decisions may not be the people that hold decision-making positions [22]. Two types of SPA were used, one was the *reputational* technique and the other was the *decisional* technique. The reputational technique asks a set of informers who they think holds the most influence within a community about a specific topic, i.e. wave energy [22]. The decisional technique looks at who exercises power within certain 'controversial' situations [23] – the situations for this study were based on wave energy decisions in the localities of the case studies. Using these two methods together a list was drawn up of people to conduct in-depth interviews with.

These interviews were semi-structured allowing for further exploration of themes as they emerged during the interviews. This technique provides detailed accounts without the interviewee moving too far off-topic [24].

RESULTS/ DISCUSSION

This method resulted in finding that agents for change were prominent people within the local communities who did not hold decision-making positions. They also seem to have the ability to sway public opinion as Bailey et al. [11] suggested. All of them were instrumental in the development of wave energy in their localities.

In both case studies the agents shared a similar pattern when they were involved in projects (including wave energy), see figure 2. The *development* phase is when agents are getting a project off the ground. There are few people involved and the agent generally holds the most power and influence over the project. As the project develops more people get involved and the agent loses or delegates decision-making power.

The project moves into the *overlap* phase when it is up and running and the agent is getting ready to hand over management to someone else. This is the most turbulent time for a project because it is when there are the most people, with the most qualifications and experience trying to consolidate the project. This can create tensions. If the agent for change leaves without choosing new management, has been unable to be involved in choosing new management, or has chosen the wrong management team the likelihood of the project failing late in the overlap phase or early in the consolidation phase is also increased. If a project is going to fail – it's during this phase. The *consolidation* phase is when the agent has successfully handed over the management and the project has been running for a while.

One of the projects that two of agents for change have been involved in which has gone through these stages successfully and managed to reach the consolidation phase is the European Marine Energy Centre in Orkney. However there were many other projects portrayed by the agents that did not make it to the consolidation phase.

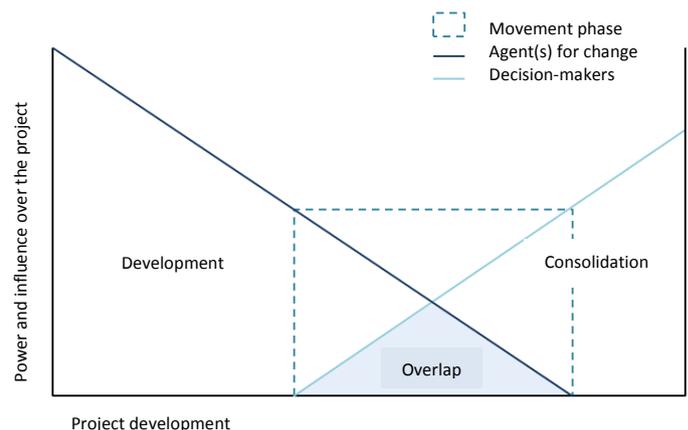


Figure 2. Phases that agents for change go through over the course of a project.

CONCLUSIONS

The 'soft' approach to the data collection meant that the researcher gained a rapport with the agents for change and those involved in the SPA who, in turn helped the researcher to contextualise the data by providing information on the culture as well a historical background of renewable energy issues of the case studies from an experiential point of view. Backed up by literature these experiences have enabled the researcher to build up concept of the phases that agents for go through over the course of a project. This concept may help agents for change identify where and why projects fail. Further research would include how to address these issues successfully.

[Type text]

REFERENCES

- [1] The Scottish Government, "A Low Carbon Economic Strategy for Scotland," 2010. [Online]. Available: <http://www.scotland.gov.uk/Resource/Doc/331364/0107855.pdf>.
- [2] renewableUK, "Marine Energy in the UK: State of the Industry Report 2012," 2012. [Online]. Available: <http://www.bwea.com/pdf/publications/Wave & Tidal SOI 2012.pdf>.
- [3] J. Ladenburg, "Stated Public Preference for On-Land and Offshore Wind Power Generation," *Wind Energy*, vol. 12, no. 2, pp. 171–181, 2009.
- [4] J. Firestone and W. Kempton, "Public opinion about large offshore wind power: Underlying factors," *Energy Policy*, vol. 35, pp. 1584–1598, 2007.
- [5] B. Snyder and M. Kaiser, "A comparison of offshore wind power development in Europe and the US: Patters and drivers of development," *Appl. Energy*, vol. 86, no. 10, pp. 1845–1856, 2009.
- [6] C. Haggett, "Understanding public responses to offshore wind power," *Energy Policy*, vol. 39, no. 2, pp. 503–510, 2011.
- [7] P. Devine-Wright, "Re-thinking NIMBYism.," *J. Community Appl. Soc. Psychol.*, vol. 19, pp. 420–441, 2009.
- [8] C. McLachlan and T. C. for C. C. Research, "Tidal stream energy in the UK: Stakeholder perceptions study," The Tyndall Centre for Climate Change Research, 2010.
- [9] P. Devine-Wright, "Enhancing local distinctiveness fosters public acceptance of tidal energy: A UK case study," *Energy Policy*, vol. 39, no. 1, pp. 85–93, 2011.
- [10] C. McLachlan, "'You don't do a chemistry experiment in your best china': Symbolic interpretations of place and technology in a wave energy case," *Energy Policy*, vol. 37, no. 12, pp. 5342–5350, 2009.
- [11] I. Bailey, J. West, and I. Whitehead, "Out of Sight but Not out of Mind? Public Perceptions of Wave Energy," *J. Environ. Policy Plan.*, vol. 13, no. 2, pp. 139–157, 2011.
- [12] F. Vermeulen, P. Puranam, and R. Gulati, "Change for Change's Sake," *Harv. Bus. Rev.*, vol. 88, no. 6, pp. 70–76, 2010.
- [13] A. Hargreaves, *The Emotion of Teaching and Educational Change*. Netherlands: SpringerLink, 2005.
- [14] M. Fullan, "Leadership development; The larger context," *Educ. Dev.*, vol. 67, no. 2, pp. 45–49, 2009.
- [15] F. C. Lunenburg, "Managing Change: The role of the Change Agent," *Int. J. Manag. Bus. Adm.*, vol. 13, no. 1, pp. 1–6, 2010.
- [16] H. Heath and S. Cowley, "Developing a grounded theory approach: a comparison of Glaser and Strauss," *Int. J. Nurs. Stud.*, vol. 41, no. 2, pp. 141–151, 2004.
- [17] Z. R. Wolf, "Nursing practice breakdowns: good and bad nursing.," *Medsurg Nurs.*, vol. 21, no. 1, pp. 16–22, 36, 2012.
- [18] B. G. Glaser and A. L. Strauss, *The Discovery of Grounded Theory: strategies for qualitative research*, Transactio. London, 1967.
- [19] A. Cooney, "Rigour and grounded theory," *Nurse Res.*, vol. 18, no. 4, pp. 17–22, 2011.
- [20] B. G. Glaser, "Constructivist Grounded Theory?," *Forum Qual. Soc. Res.*, vol. 3, no. 3, p. 12, 2002.
- [21] A. Hunter, K. Murphy, A. Grealish, D. Casey, and J. Keady, "Navigating the grounded theory terrain. Part 1.," *Nurse Res.*, vol. 18, no. 4, pp. 6–10, 2011.
- [22] H. Ehrlich, "The Reputational Approach to the Study of Community Power," *Am. Sociol. Rev.*, vol. 26, no. 6, pp. 926–927, 1961.
- [23] D. Bouma, "The Issue-Analysis Approach to Community Power: A Case Study of Realtors in Kalamazoo," *Am. J. Econ. Sociol.*, vol. 29, no. 3, pp. 241–252, 1970.
- [24] B. Diccico-Bloom and B. F. Crabtree, "The qualitative research interview.," *Med. Educ.*, vol. 40, no. 4, pp. 314–321, 2006.