RESPONDING TO CLIMATE CHANGE AND THE ENERGY TRANSITION: THE EXPERIENCE AND CAPACITY OF COMMUNITIES IN IRELAND

Clare Marjorie Watson

A Thesis Presented for the Degree of

Doctor of Philosophy (PhD)

Department of Sociology

Head of Department:

Dr. Kieran Keohane

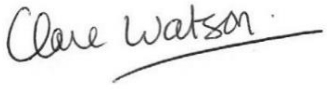
Supervised by:
Dr Gerard Mullally, Department of Sociology and Environmental Research Institute, MaREI Centre, University College Cork, Cork, Ireland
Professor Brian Ó Gallachóir, School of Engineering and Environmental Research Institute, MaREI Centre, University College Cork, Cork

University College Cork

October 2020

COPYRIGHT

This is to certify that the work I am submitting is my own and has not been submitted for another degree, either at University College Cork or elsewhere. All external references and sources are clearly acknowledged and identified within the contents. I have read and understood the regulations of University College Cork concerning plagiarism.

Signature: 

ACKNOWLEDGEMENTS

The research for this thesis was carried out as part of the EPA funded project 2014-CCRP-MS-21 and is published alongside the EPA Research Report (Watson et al., 2020), as part of the EPA Research Programme 2014–2020 (2014-CCRP-MS-21). The programme is financed by the Irish Government. It is administered on behalf of the Department of Communications, Climate Action and the Environment by the EPA, which has the statutory function of co-ordinating and promoting environmental research.

I would like to acknowledge and thank the members of the project steering committee - namely Dr. Jeanne Moore (NESC, National Economic and Social Council), Dr. Lisa Ryan (UCD Energy Institute), Prof. Geraint Ellis (Queens University, Belfast), Rebecca Minch (DCCAE, Dept. of Communications, Climate Action & Environment), John O'Neill (DCCAE), Frank McGovern (EPA, Environmental Protection Agency), Gemma O'Reilly (EPA), and Marc Kierans (EPA).

I have been very fortunate to have had such excellent supervisors in Dr. Ger Mullally and Prof. Brian Ó Gallachóir, both of whom have been extremely supportive, enabling, and flexible during the past four years. They knew when to provide clear guidance and incisive commentary, and when to let me use my own initiative and to experiment. At times when I struggled, they were there with encouraging words and good humour, and the odd time when I needed to be put straight they were able to do that too – 'Would you stop thinking like a campaigner' comes to mind! The joint supervision was clearly collaborative - at no stage did I feel torn between opposing paradigms or mindsets.

This research would not have been possible without the involvement of the community energy group representatives, and others in the sector who gave so generously of their time and expertise, and who inspired me with the level of their dedication and tenacity, soldiering on despite all the odds. They are truly pioneers in a brave new world. Special thanks to all who rallied the troops to participate in my workshops and who responded to e-mails and other questioning along the way. Thanks also to the people in the wider

environmental movement who helped me find my feet in the early stages. The list is too long to mention but is evident from a look at my Fieldwork illustrations in Chapter 5.

My appreciation goes to the many policy makers I met along the way who were equally helpful and open to my questioning. They too have a difficult and challenging part to play in this time of great change. In particular, thanks to Rebecca Minch, DCCAE, for inviting me to contribute to the drafting of the 2015 Energy White Paper and for participating in our first workshop, and to Declan Meally and Ruth Buggie, SEAI, for hosting our first workshop, for so generously contributing to my research, and for introducing me to other potential interviewees.

I came to this PhD from outside academia and might not have lasted the pace without the support and camaraderie of the members of the Energy Policy and Modelling Team, especially James Glynn, Fionn Rogan, Paul Deane, Evan Boyle and Connor McGookin. Many thanks also to Evan who so ably assisted me in the running of the five community energy workshops, and to Liz Creed for her efficient and timely proof-reading.

Many thanks to everyone in UCC and the Departments of Sociology and Energy Engineering for supporting me and stretching my brain over the past four years, and for all the very useful seminars, workshops and modules along the way – in particular, the Community Based Participatory Research module, from which I learnt such a lot. Thanks also to everyone in the Environmental Research Institute, and to my colleagues in the MaREI Centre - to Paul Bolger for his good cheer, interest and encouragement, to Aoife Deane for the support and laughs along the way, to Tara Reddington and Helen McMahon for being there, for fixing things, and keeping me sane when required.

Lastly, but most importantly, thanks to family and friends who have provided support and welcome diversions along the way, and in particular to my teenage son, Luke, who has had to put up with a distracted, and sometimes short-tempered mother, for far too long now – we will also both be relieved that the ‘who gets to use our low speed broadband’ evening wars should now recede!

ABSTRACT

Ireland's 2015 White Paper on Energy acknowledges that the energy transition will require citizen and community participation in renewable energy generation, distribution and energy efficiency. While the role and capacity of communities is seen as essential, it is poorly understood and inadequately researched in Ireland. This PhD addresses this gap by: examining the potential for community action on climate change and the energy transition; identifying existing social, institutional and infrastructural barriers to such collective action; and pinpointing the supports required to develop effective capacity, in particular, in community energy groups.

This interdisciplinary and transdisciplinary research draws from the methodological approach of grounded theory, and has been influenced by the principles of second order transformational, participatory, and engaged research. The research has adopted an adaptive and reflexive approach throughout. The research methods were qualitative and included extensive fieldwork within both the policy and the community energy arenas.

The thesis includes a literature review of the behavioural and social challenges of responding to climate change; the public response to renewable energy developments; community energy and the context of community energy in Ireland. It identifies four key concepts: energy transition; participation; social capital; and capacity, which underpin this research.

The author's multi-method approach included extensive fieldwork; 9 semi-structured exploratory interviews; two stakeholder engagement events with climate advocates; a day-long facilitated workshop with community energy practitioners and policy makers (2015); and five two-hour workshops with representatives of the six community energy groups in the study (2017/18).

The key findings of the thesis are as follows: There is considerable policy and community interest in community energy; significant barriers to community-owned

production of RE exist, including planning complexities, difficulties accessing the grid, lack of feed-in tariff, and financial risks; groups have difficulty engaging members of the public and local opposition can be a disabling factor; volunteers can only do so much; capacity supports are urgently required, including the removal of barriers to the community-owned production of RE, access to on-going core funding, assistance from skilled people, and the availability of a 'one-stop shop' where groups can go for help.

Recommendations arising from the research include the following: Strong, continual and visible national leadership on climate action is critical; a range of approaches to support and encourage community energy should be developed in response to the varying capacities of different communities; mentoring in community development and community engagement is essential; reliable, multi-annual sources of core funding should be made available; and existing barriers to community energy should be addressed.

LIST OF TABLES AND FIGURES

LIST OF ABBREVIATIONS

BEC – Better Energy Community

CCAC – Climate Change Advisory Council

CE – Community Energy

CRAGS – Carbon Reduction Action Groups

CRES – Community Renewable Energy Supply

DCCAE – Department of Communications, Climate Action and Environment

DECLG – Department of Environment, Communications and Local Government

DCENR – Department of Communications, Energy and Natural Resources

DCMNR – Department of Communications, Marine and Natural Resources

DECC (UK) – Department of Energy and Climate Change

DSM – Demand Side Management

EPA – Environment Protection Agency

FoE – Friends of the Earth

HVPL's – High Voltage Power Lines

IPCC – Intergovernmental Panel on Climate Change

MaP – Multi-actor Perspective

MlP – Multi-level Perspective

NESC – National Economic and Social Council

NESF – National Economic and Social Forum

NGO – Non-Governmental Agency

OECD – Organisation for Economic Co-operation and Development

RE – Renewable Energy

REP – Renewable Energy Partnership

RESS – Renewable Electricity Support Scheme

SEC – Sustainable Energy Community

SEAI – Sustainable Energy Authority of Ireland

SICAP – Social Inclusion Community Action Programme

TT – Transition Towns

UNECE – United Nations Economic Commission for Europe

UNEP – United Nations Environment Programme

Table of Contents

INTRODUCTION

Climate action, and in particular the key role of communities, has recently been highlighted as a national policy priority by the Irish Taoiseach (Taoiseach Leo Varadkar, 2018, p. 89).

The transition to a low carbon world will require profound changes in how we live our lives. And that will only be possible with the support of communities and individuals. It requires significant behavioural change and some tough decisions or trade-offs by government, by business, by communities and by individuals. It requires citizen and community engagement - from planning for renewable energy projects through to individual purchasing decisions…And this is what today is all about. It is about building on the National Mitigation Plan, on the National Dialogue on Climate Change which is meeting this weekend in Athlone, and on the Citizens' Assembly – to talk about how we can better empower communities to participate in climate action efforts.

In 1958, Charles Keeling began measuring the level of CO_2 in the atmosphere at the Mauna Loa Observatory in Hawaii (Keeling, 1986). The first World Climate Conference, sponsored by the World Meteorological Organisation, was held in Geneva in February 1979 (WMO, 1979). In 1988, the Intergovernmental Panel on Climate Change (IPCC) was established under the auspices of the United Nations, bringing together thousands of scientists from around the world to review and assess 'the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change*'* (IPPC, 2018). In 2006, former US vice president, Al Gore launched his climate change documentary 'An Inconvenient Truth', in an effort to increase public awareness and action on climate change, and it was a box office success around the world (Guggenheim, 2013). Soon after, the economist, Nicholas Stern, produced a report for the British Government, 'The Economics of Climate Change' (Stern, 2007), which made a convincing argument as to why, if for no other reason than to save money, it would be prudent to act sooner, rather than too late.

Following on from a 2005 Friends of the Earth (FOE) 'Big Ask' campaign, and with clear political leadership and an all-party consensus, the UK Climate Change Act came into force at

the end of 2008. It included a series of legally binding five-year 'carbon budgets', leading to the longer-term goal of reducing greenhouse gas emissions by 80% below 1990 levels by 2050. A FOE 'Big Ask' campaign was launched in Ireland in 2007. However, against a background of an economic crash, and European Union and International Monetary Fund bailouts, campaigners and the Irish Green Party, who were then junior partners in government, struggled and failed to introduce a similar bill. It took a further eight years before the 2015 Climate Action and Low Carbon Development Act was launched, and the Irish Climate Change Advisory Council established (Torney, 2017).

The increasing evidence of climate change (IPCC, 2013) is now acting as a significant driver for an urgent shift towards energy efficiency and low carbon energy supplies. In 2014, Ottmar Edenhofer, IPCC Working Group 111, stated that 'there is a clear message from science: To avoid dangerous interference with the climate system, we need to move away from business as usual' (Edenhofer, 2014). The year before at the Davos World Economic Forum, Christine Lagarde, Head of the International Monetary Fund, had put it more succinctly - 'Unless we take action on climate change, future generations will be roasted, toasted, fried and grilled' (Lagarde, 2013). The politically agreed level of ambition, as articulated in the 2015 Paris Climate Agreement (UN 2015), increased substantially, with the goals of limiting warming to 'well below 2°C' above pre-industrial levels, and of trying to limit the rise in temperature to 1.5°C. In October 2018, the Intergovernmental Panel on Climate Change (IPCC) reported that we have to act *now* to stabilise temperatures below 1.5°C (IPCC, 2018).

As the range of climate mitigation policies and clean technology solutions increases, as EU target deadlines loom closer, and the implications of the 2015 UNFCCC Paris Agreement hit home, the pressure is on for Ireland to cut its greenhouse emissions. However, while intentions, as exemplified in particular by the contents of the 2015 Energy White Paper (DCENR, 2015b), are good the pace of change has been painfully slow. Recent projections (EPA, 2018) indicate that 'at best, Ireland will only achieve a 1% reduction by 2020 compared to a target of 20%' and is 'not on the right trajectory towards decarbonisation in the longer term.' The Irish Climate Change Advisory Council (CCAC, 2016, p. i) voiced its concern that not meeting these targets 'will represent a significant deviation from the necessary path to decarbonising the economy by

2050. There is an urgent need to enhance implementation of existing policies and measures and to identify additional policies and measures to return the economy to a path towards sustainability'. The European Commission in its recent country report on Ireland stated that we are falling further behind in decarbonising our economy and engaging on a path of sustainable development, and that there are no signs yet of a reversal in trend, which could become costly (European Commission, 2019).

Many question why it has taken us so long to respond to such a pressing global issue. Part of the reason is because climate change is a 'wicked problem' (Rittel and Webber, 1973). 'It is incomplete, contradictory, complex and constantly changing. There is no one point at which one has enough information to make decisions' (Marshall, 2015, p. 95). There is no silver bullet for climate change and no one policy response will work on its own. 'Complex solutions' are required for a 'complex world' (Verweij and Thompson, 2006). This is also the case with sociotechnical transitions (Geels, 2002), defined as major transformations in the way society functions relating to areas such as energy, communication, transportation, housing, and food. No transition is planned and coordinated 'from the outset' (Geels and Schot, 2007, p. 402). Transitions are likely to be non-linear – 'two steps forward may be followed by one step back (or steps in a different direction if actors change their beliefs and goals or if there is growing contestation of particular pathways)' (Geels et al., 2016, p. 900).

Energy transitions are particularly complex. They involve different actors, with different interests, and different goals. Agreeing short term goals may be hampered by the contested prioritization of values around, for instance, energy security, sustainability, freedom of movement, and the exercise of democratic rights. Energy transitions are also complex because of all the uncertainties, and the sociotechnical changes. 'We do not know how the future system will behave, since we cannot be entirely sure what system we will build for the future' (Valkenburg and Cotella, 2016b, p. 3). And there's the fact that for most people energy is 'seemingly pure, invisible, clean and cheap'. They do not understand what it takes to ensure that lights come on at the flick of a switch (Sovacool, 2009, p. 367). When dealing with transitions in everyday life, the real challenge is that consumers, users and practitioners are involved in creating and re-creating the systems and practices themselves, and so are as vital to the change,

as are the producers and promoters. It is not a case of 'them' and 'us', with one group of people governing the actions of the other (Shove and Walker, 2010, p. 475).

Therefore, experimentation will be necessary (Valkenburg and Cotella, 2016b, Jackson, 2005, NESC, 2012). There is a need to adopt more 'stretch and transform' (Smith and Raven, 2012, p. 1030) approaches, whereby institutional, infrastructural, and social systems are adjusted to allow for new innovations, rather than the 'fit-and-conform' strategies which are currently more prevalent (Raven et al., 2016, p. 7).

Much of the policy focus on climate action to date has derived from a conviction that humans act rationally and that, once they know the facts, they will act out of self-interest. This has led to costly multi-media information campaigns, and educational approaches, which have ultimately failed to foster the required level of behavioural change. It is proposed here that the focus now needs to shift away from the individual and to look at the existing social, institutional and infrastructural barriers, and to examine the role of social practice and collective action.

A significant policy change occurred in November 2015 with the publication of the Irish White Paper on Energy (2015), which states that the energy transition 'will see the energy system change from one that is almost exclusively Government and utility led, to one where citizens and communities will increasingly be participants in renewable energy generation, distribution and energy efficiency' (DCENR, 2015a, p. 9). The role of communities is seen as being essential and yet is poorly understood and researched in Ireland.

This thesis has set out to address this gap and to:

- examine the potential for community action on climate change and the energy transition
- identify existing social, institutional and infrastructural barriers to such collective action, and
- pinpoint the supports required to develop effective community capacity, in particular, around community energy.

Following on from the lead provided by the 2015 Energy White Paper, and from the compelling testimonies I heard in the first year of my research from existing and aspiring community energy co-operatives and groups, I have focused on the role played by community energy organisations.

In order to ensure that I gained a broad understanding of the issues both underpinning and surrounding the focus of the research, I used the following four questions as an overarching guide:

1. What are the challenges affecting people's response to climate change and the energy transition?
2. What are the theories and principles which help to explain effective citizen and community engagement?
3. What is the Irish experience of community energy?
4. How do we support the development of community capacity to engage in the energy transition?

As far as was possible, I incorporated the principles of transdisciplinary, second order transformational, engaged, and adaptive research, to ensure that I immersed myself in the subject matter and gained an understanding of the issues pertaining to climate action and community energy, and that I learned from the experiences of community energy practitioners. Likewise, it was important that I became familiar with the policy context and stayed abreast of, and contributed to, the various policy changes over the time period of my research. It was crucial to me that the research for this thesis would be active, involved, and of use to both policy makers and practitioners, and that it could provide a springboard for future research.

From the beginning, I was keen to attend as many relevant events, and to meet and converse with as many key people, as possible so my fieldwork has been extensive. I also read widely to fully explore the relevant research literature – at times, I felt I was putting together pieces of a 'jigsaw' which, when complete, gave me a full contextual picture within which to carry out my qualitative research.

Chapter 1 provides the overall framework of the problem - most people are not making the required changes to curb their own greenhouse emissions and many are resisting renewable

energy developments in their area. The first section of this chapter looks at why this is, and includes an outline of the challenges of trying to live a low carbon life, and an exploration of the behavioural influences (including a misplaced focus on the 'rational actor') and social influences (including social practice) which affect climate action. The second section of the chapter explores the public response to renewable energy developments, outlines the 'social gap' between stated support for renewable energy and people's actual response to a local development proposal, and identifies key factors affecting this response.

Chapter 2 explains 'grassroots' initiatives, and gives an overview of community energy, and its benefits and challenges. It provides a contextual and policy background to community energy in Ireland, initially highlighting relevant Irish policy developments from 1999 until 2015 and then explaining the roles played by the Sustainable Energy Authority of Ireland (SEAI), the Citizen's Assembly and the Transition Towns movement. At the end of the chapter, Table 1 gives details of community energy initiatives established between 1986 and 2010 – out of the 14 listed projects only 3 appear to be still operational.

Chapter 3 focuses on four key concepts underpinning this thesis: energy transition; participation; social capital; and capacity. It is argued that the energy transition requires a move towards energy democracy and energy citizenship, within which community energy can play an important role. For this to happen, citizen and community participation is key. Social capital can hold communities together and enable collective action, but negative social capital can be a hindrance. The findings from my research, and exemplified in the data, indicate that the focus now needs to be shifted from social capital onto the level of capacity the energy communities possess, which will determine whether they are able to thrive and to benefit from 'good', and to withstand 'bad', social capital. A framework for community response capacity is outlined in Table 2.

Chapter 4 describes the methodology underpinning this research, which was eclectic in nature and incorporated aspects of grounded theory, second order transformational research, participatory and engaged research, adaptive research, and reflexivity. The chapter includes my self-reflexive analysis **and a section on research ethics**. My multi-method approach is

explained, which involved: extensive fieldwork and desk research; 9 semi-structured exploratory interviews; two stakeholder engagement events with climate advocates; a day-long facilitated workshop with community energy practitioners and policy makers (2015); and five two-hour workshops with representatives of six of the community energy groups in the study (2017/18). This chapter also gives details of my sampling strategy and data analysis.

Chapter 5 displays the extent of the fieldwork I undertook as part of my research, through a series of graphic illustrations. The final two figures outline the questions, observations and themes which arose during this period. These influenced my overall focus, sampling strategy and the questions I asked in the subsequent community energy workshops.

Chapter 6 provides the findings from the 'Community Engagement on Energy' workshop which I held in August 2015 with community energy practitioners, policy makers and our research team, and the findings of the five workshops held in late 2017 and early 2018 with representatives of community energy groups.

The Conclusion summarises the contents of this thesis and provides a synthesis of the key findings and recommendations. It demonstrates the impact of my work and its unique contribution to the field of research.

1 BEYOND BEHAVIOUR – THE CHALLENGE OF RESPONDING TO CLIMATE CHANGE

There is a fundamental problem in relation to climate change and climate action – most people are not making the required changes to curb their own greenhouse emissions and many are resisting renewable energy developments in their area. The first section of this chapter looks at why this is, and includes an outline of the challenges of trying to live a low carbon life, and an exploration of the behavioural influences (including a misplaced focus on the 'rational actor') and social influences (including social practice) which affect climate action. The second section of the chapter delves into the public response to renewable energy developments, outlines the 'social gap' between stated support for renewable energy and people's actual response to a local development proposal, and explores the key factors affecting this response.

1.1 BEHAVIOURAL AND SOCIAL INFLUENCES AFFECTING CLIMATE ACTION

1.1.1 THE CHALLENGES OF TRYING TO LIVE A LOW CARBON LIFE

People are struggling to cut their carbon footprints and to make the changes that are expected of them. It does not necessarily follow that a person who is concerned about climate change or the environment will have a low carbon footprint, or that income or education will have a bearing on whether households are pro-environmentally active.

The Irish CONSENSUS Lifestyle Survey (Davies et al., 2014) found that 86% of nearly 1,300 respondents said they were concerned about environmental issues, 82% felt that their own behaviour could make a difference, and 58% admitted that they needed to behave in a more environmentally friendly manner. However, 62% of respondents said they would not support higher environmental taxes, and 48.9% would not pay higher prices for green goods and services. Although 73% of respondents stated they would be willing to insulate their homes for environmental reasons, only 23% had actually done so in the preceding five years. Likewise,

79% of respondents said they knew about government energy efficiency grants, yet only 5% had availed of the grants and 91% reported that they intended to buy energy efficient appliances, but only 46% had done so in the previous five years. In a nationwide Canadian survey (Kennedy et al., 2009), involving 1664 participants, 72% self-reported a gap between their environmental intentions and subsequent actions (Abbey, 1975).

Drawing from a baseline survey of 1,500 households in Wollongong, near Sydney, Chris Gibson and colleagues (Gibson et al., 2011) found that households already involved in pro-environmental behaviours, such as recycling and composting, were more likely to be interested in climate change and to be prepared to change household behaviours. However, while some practices had become routine for most households, such as recycling, using 'green bags', turning off taps and lights, and wearing more clothing rather than turning up the heat, even the majority of the most committed households did not say they regularly walked to the shops, grew their own produce, or bought organic food, fair-trade products, or recycled toilet paper.

The experience of the members of Carbon Rationing Action Groups (CRAGS), who came together to reduce their carbon emissions by working towards agreed carbon targets, demonstrates how even the most committed and motivated people find that they soon reach a limit below which it is too difficult to venture. The CRAGS movement began in the UK in 2006 and lasted until 2010. At its height, 25 groups were operating across the country. Research (Hielscher, 2013) on the Glasgow CRAG group demonstrated that, at the early stages, the members were full of enthusiasm, comparing details about their homes and lifestyles and pin-pointing ways in which they could each cut their emissions. However, after making the obvious changes, it became more difficult to cut back any further. Holiday options had dwindled and they lived in colder homes. On reflection, members felt that life had become quite *grim* and they wondered if they were distancing themselves too far from the mainstream.

In terms of what people can do to cut their greenhouse emissions, rational economic analysis sees house retrofitting as the obvious 'low hanging fruit'. On the surface, it appears to be a win-win situation – the government offers grants or Green Deals to speed up the process, and gets energy savings in return. The householder makes an initial investment which is repaid over time by

reduced energy bills, and comfort levels increase in the home. However, the rate of take-up so far indicates that the situation is more complex than it looks. Despite the fact that making homes more energy efficient saves money in the long run, there is still an 'energy efficiency gap' (Jaffe and Stavins, 1994), with most householders discounting the future benefits. By 2016, 300,000 homes, and 3,500 businesses and public sector agencies, had been retrofitted in Ireland (Scheer, 2016). However, about 75,000 homes and businesses will need to be upgraded annually until 2020 to meet the overall energy efficiency target of 20%. As a point of reference, energy efficiency grants were given out to 25,000 Irish homes and businesses in 2014. Barring a radical shift in policy, it is estimated that between 70 and 80% of today's energy inefficient buildings in Ireland will still be operational in 2050 (Pelenur and Cruickshank, 2012).

'The rate of change that people are willing to tolerate is remarkably slow' (Mallaband et al., 2013, p. 15). Money is not the only motivating factor, or that lack of cash is the only disincentive. 'In some ways finance is the last barrier people face with regard to energy efficiency (Hession, 2013, p. 52). Other obstacles include resistance to modernization, lack of time, the perceived enormity of the task, lack of trust in builders, the history and character of the house, lack of consensus within the family on what to do, the fear of possible disruption, and inertia (Mallaband et al., 2013). There can be a rebound effect with overall temperatures rising, showing that the occupants opted for warmer rooms rather than cost or energy savings and that other needs (e.g. internal and external doors left open to allow the family dog free passage in and out) supercede that of energy efficiency (Tweed, 2013).

In today's world, energy is clean, cheap and hidden in wires, walls and tanks. People do not fully understand what it takes to ensure it is available on demand or the impact this has in a wider context (Sovacool, 2009, p. 367). Demand side management (DSM) is seen as being a way of making the invisible visible and involves a variety of technologies aimed at assisting consumers to be more engaged and efficient energy users. The development of a smart grid and the roll-out of smart meters, and accompanying in-home displays, or energy monitors that provide real-time feedback to householders on energy use, costs across time scales and greenhouse gas emissions, are seen as being integral parts of the energy transition. Rational thinking presumes that this will encourage people to change their practices, to save energy, to save money and to ultimately cut

their emissions. However, research shows that the ‘smart technology’ strategy is having mixed results – trials and reviews indicate that energy savings can be as low as zero per cent in some households or as high as 20% in others, and several studies indicate that reductions may not last over time (Strengers, 2011). Feedback only works if the participants are already strongly motivated to save energy. Those who are motivated interact frequently with the display, while those who are not are likely to ignore it (Oltra et al., 2013). Beyond the small, sometimes vague, and well promoted ‘easy’ actions, like avoiding waste, turning off taps and light switches, installing energy efficient appliances, and not leaving gadgets on standby, the in-house display feedback does not impact on current lifestyle expectations (Strengers, 2011).

Over time, smart energy monitors gradually become ‘backgrounded’ in the routine lives of householders (Hargreaves et al., 2013b). The data from the monitors can be the cause of contentious and difficult household disputes. Older children are particularly reluctant to engage. Certain appliances, regardless of their energy use, are seen as being essential and cannot be done without (Hargreaves et al., 2010). Other householder concerns include loss of control, concerns over privacy and data security, and trust (Balta-Ozkan et al., 2013). Those most concerned about energy prices, and those in fuel poverty, are less likely to accept demand side management tools into their homes, and they show a reluctance to share their energy data (Spence et al., 2015). When community leaders who were involved in helping other people in their communities to engage with energy conservation were offered energy monitoring kits and smart plugs for use in the community centre or to take home, they had little interest in using them. As they were unable to use the monitors, or to make sense of the feedback themselves, the leaders did not feel it was appropriate to distribute them to others in the community (Piccolo and Alani, 2016). There can be resistance to the information provided as householders become defensive, feeling that there is only so much they should be expected to do, in the absence of market, policy and institutional support (Hargreaves et al., 2013b).

It is proving very difficult to get people out of their cars and it doesn’t help that people are being given mixed messages about driving. As one wing of government exhorts people to drive less and to use public transport, another funds new motorways, cuts funding for public transport, and looks to car sales to determine the buoyancy of the economy. While advances in engineering

have improved the efficiency of car engines, at the same time, the size of vehicles has increased substantially, partly due to the shift to ‘crossovers’ and SUVs, and also the need for more boot space (York, 2006). Besides, driving is not just about from getting from A to B. The car is ‘the most psychologically expressive object that has so far been devised’ (Marsh and Collett, 1986, p. 26). Cars are about image and status, they are cool, and they also offer freedom. For the young at heart the car conjures up images of speed, excitement and vitality, and for many women it means safety. The advertising industry exploits these emotional connections to the full. Many drivers enjoy the feel of driving, and the bodily comfort it gives them. Car mobility allows for convenience, comfort, and door-to-door accessibility, when and where required. Driving a car is seen as a ‘right’. In contrast, public transport is perceived as being dangerous, dirty and unreliable. Driving offers a safe and private space away from outside stress and danger and car ownership denotes caring for family, independence and status (Waitt and Harada, 2012). Driving has been described as a sign of `good mothering' (Dowling, 2000, p. 352).

Flying is also known to be an unsustainable practice and an important contributor to greenhouse emissions. While the airline industry may be working to reduce its impact through efficiencies and fuel blends, these may prove to be useless in the face of ever increasing passenger and flight numbers. For anyone who is concerned about their personal contribution to climate change, cutting back on air travel would appear, on face value, to be an obvious choice. However, many otherwise climate friendly consumers continue to fly. They are faced with the ‘flyers’ dilemma’ (Higham et al., 2014) – flying is good for tourism and jobs (both at home and abroad), for personal development (experiencing and learning from different cultures), for stress reduction (holidays), and it facilitates ethical tourism and contributes to the well-being of local hard-hit communities. Yet flying contributes to climate change, which will impact negatively on people’s lives. Governments, while trying to take a ‘balanced’ approach, are again giving mixed messages. They acknowledge the importance of air travel and the air industry to the national economy, so, on the one hand, there are plans to grow the industry, to develop new airports and add new runways, while, on the other, people are being asked to avoid unnecessary flying. The decision has been handed down to the consumer (McDonald et al., 2015).

Most tourists do not think about climate change when organizing their holidays. Access to regular holidays is a right for all (Higham et al., 2014). They feel that there are no viable alternative travel options and if they don't fly somebody else will. Some young people feel that climate change is encouraging them to fly more, while flights are cheap, as they believe that flying will become more restricted in the future (Hares et al., 2010). Even the most committed eco-consumers are still 'locked-in' to flying, which reflects the fact that it is still more 'normal' to fly than to avoid flying on environmental grounds. To repair the cognitive dissonance experienced, they justify why they cannot change their behaviour - they must fly because of the cost, length of journey (the most common reason), family and work commitments, comfort and convenience (McDonald et al., 2015).

1.1.2 MOVING BEYOND THE RATIONAL ACTOR

To date, much of the policy focus in relation to climate change mitigation has presumed that individuals make rational decisions based on the information before them. They weigh up the costs and benefits and then make the choice that appears to be in their own best interest (Jackson, 2005). Often the assumption has been that people are 'economically rational' and that an appropriate price signal will stimulate the necessary response. However, this assumption has been shown to be unrealistic, and perhaps explains the limited effectiveness of some climate action policies in the past (van Bavel R. et al., 2013).

Many point to the inadequacy of the rational choice model (Lorenzoni et al., 2007), which can be exemplified by the *energy efficiency gap* (Jaffe and Stavins, 1994), whereby people are not investing in home upgrades even though, if they do, they will save money in the long run. The ineffectiveness of this deficit model is also demonstrated by the *attitude-behaviour gap* (Fishbein and Ajzen, 1975, Ajzen and Fishbein, 1980, Juvan and Dolnicar, 2014, Papaoikonomou et al., 2011), the *intention-behaviour gap* (Sheeran, 2002), and the *value-action gap* (Blake, 1999), whereby some people seem to act in opposition to the attitudes, intentions and values they hold. It is now more widely accepted that what many people think they will do, say they will do, and then actually do, may differ substantially. In many ways, humans appear to be 'predictably irrational' (Ariely, 2008).

Rational choice thinking, often referred to as 'common sense logic' (Verplanken, 2012), leads policy makers and campaigners to seek to inform and educate. It is assumed that people are 'empty vessels' ready to be filled with facts and figures, and then launched into rational action (Whitmarsh and O'Neill, 2012). Many campaigners and change agents believe that, once people have access to the scientific evidence, they will react appropriately to the climate threat. But, when it comes to engendering sustainable behaviour, the 'information in, action out' approach simply does not work (Lockwood, 2007, Moser and Dilling, 2007, McKenzie-Mohr, 2000). While the provision of basic information is important to promote knowledge and understanding of climate change and its implications (Lorenzoni et al., 2007), there is little evidence that information campaigns lead to long-term or sustainable behaviour change, and facts on their own will not change established habits (Verplanken, 2012). Individual consumers are neither taking in information or advice, nor do they behave accordingly (Bartiaux, 2008). More information is not always better (Jackson, 2005) and too much evidence may lead to a greater sense of powerlessness (Kaplan, 2000). In line with the theory of learned helplessness (Seligman, 1972), Kaplan suggests that those who appear to be apathetic, or disinterested in environmental issues, may, in fact, be overwhelmed by the enormity of the situation and so respond by distancing themselves to avoid the pain. The more information a person has about the issue, the less responsible they may feel for it (Kellstedt et al., 2008). There is a danger that, when the facts are put on the table, a contrary reaction is provoked and an argument ensues. Therefore, it is proposed that campaigners should spend less time trying to convince people that climate change is real and instead treat the argument as having been won and the facts as so taken for granted that they need not be disputed (Retallack, 2006).

Government mass media information campaigns, largely focusing on the individual actions people can take, have not proven successful in changing behaviours. The British government's campaign, 'Helping the Earth Begins at Home', ran for over five years in the 1990s. It began in the broad sheet newspapers and on national radio, and a year later moved to the tabloid newspapers and television. Yet, despite this level of exposure, the initiative proved to be largely ineffective (Hinchliffe, 1996). Between 2006 and 2009, the Irish Department of Communications, Energy and Natural Resources ran its own multi-media and outreach campaign called Power of One to encourage energy efficient behaviour. While the campaign raised

awareness of efficiency behaviours, it had no significant effect on self-reported natural gas-saving behaviour (Diffney et al., 2013). It has been concluded that Power of One was only capturing those who were already converted (Marshall, 2015).

Closely aligned with the rational thinking and information deficit models, is the belief that negative messages will spur people into action. Therefore, when it comes to climate change, messages of doom, gloom and apocalypse have been popular with both campaigners and the media alike (Hulme, 2007, Boykoff, 2011). It is presumed that the fear factor will catch people's attention over the din of everyday life (O'Neill and Nicholson-Cole, 2009). However, it is now widely accepted that negative messaging does not always work. After all, Martin Luther King didn't stir people into action by proclaiming 'I have a nightmare' (Shellenberger and Nordhaus, 2005). Proponents of negative messaging argue that fear is a natural emotion evoked by a perceived threat. Evolutionary responses of fight, flight or freeze act to control either the external danger or the internal experience of fear (Gardner, 2009). However, threat information causes constructive responses and persistent attitude change only when people feel personally vulnerable to the risk, when they know what to do about it, when the cost is acceptable, and they feel that their response will be effective in solving the problem. If a person's reaction is emotional and only aims to control the fear or pain without reducing the danger, it is deemed maladaptive. Avoidant behaviours include denying the threat or its impact, blaming others, rationalising that silver-bullet solutions will be found, refusing to do anything different, and succumbing to apathy (Moser and Dilling, 2007). Disaster messaging can lead to an approach called 'settlerdom', whereby the alarmist discourse is ridiculed and rejected, the notion of climate change is deemed so preposterous it cannot be real, and a 'common sense' attitude is invoked to counteract those doomsayers (Ereaut and Segnit, 2006). Some call it 'climate porn', in that the apocalyptic language offers a terrifying, and perhaps secretly thrilling, spectacle, but ultimately makes the issue appear unreal and distances the public from the problem (Retallack, 2006). When the 'we're all going to die' approach is coupled with '10 things you can do to save the planet', people can be forgiven for thinking 'why bother?'

1.1.3 BEHAVIOURAL INFLUENCES AFFECTING CLIMATE ACTION

There are many behavioural influences which affect our ability to act on climate change, including our perception of risk, our capacity for denial, our aversion to loss, the power of habits and our need for self-efficacy.

Evolutionary theory suggests that selection favoured beings that valued immediacy over those who were prepared to wait, so nowadays people tend to discount the future (Miller, 2009). It is easier to respond to events that occur close to the present rather than to those which are likely to occur over the horizon. Therefore, conserving resources for time to come is difficult (Hardin, 1968, Dietz et al., 2003), and defining how much should be spent now, or later, to combat climate change or to de-carbonise our energy system is a challenge (Weisbach and Sunstein, 2009, Scruton, 2014). Dramatic and easily imagined events are taken more seriously than less vivid ones, even if they arise with far lower frequency. Similarly, recent events have a greater impact on behaviour than earlier ones (Tversky and Kahneman, 1973). People are generally averse to uncertainty about the future and are reluctant to take action if the information is vague. Uncertainty can mean that people may not want to take the risk that their action could prove to be ineffective, or mistaken, so they decide to wait and see what happens. Irreducible uncertainty can be stressful (de Berker et al., 2016) so is best avoided. A lack of clarity about negative futures can allow people to maintain a relatively optimistic stance about current behaviour and may provide a convenient justification for self-interested actions (Morton et al., 2011). Even if people have direct experience of climate impacts, such as flooding, they are 'no more knowledgeable, concerned or active in relation to climate change than people without flooding experience' (Whitmarsh, 2008, p. 368). They want to know that the problem has a practical solution and can be overcome. Accepting that the cause is climate change is accepting that the problem is likely to occur again and that the solution is complex. Furthermore, those affected may not want flood defenses to change the form and function of their local area (Clarke et al., 2018).

People are not homogeneous and they do not respond to problems in the same way. They have their own mindsets and hold diverse ideological and world views. Issues are not seen only on

their merits, but can get filtered through each person's belief system (Lockwood, 2007, Verweij and Thompson, 2006).

When a person is faced with an issue like climate change that is too challenging to accept or acknowledge, denial can set in, despite what may be incontrovertible evidence. The fact, or knowledge of it can be denied, the fact can be assigned a different meaning, or the consequences that follow are denied (Cohen, 2001). Denial can be individual, personal, and private, or mutual, collective and organised. Whole societies can slip into collective modes of denial and effectively ignore an issue (Cohen, 2001, Norgaard, 2011). But denial is not always a negative or damaging reaction. At times, it can be an effective way for the mind to adjust to a new reality or to cope with bad news (Kubler-Ross, 1969). People may be unconsciously denying the reality of climate change because its implications are too painful to think about (Lertzman, 2008). As the issue becomes more politicised, 'climate fatigue' can also set in (Capstick et al., 2015). Or people may simply stop paying attention because they grasp that the problem has no quick solution (Krosnick et al., 2006).

The principle of the bystander effect (Darley and Latane, 1968) can help to explain why many remain inactive, and it underlines the importance of visible local action and government leadership. When people are together, responsibility for acting is diffused. If no-one else responds, they convince themselves that the apparent problem isn't actually a problem.

Climate action and the move towards energy efficiency is often perceived as being about cutting back or doing without. Yet, most people dislike sacrifice and hate losses. Losses can have more than twice the psychological impact as equivalent gains (Ariely, 2008). Prospect theory (Kahneman and Tversky, 1979, Tversky and Kahneman, 1985) shows how loss aversion can lead to risk aversion. People do not want to lose the gains they have already made so, when presented with basically identical situations, they tend to succumb to the status quo bias and choose the decision which is least likely to cause a change (Samuelson and Zeckhauser, 1988, Kahneman et al., 1991). People are also influenced by sunk costs (Arkes and Blumer, 1985) whereby the more time, effort and resources they invest in something the less likely they are to give it up, even if it becomes clear that the prognosis is not good.

Habits drive consumer choices relating to travel, shopping, domestic routines, waste disposal and leisure (Jackson, 2005). They influence social processes and become shared between individuals and within groups and communities. Approximately 45% of our everyday behaviours are habitually repeated in the same location (Neal et al., 2006). Temporal, social, spatial and contextual cues can have more influence on people's behaviour than their attitudes or intentions, particularly if the habit is well established. Changing minds does not necessarily change habits (Maio et al., 2007, Verplanken, 2012). Habits are hard to break, and counter-intentional habits are even more resilient (Jackson, 2005). Temporary gains can be easily lost through relapse.

The theory of self-efficacy (Bandura, 1977) proposes that behaviour will depend on whether people feel they can do the action, or not, in the face of barriers and obstacles. Similarly, the theory of planned behaviour (Ajzen, 1991) maintains that the perception a person has of whether they can carry out the behaviour will influence both their intention and subsequent action. The low cost hypothesis (Diekmann and Preisendörfer, 2003) predicts that the impact that an environmentally concerned attitude has on a person's behaviour will diminish as the behavioural costs of the required change increase. If people are concerned about an issue, but doubt the efficacy of their actions, they can become frustrated and disengaged (Höppner et al., 2008).

1.1.4 SOCIAL INFLUENCES AFFECTING CLIMATE ACTION

1.1.4.1 SOCIAL LEARNING AND SOCIAL NORMS

Humans are fundamentally motivated to create and maintain meaningful social relationships with each other. They have an inherent need to 'belong', to fit in with their community and wider society, to be admired and respected, and consequently to think well of themselves. In terms of behaviour, social learning theory (Bandura, 1971) maintains that learning often arises from the observation and modelling of the actions of others, and also by observing the impact that the behaviour has on those who enact it.

Behaviour is also determined by social norms set down by society that dictate which actions are permissible and socially acceptable. The focus theory of normative conduct (Cialdini et al., 1990,

Cialdini, 2007) argues that social norms refer to what people think others are doing (descriptive), and to the perception of what others believe to be acceptable (injunctive). Implicit in the concept of descriptive or injunctive norms is the idea that, if we engage in behaviours of which others approve, they will then approve of us too (Cialdini and Goldstein, 2004). Social norms often have a bearing on the public good. When people perceive that others are co-operating, they are moved by honour, altruism and a desire to contribute, so they reciprocate. The 'logic of reciprocity' requires trust (Kahan, 2003). Everyone is better off if each person bears some of the cost of ensuring that such a 'good' prevails. The Tragedy of the Commons (Hardin, 1968) demonstrates how difficult this can be, and how easy it is to become a 'free-rider'. The norm of conditional cooperation only works if everyone co-operates. If enough people defect then this can be seen as a legitimate reason for others to do likewise (Fehr and Fischbacher, 2004, Raihani and Hart, 2010). Norms of fairness are important in any society as demonstrated by the Ultimatum Game (Thaler, 1988), whereby subjects generally offer the most equitable deal to their opponents. People judge fairness in a relative way, usually in comparison with peers or social equals. Their willingness to help the poor can be reduced if they think they would be doing more than their fair share (Singer, 2009). People will not act if they believe that others are free-riding and benefitting from doing nothing (Giddens, 2009).

1.1.4.2 SOCIAL PRACTICE

Historical Overview

The concept of social practice emerged towards the end of the twentieth century from within Europe and is now circulating more widely amongst scholars from different disciplines, including social science, sociology, philosophy, economics and geography. It is thought that the theories that emerged were a response to a number of fundamental problems of social theory at the point of the passing of economism and Marxism in the 1970s (Warde, 2014, p. 284). A diverse range of theoretical positions were posited by, among others, Pierre Bourdieu (1972-1997), Anthony Giddens (1979, 1984) and Michel Foucault (1960s-70s). The turn to practices from these diverse authors seems to be tied to an interest in the 'everyday' and 'life-world'. The authors in question are influenced by the interpretative or cultural turn in social theory (Reckwitz, 2002, p. 244). However, there is 'no one theory of practice and no such thing as a

practice approach' (Shove and Spurling, 2013, p. 3). Although notions of practice figured in different strands of social science through the 1980s and 1990s, they gained fresh theoretical impetus towards the close of the twentieth century, primarily through the work of philosopher Theodore Schatzki, cultural sociologist, Andreas Reckwitz and sociologist, Elizabeth Shove.

Theories of Social Practice

Social practice theorists believe that dominant behaviour change approaches which focus on the individual and individual choice tinker on the edge of the problem (Hitchings, 2013). They dispute the traditional and widely held beliefs that people act out of self-interest, that behaviour is determined by a person's beliefs and values, that new social arrangements arise out of millions of individual decisions about how best to act, and that lifestyles are expressions of personal choice (Shove et al., 2012). Focusing on individual behaviour deflects attention away from institutions and the part they play in defining which actions are easier, and more likely, than others. It also ignores the influence of social obligations, norms, conventions and routines. In contrast to conventional, individualistic and rationalist approaches to behaviour change, social practice theory de-centres individuals from analyses and turns attention instead towards the social and collective organization of practices (Hargreaves et al., 2011).

While individual behaviour can sometimes spread into new social trends, more often than not this 'creeping evolution' of social and technological norms is initiated elsewhere, at a higher, deeper level (Jackson, 2005). Individuals then find themselves 'locked-in' to these behavioural trends, without ever making a conscious decision to engage in them in the first place. The theory of social practice encapsulates this sense of 'lock-in'. Behaviours which are determined by social practices are said to rest in our practical consciousness, which is essentially the taken-for-granted knowledge about routine which enables us to get on with everyday life. The challenge is to bring the actions into people's discursive consciousness (Giddens, 1984, Jackson, 2005). Climate change policy can no longer be dominated by 'efforts to nudge behaviour, modify attitudes and encourage individuals to make better, greener choices'. If there is to be any substantial and effective reduction in greenhouse emissions, 'new forms of living, working and playing will have to take hold' (Shove, 2014, p. 415).

Social practices are what people do to pursue shared goals within certain settings. The actions that compose a practice are 'either bodily doings and sayings or actions that these doings and sayings constitute.' They are 'organized nexuses of activity' which take place in everyday life, such as cooking, washing, driving, hobbies and recreational activities (Schatzki et al., 2001, p. 56). Reckwitz develops these ideas by proposing that a practice is a 'routinized type of behaviour' which consists of interdependencies between diverse elements including 'forms of bodily activities, forms of mental activities, "things" and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge' (Reckwitz, 2002, p. 249). Practices, such as ways of cooking, consuming, working, taking care of oneself or others, form a *block* which then depends on the existence and interconnectedness of specific *elements.* A practice also represents a *pattern* of many single and often unique actions. The individual person acts as the *carrier* of a practice, or of many different practices which need not be linked to each other. He or she is not only a carrier of patterns of physical behaviour but also of certain routinized ways of 'understanding, knowing how and desiring'. These 'mental' activities are necessary elements and qualities of a practice in which the single individual participates. They are not qualities of the individual (Reckwitz, 2002, p. 249/50). Moreover, the practice as a nexus of doings and sayings is not only clear to the person or the people who carry it out, it is also understandable to contemporary observers.

Elizabeth Shove describes practices as 'what individuals do' to 'reflect the pursuit of shared goals (comfort, mobility) within a particular socio-technical setting'. They are recognisable *entities,* existing across time and space, which depend on the integration of *elements,* and are then enacted by reliable *carriers.* Thus, these 'practices-as-entities' are carried, maintained, and transformed by groups of practitioners (Shove, 2014, p. 417). Practices exist as *performances* through which the *pattern* of activity is carried out, reproduced and transformed. Practices are always in the process of formation, re-formation and de-formation (Shove et al., 2012, p. 44). To fully understand social change we need to examine how practices emerge, evolve, and fragment, and to look at who are the carriers and why they are carrying (Shove, 2010).

Practices are defined by interdependent linkages between materials, competences and meanings. Materials include objects, infrastructures, tools, hardware and the human body itself;

competences refer to the expertise or knowledge required to carry out the performance; and meaning is a term the authors use to represent the 'social and symbolic significance of participation at any one moment' (Shove et al., 2012, p. 24). They can change and develop or be super-ceded by other meanings. Elements of meaning can be mediated through the press and social media. Social practices, like driving, depend on specific combinations of materials, meanings and competence. The car, the road and other traffic, the know-how required to stay alive and the meaning and purpose of driving are intimately related, comprising what Reckwitz calls a 'block' of interconnected elements.

Just as elements are linked together to form recognisable practices, so practices link, one to another, to form *bundles* and *complexes*. Bundles are loosely connected patterns based on the co-location and co-existence of practices. Complexes represent stickier and more integrated combinations, some of which depend so much on each other that they become new entities in their own right (Shove et al., 2012, p. 81). The popular practice of Nordic Walking could not have taken off if walking with sticks continued to be associated with old age and infirmity. The meaning had to be turned around to denote vitality and well-being. So, manufacturers of Nordic walking gear and others associated with the practice made it their business to promote the narratives of personal health and well-being, fresh air, the outdoors and nature. If you are a Nordic walker, you are the kind of person who cares about these things. The notion of frailty is firmly displaced (Shove et al., 2012, p. 54/5). Likewise, the widespread introduction of washing and drying machines in the 1950s and the marketing of detergents have radically changed how people launder their clothes and their notion of what 'clean' means. Whereas in the past, worn clothes were aired before being put on again, and a certain level of odour and soiling was deemed acceptable, now many items are only worn once before being put in the washing machine. Norms around cleanliness and smell have shifted. Cleanliness is now viewed in terms of 'freshness' and 'whiteness', rather than being germ free. It is expected to shower at least once a day, so as to avoid being sweaty or smelly and being judged accordingly (Shove, 2003).

Critique

Alan Warde (Warde, 2014) identified a number of problems associated with social practice theories. In his view, theorists have been more successful at re-describing and analysing the

minute details of how commodities are used in the performances of daily practices, than they have been in clarifying the institutional or systemic conditions underlying the existence of these practices. It is not always clear how boundaries of a practice are identified in order to justify treating it as more than just a random personal activity and as one driven by collective formation and monitoring. Warde suggests that criteria for recognising a practice could include whether it has an instruction manual or certain acknowledged standards agreed by participants, or whether it would be eligible for a time-use survey, i.e. the people involved know they are doing it, and can report how much time it takes, or whether specialised equipment is connected to the activity. Practice theories, while clearly dismissing the model of individual choice and independent decision-making, accept that actions involve repetition, but they are challenged by the idea of actions driven by habits which occur in conditions of often mindless distraction. Many activities rely on technical tools, machines and material commodities. For instance, in order to stay fit, you might join a fitness gym, use personal training equipment, buy lycra clothing and specialist shoes. Theories of practice tend to focus on the determinant role of equipment – objects, tools, material goods and infrastructures, on the role they play in helping to sustain the repetitive actions and their ability to displace established skills and knowledge. However, the power of objects may be overplayed, to the detriment of other factors like mental processes, senses and emotions, practical procedures, improvised use of equipment, and the limitations of the wider world and its social arrangements. It might be better to see equipment as facilitating habits and actions.

Another criticism refers to how social practice theory focuses on the emergence or disappearance of practices but is at risk of downplaying the significance of diversity and difference. Practices are by definition social in the sense that they are shared and recognised by others, but we should not assume that they are always performed in the same way. Therefore, more attention needs to be paid to the variation in how practices are concurrently reproduced within different contexts if it is to be determined how such variation might be encouraged or impeded (Hitchens, in Shove et al, 2014: 105). It is claimed that the practice approach presents procedural and philosophical challenges (Doyle and Davies, 2013). While the development of practice innovation task forces, focused on learning, experimentation and co-operative processes, are advisable they would pose an ideological challenge by auguring in a situation where government and other public agencies

are actively shaping domestic patterns of demand and expectations, in a world where the consumer is king and consumption is essential for economic growth.

Lorraine Whitmarsh and colleagues (Whitmarsh et al., 2011) proposed that a claim that behavioural approaches and social practice theory are like 'chalk and cheese' (Shove, 2010) was generally dismissive of non-sociological approaches to social or behavioural change and portrayed psychological models of behaviour in an overly simplistic manner. While agreeing that environmental policy tends to emphasise individual responsibility for social change, thus deflecting attention away from the responsibility institutions and state agencies should arguably shoulder, Whitmarsh et al do not wish for the pendulum to swing too far in the other direction towards a situation where individuals are excluded from societal decision making and the enactment of social change. Another view (Wilson and Chatterton, 2011b) maintains that it is perfectly possible for the different models to co-exist, even if they are contradictory, precisely because they represent different things, they define different problems and answer different questions. The authors give the example of how social psychology models which highlight ease and convenience and provide opportunities for social comparison, are useful for promoting kerbside recycling (McKenzie-Mohr, 2000). The same models are not as applicable when focusing on the household-consumption patterns which generate the rubbish in the first place. Likewise, the 'nudge' approach can be successful in tweaking people's response to form filling, and decisions around organ donation or whether or not to drop litter or reuse hotel towels (Thaler and Sunstein, 2008, Cialdini, 2007), but may not be so effective in combating repetitive multi-faceted activities. 'The pragmatic challenge for policy makers concerned with behaviour change is to identify which insights are offered by which models about which emissions-related behaviour in which context' (Wilson and Chatterton, 2011b, p. 2783).

1.2 PUBLIC RESPONSE TO RENEWABLE ENERGY DEVELOPMENTS

1.2.1 UNDERSTANDING THE 'SOCIAL GAP'

National opinion surveys generally indicate a high level of support for renewable energy in

principle, with differing levels of support depending on the technology (Upham, 2009). But it is a great mistake to take general support for wind power and other renewables for granted and to expect people to welcome developments they claim to support (Wolsink, 2000). There is very often a gap between what people say they will support and what they actually do when faced with a development proposal for their area (Batel et al., 2015). This links to the '*attitude-behaviour gap*' (Fishbein and Ajzen, 1975, Ajzen and Fishbein, 1980, Juvan and Dolnicar, 2014, Papaoikonomou et al., 2011), and the *'intention-behaviour gap*' (Sheeran, 2002). Most people don't think about the desirability of a particular development until a proposal is made to site one in their neighbourhood. A discussion on the practical details of a proposal usually only happens when people are confronted with an application for a concrete development. In the course of such a discussion, they learn more about the proposal and may change their opinion as to its impact and desirability (Wolsink, 1994). But, of course, this reflects the 'social dilemma' whereby, if people refuse to co-operate at all locations, renewable energy developments will not be built anywhere, despite a clear consensus in favour of them (Wolsink, 2000).

The 'social gap' between high public support in opinion surveys and local opposition on the ground can be explained in the following three ways (Bell et al., 2005):

1. *Democratic Deficit* – decisions are controlled by an opposing minority, and the planning process (plans made by the developer, announced to the public, and then defended against criticism) does not reflect the will of the majority.
2. *Qualified Support* – while people support wind energy in general they have concerns about proper siting, controls and limits.
3. *Self Interest* – people support wind energy in general but will oppose any developments in their own area – the Not In My Backyard (NIMBY) explanation, which is often used and has been widely criticized as being too simplistic (Wolsink, 1989, Wolsink, 1994, Bell et al., 2005, Burningham et al., 2006, Devine-Wright, 2005, Jones and Eiser, 2010, Batel et al., 2015).

In 2013, Derek Bell and colleagues (Bell et al., 2013) reconsidered this three part explanation for the social gap. They concluded that, while the social gap continues to be politically significant, their original framework was too simplistic. In their reinterpretation they ask two questions: 'What is the makeup of public opinion on wind energy?' and 'What are the relations of power in

the local politics of wind energy?' (p. 129). In their view, the answer to the first question should provide a critical analysis of the results of standard public opinion surveys, and the answer to the second question should indicate who obstructs wind energy developments and under what conditions. The evidence suggests that 'there are large numbers of qualified supporters and (some) place protectors as well as a few unqualified opponents and, perhaps, some self-interested NIMBYs, who may all work together to oppose particular wind energy developments' (p. 130).

1.2.2 PUBLIC RESISTANCE TO RENEWABLE ENERGY DEVELOPMENTS

There are many 'independent variables' which reflect the 'multidimensional nature of forces' shaping public perceptions and concerns around renewable energy developments, including 'physical, contextual, political, socio-economic, social, local and personal' aspects (Devine-Wright, 2005, p. 134).

From data gathered both before and after the construction of three large windfarms in the Netherlands, Maarten Wolsink identified four kinds of public resistance (Wolsink, 2000, p. 57):

1. A positive attitude towards wind power generally, but opposition to the construction of a wind farm in their own neighbourhood, which, according to Wolsink, reflects the only true NIMBY response.
2. Objection to a wind farm in one's own neighbourhood because of a general rejection of wind power technology, sometimes called a NIABY (Not In Any Backyard) response – which is usually based on concerns about the impact of wind power on the landscape.
3. An initial supportive attitude to wind power which shifts dynamically to opposition as a result of the discussion surrounding the wind farm proposal for their area, and a shift in risk perceptions.
4. Resistance arising from the perception that the particular development is flawed, and the proposed site is unsuitable, especially if other locations are deemed more appropriate. Qualified support, but only under certain conditions and in specific locations.

All four 'behaviour-motive combinations' can exist, but one will usually become dominant over time.

Through their research into local reactions to an offshore wind energy development proposal Geraint Ellis and colleagues have identified four objector discourses (Ellis et al., 2007):

1. Anti-Wind Power – the *Local Resister* (17% of total variance), who has strong anti-wind views, broad concerns about the local impact and a determination that the project must be resisted locally.
2. Pro-Wind Power — the *Siting Sheriff* (21%), who generally supports the idea of wind power but has concerns about the impact on the proposed site.
3. Anti-Developer—the *Pragmatic Localist* (14%) who is strongly anti-developer, concerned about local impact and not interested in the wider issues of climate change or energy security.
4. Economic Sceptic— The *Siting Compromiser* (10%) who is worried about the short term consequences of the project, evaluates the proposal through economic rationale and is prepared to consider other locations.

Ellis et al note that opponents to the offshore scheme are aware that the expansion of renewable energy is a progressive development, and so stress that they are not anti-renewables, or climate change deniers. 'Indeed, the pattern of responses suggests that this is not merely rhetorical and it must be assumed most objectors are genuinely pro-renewable, although clearly not all pro-wind' (*ibid* p. 526). Most objectors see their opposition as a matter of principle, and see little scope for compromise, 'at least in the absence of any extended deliberative process'. All objectors agree that the expansion of wind power is not a good enough reason for despoiling the natural, even spiritual, beauty of the area. In relation to the project detail the proximity to the shoreline seemed to be the greatest concern.

In their analysis of a selection of published material produced by both pro- and anti-windfarm groups and other interests in relation to the same offshore wind development case study in Ireland, John Barry and colleagues (Barry et al., 2008) identified the following opposition discourse themes:

- a sense of sacrifice and disempowerment
- a lack of trust in government, regulatory processes and windfarm developers
- a language of war, conflict and defense
- a rhetoric of foreignness, aliens, anti-colonialism and 'them' and 'us'; the industrialization and commercialization of the environment

- a strong NIMBY rebuttal.

It is common for protest groups to question how much energy the RE development will produce, relative to its environmental impact locally, and skepticism about the reality of climate change, its causes and impacts, may also be higher than opinions polls suggest, particularly amongst objectors (Upham, 2009).

A case study examining the public opposition to a wood gasification development in North Wilshire, UK, (Upreti and van der Horst, 2004) shows that people's concerns included the following: inappropriate location; close proximity to local homes; air emissions; smells; light pollution at night; vibration and noise; impact on public health; impact of extra traffic especially trucks on the roads and implications for road safety; negative impact on wildlife, ecosystems, and local weather; visual intrusion of high chimneys; negative effects on local heritage, tourism, and other businesses; lack of openness; negative impact on property prices; social and environmental costs far outweighing any local benefits; no significant employment opportunities; no compensation for local people. There was also a concern that the proposal would set a precedent for further industrial development in the area and that it contravened Area of Special Archaeological Significance and Rural Buffer Zone designations. Objectors also made the following points: the development of biomass energy is good in principle, but should not conflict with local policies; there was no consultation with the public before the site was chosen; developers failed to provide adequate information on request or to listen to concerns; any information came too late as opposition was then too strong; the area is a country conservation zone and the development would have a negative impact on it's clean, peaceful and rural character.

Another case study focused on the local response to a failed biomass gasifier proposal in Devon, UK (Upham, 2009). Surveys were carried out in 2004 and again in 2007 before planning permission was finally rejected and the project was shelved. In 2004, the main concerns related to the negative impact of the extra truck traffic on the roads and its associated pollution; doubts about the credibility of the developer; and harmful gaseous emissions from the plant and associated odours. 'Local people felt that they were being asked to accept an industrial scale

development that would lead to deterioration in their quality of life' (p. 4275). They felt they were bearing the environmental cost while widespread regional and national energy wastage continued. By 2007, there had been a notable increase in the number of people worried about noise, the change in the landscape, and the negative environmental impacts of bioenergy crops. No incentives were offered to encourage acceptance. People's sense of fairness, and belief in the right to have their say in local decisions was challenged. There were strong doubts about the effectiveness of renewable energy in comparison, with for instance, nuclear power. There was a tendency to equate bioenergy with incineration, along with all its negative connotations, and people questioned how environmentally friendly bioenergy really is, particularly if feedstock transport and combustion emissions are taken into account.

In relation to wind energy developments visual impact on the surrounding landscape and noise from the rotating blades are the most frequently reported problems. Other concerns include perceived unreliability, negative impact on birds and wildlife, economic cost, perceived inefficiencies, and frustration at idle turbines (Devine-Wright, 2005).

However, it has been noted that the research literature on public attitudes to wind power is unreflectively pro-wind, which limits its ability to fully explore and understand the range of public reactions (Aitken, 2010, Ellis et al., 2007). 'The use of unreflective public opinion surveying reinforces dominant power relationships.' While the motives and credibility of opponents are scrutinized, the positions held by supporters of wind power have not been analysed in a similar fashion. Yet, 'there are many examples of supporter discourses that are evangelical and ideologically committed to wind power to the point that they defy any constraints on the deployment of renewables', which is not in the interest of good research (Ellis et al., 2007, p. 520).

Mhairi Aitken (Aitken, 2010, p. 1834) stresses that 'the literature must abandon the assumption that it knows who is "right" and instead must engage with the possibility that objectors to wind power are not always "wrong"'. Aitken calls for critical analysis of the following assumptions:
1. *The majority of the public supports wind power* – who commissioned the polls, how were the samples selected, who asked the questions and analysed the answers? Opinion polls can only be

seen as a snapshot in time of public opinion, and do not reflect the dynamic and ever-changing nature of public sentiment.

2. *Opposition to wind power is therefore deviant* – opponents are often given the NIMBY label.
3. *Opponents are ignorant or misinformed* – quite the contrary, many are very knowledgeable about the issue.
4. *The reason for understanding opposition is to overcome it* – this defines how the problem is viewed, affects the conclusions that are reached, and discourages researchers from learning from opponents and incorporating their concerns. It is important to understand opposition, the social context of renewable energy (RE), and in particular how the planning processes affect how people react – rather than just focusing on how to quell and avoid future opposition.
5. *Trust is key* – it is not enough just to call for trust in the technology, in wind developers and in the planning system. Researchers need to trust the opinions and knowledge of the general public, and the process of participation, which may not necessarily lead to support for particular developments.

Many presume that people only object because they are selfishly protecting their own assets, and the NIMBY stereotype is regularly cited. This 'Not In My Back Yard' acronym was apparently coined by Walter Rodgers of the American Nuclear Society (Friends of the Highland Mountains, 2019), and then used by the staff correspondent of The Christian Science Monitor, Emilie Travel Livezey, in an article on hazardous waste in 1980 (Livezey, 1980). The term was popularized by the late Nicholas Ridley, the politician in charge of the poll tax in the Thatcher government of the late 1980's (BBC News, 2002).

'In plain language, NIMBY is the motivation of residents who want to protect their turf. More formally, NIMBY refers to the protectionist attitudes of, and oppositional tactics adopted by, community groups facing an unwelcome development in their neighborhood' (Dear, 1992, p. 288). In popular usage NIMBYs are 'usually selfish and parochial individuals who place the protection of their individual interests above the common good' (Burningham et al., 2006, p. 4). The term is used in a wide variety of senses and, when used, can cause offense and lead to more opposition (Wolsink, 1989, Wolsink, 1994). There is considerable disagreement over the worldviews, values and concerns which lie behind 'NIMBY opposition (Hunter and Leyden,

1995) and many authors use the expression without any clear explanation, simply equating NIMBYism with local opposition, regardless of the motivation. It has been concluded that the term is outdated, and empirical results do not support the presumed prevalence of NIMBY views (Devine-Wright, 2005, Jones and Eiser, 2010).

The NIMBY concept fails to reflect the complexity of people's motives and their interaction with social and political organisations (Bell et al., 2005). The use of the term can also be culturally specific, in that it is used to describe opponents in relatively wealthy countries but is far less likely to be linked to people who protest a development in poorer countries – which may reflect a tendency to characterize opposition from the poor as struggles for justice and opposition from the affluent as selfish acts. This value judgement serves to legitimate one group of protesters and undermine another (Burningham et al., 2006). The concept 'unhelpfully muddles whether opposition should be conceived as a belief or attitude towards a development, a behavioural response taken by individuals or the collective actions of organized groups'. Therefore, so-called NIMBY responses should be re-defined as 'place protective actions' (Devine-Wright, 2009, p. 431). They should also be seen as being contextually generated, in that they may shift in the course of a dispute, be influenced by interactions with developers and other stakeholders and by the solutions proposed by key players (Burningham et al., 2006). Objectors have a counter argument to the NIMBY charge: they are not being selfish, but are acting as custodians and protectors of the local environment (Batel et al., 2015).

1.2.3 PUBLIC ACCEPTANCE OF RENEWABLE ENERGY DEVELOPMENTS

It is important that we explore reasons why people support renewable energy developments as well as why they oppose them (Burningham et al., 2006). Susana Batel and colleagues (Batel et al., 2013) make the point that, in the literature on public acceptance of renewable technology, the words 'acceptance' and 'support' are used interchangeably. They argue that while the two words are similar in that they both seem to imply agreement they have different meanings. 'Acceptance' implies a passive reaction to something external, while 'support' denotes a more active stance or engagement in favour of something. Whereas 'acceptance' could result from apathy, uncertainty, or resignation, 'support' demonstrates a positive reaction. It is therefore important to look at why

people accept and oppose developments, but equally important to find out why they support them.

Dave Toke (Toke, 2002) invokes the classic rational choice theory of Mancur Olson (Olson, 1965) which posits that small well organized groups of people can thwart the will of the majority, who may want wind energy because of its environmental qualities, or as an alternative to nuclear power or because it contributes to energy security. But the effect of having a windfarm in one's area will have little impact on collective benefits, and there are few local gains. Therefore, it is not worth making the effort to argue in favour of the development. The temptation is to take the 'free-rider' option of supporting wind power in general but doing little to support it locally. On the other hand, for people who have concerns about the impact of the development on their area, it is worth the trouble of petitioning and campaigning to stop the development, as the benefits gained are greater than the effort required.

Toke's analysis sounds a bit harsh and could lead one to blame the silent supporter for not speaking up. But the situation is rarely that clear cut. People may not come forward expressing their support for local developments simply (and often wisely) because they do not want to fall out with their neighbours or get involved in local conflict. The process of organizing, and the prioritizing of perceptions and meanings, can give rise to local splits and divisions (Dalby and Mackenzie, 1997). Open support for a proposed development may be taken as a sign by some opponents that their neighbours are collaborating with the developer or benefitting from the project in some way. Supporters may judge that the opponents are dominating the decision making process, and that there is little role for them. They may not want to align themselves with the 'evangelical' (Ellis et al., 2007, p. 520) environmental supporters. From a campaign point of view, it is easier to rally the troops against, rather than for, something, primarily because our brains are hard-wired to choose negativity over positivity. (Gaffney, 2011). It is suggested that, if the emphasis were shifted from competitive bargaining between the different interests to consensus building, passive supporters may feel more inclined to get involved in decisions about local developments (Burningham et al., 2006).

Geraint Ellis and colleagues (Ellis et al., 2007) analysed the supporter discourse as it existed in their research on the public response to an offshore wind energy proposal in Northern Ireland. They identified four discourses of support:

1. Rationalising Globally—*Sacrificing Locally* (17% of total variance) – any negative impacts are necessary to achieve sustainability goals
2. Local Pastoralist—*Developer Sceptic* (7%) - a reluctant supporter with some concerns about negative local impacts and skepticism about the motives of developers and the economics and role of wind energy to meet climate change targets
3. *Embrace Wind* (28%) - a strong believer in wind power and wind developers, future oriented, and disparaging of objectors
4. Site Specific Supporter—*Energy Pragmatist* (12%) - very concerned about energy issues, a pragmatist giving support to this particular site-specific proposal

The authors concluded that most supporters were strongly driven by their awareness of the need to take action against climate change, and the importance of their area playing its part. Most supporters trusted the developers, and viewed objectors as a minority with a short term focus who were going against the public interest.

In their analysis of some of the published material from pro-windfarm interests, John Barry and colleagues (Barry et al., 2008) identified the following supporter discourse themes:

- there is an urgent need to address the threat of climate change and to transition to a low carbon economy
- renewable energy is the modern way forward and is economically beneficial
- there is rational, knowledge-based, scientific evidence for the decisions that are being made
- opposition, which arises from ignorance of the facts or old-fashioned thinking, must be overcome
- there needs to be consensus and no-one should opt out
- if only people had all the facts they would respond.

1.2.4 KEY FACTORS AFFECTING THE PUBLIC RESPONSE TO RE DEVELOPMENTS

While there are no doubt concerns relating to the local impact of different RE projects, such as increased traffic, noise, odours, impact on birds, etc, the principal concerns relate to place attachment, visual impact, and proximity. Public response can also be influenced by the actual construction of the development, by social networks and campaigns, and issues of governance.

1.2.4.1 PLACE ATTACHMENT

'In spite of (and perhaps because of) the jet, the 'net, and the fast-food outlet, place persists as a constituent element of social life and historical change…A place is a unique spot in the universe. Place is the distinction between here and there, and it is what allows people to appreciate near and far. Places have finitude, but they nest logically because the boundaries are (analytically and phenomenologically) elastic' (Gieryn, 2000, pp. 463-5). According to Gieryn, place has physicality – it is not a place if it isn't named, identified or represented by ordinary people. Place is not space. Place becomes space, when 'the unique gathering of things, meanings, and values are sucked out. Put positively, place is space filled up by people, practices, objects, and representations.'

In general, place attachment is defined as 'an affective bond or link between people and specific places', and is demonstrated by the tendency of human beings and animals to seek out where they were born or to find a place where they feel comfortable and secure (Hidalgo and Hernandez, 2001, p. 274). It is a complex phenomenon (Devine-Wright and Howes, 2010), but is seen as being a fundamental human need (Giuliani, 2003). Place attachment can be defined as 'both the process of attaching oneself to a place and a product of this process. As product, place attachment is a positive emotional connection with familiar locations such as the home or neighbourhood, correlating with length of dwelling, featuring social and physical sub-dimensions the relative importance of which may vary, and leading to action, both at individual and collective levels' (Devine-Wright, 2009, p. 428). People can have an enduring attachment to a place they frequently visit, which for them gives restorative benefits such as, relaxation, stress

reduction, positivity, letting go of negative feelings and worries, clearing the mind, and recovering mental focus. People are more consistent in their attachment to 'natural', rather than 'urban' favourite places (Korpela et al., 2009, p. 95). They are nurtured through routines and daily experience (Clarke et al., 2018).

Two aspects of attachment are communal in nature: a sense of 'bondedness', the feeling of being part of one's neighbourhood, and a sense of 'rootedness' in the community. The emotional connections between people, and between people and their place, are at the core of the 'sense of community'. When people are able to work together to protect their place they are likely to feel empowered (Manzo and Perkins, 2006, pp. 338-40). Strong place attachments contribute to social cohesion, feelings of safety, and physical enhancement. There is no doubt that people of all ages and ethnic backgrounds enjoy living in a neighbourhood that instills pride. It's a self-perpetuating cycle - those who are more attached to their areas contribute more (Brown et al., 2003). Place attachment can result in organized communities in that attached citizens are more likely to spend money, time and effort locally, and to get actively involved when their area is facing an unwelcome change (Bailey et al., 2012). But place attachments can also have a shadow side. While they can form the basis for community co-operation and action, they can also be the cause of destructive community conflict (Manzo and Perkins, 2006). When people compete with each other over place there can be disastrous consequences (Giuliani, 2003). Place attachment may be detrimental to well-being if it prevents citizens from moving away to seek better experiences and availing of new opportunities (Bailey et al., 2012).

Place attachments are not static. They develop slowly and evolve as people's lives develop and change. Social attachment is greater than physical attachment, women show greater place attachment than men (partly reflecting the fact that many still have domestic responsibilities which tie them to their neighbourhood), attachment increases with age (even if you discount length of residence), and there is no discernable class difference (Hidalgo and Hernandez, 2001, Bailey et al., 2012). However, it has also been shown that attachment is significantly lower in more deprived areas because of weaker levels of social cohesion (Bailey et al., 2012).

Place attachments are 'integral to self-definitions, including individual and communal aspects of identity' (Brown and Perkins, 1992, p. 280). The development of *self-identity* is not restricted to distinguishing oneself from others, it also extends to objects and things and the places in which they are found. The concept of *place identity* refers to how physical and symbolic features of certain areas contribute to an individual's sense of self (Devine-Wright, 2009). It is 'a sub-structure of the self-identity of the person consisting of, broadly conceived, cognitions about the physical world in which the individual lives. (Proshansky et al., 1983, p. 59). Place identity is 'a dynamic phenomenon that grows and transforms through lived experience' (Manzo and Perkins, 2006, p. 337).

The individual is often unaware of their attachment to place, and it may only manifest on a conscious level when there is a disruption (Hidalgo and Hernandez, 2001). An early study in the West End of Boston (Fried, 1966), researching the psychological impact of relocation on the lives of local people, concluded that their reactions were expressions of the grief caused by the loss of place and of group identity, which, for many, manifested in a sense of pain, continued longing, symptoms of distress, a feeling of helplessness, occasional signs of direct and displaced anger, tendencies to idealise the lost place, and difficulties in adapting to their new situation. The greater the person's commitment to the old area, the greater was their grief reaction to moving. Similarly, people can have a psychological response to an expected change in their place, such as a proposed development. Their response occurs over time and goes through five stages (Devine-Wright, 2009, p. 433).

1. Becoming Aware – what kind of place changes will occur?
2. Interpreting – what are the implications of change for this place?
3. Evaluating – will the outcomes of place change be positive or negative?
4. Coping – how might I respond to place change?
5. Acting – what can I do about it?

Those who are strongly attached are more likely to take an interest and get involved in actions to prevent unwanted change, whereas people who are less attached to the place may feel less motivated to engage. Whether place attachment leads to a negative view of place change depends on the type and strength of the attachment and the perception and interpretation of the change.

How changes to one's place are interpreted, rather than the physical form of the change itself will determine the reaction (Devine-Wright and Howes, 2010). Place attachment may invoke a positive reaction if the proposed development is seen as enhancing the area. However, if people feel their area is to be sacrificed because of climate change, or because of unfair planning rules and the outcome is seen as being negative and immediate, they are likely to see the change as a threat to their place identity as the disruption is expected to alter how they experience the cherished place – its sights, views, smells and sounds (Devine-Wright, 2009). Interpretations of the impact of the development can also be shaped by the social context which is moderated by one's trust, or lack of trust, in key organisations (Devine-Wright and Howes, 2010). Coping responses include denying the change is happening; denying its possible adverse effects; re-establishing place meanings; sharing concerns with trusted others; physically leaving the area; protecting their place by writing letters, signing petitions and becoming involved in collective protest (Devine-Wright, 2009, Clarke et al., 2018). People who feel a positive attachment to the place that will be affected may rise up in opposition, regardless of the other attributes of the proposal (Manzo and Perkins, 2006, p. 338).

A study examining the relationships between place attachment, the theory of planned behaviour and place-protective action (Anton and Lawrence, 2016), found that place attachment was stronger in those who saw place change as being negative. However, only half of the citizens who viewed the change negatively got involved in protesting. Using Ajzen's theory of planned behaviour (Ajzen, 1991), the authors concluded that those who were more likely to protest were people 'who had positive attitudes about the value of protesting, who thought that most people around them were protesting, and who had greater perceived behavioural control' (p. 145).

After severe flooding in 2004 in Clontarf, a coastal suburb of Dublin, initial flood defense proposals were proposed by Dublin County Council. A protest against the project was attended by approximately 5,000 people in 2011 and the issue received significant media coverage. The project stalled but discussions over alternative flood defenses were ongoing in 2014 and residents were frequently informed of these through a community website and newsletter. In July 2014, a questionnaire survey was carried out with 280 residents of the Clontarf area (Clarke et al., 2018). Strong place attachment was evident from the responses and was demonstrated in particular by

people's appreciation of the aesthetic and recreational values of the local promenade, which would bear the brunt of the proposed flood defenses. While the residents recognized the need for the flood barriers (and some of them had had direct experience of the serious flood of 2004), they could not accept them if they required a change in the form or function of the promenade. The proposed plans were subsequently shelved.

Empirical data from a case study relating to a proposed 750MW off shore wind farm in North Wales was used to investigate the impact of place attachment on people's reaction to the proposal in two nearby coastal towns – Llandudno and Colwyn Bay (Devine-Wright and Howes, 2010). LLandudno was represented by its inhabitants as a place of environmental and scenic beauty linked to the coast, and very popular with tourists. On the other hand, Colwyn Bay was seen by its residents as having lost its former coastal beauty and becoming run down, partly due to the influx of undesirable outsiders. LLandudno residents saw the windfarm development as posing a serious threat to the aesthetic beauty of their town, while the people of Colwyn Bay had a less negative view, seeing the development as possibly boosting employment and local prosperity. Levels of place attachment were generally high in both areas, but were significantly higher in Llandudno than in Colwyn Bay. The research found that areas that are found to be psychologically restorative and of scenic amenity value are most likely to be defended by strongly attached local inhabitants, while areas that have lower levels of attachment are represented as being less desirable. However, the strength of place attachment in itself does not inevitably lead to opposition to place change – that depends on the social interpretation of the change.

1.2.4.2 VISUAL IMPACT

The literature suggests that the aesthetics of wind power primarily drive both positive and negative public opinion on wind turbines and visual impact is seen as being one of the key issues relating to wind farm siting (Jones and Eiser, 2010). 'One of the main reasons for public opposition is the visual impact they have in landscapes and their scenic quality' (Devine-Wright and Batel, 2013, p. 640). 'If the perceived visual quality of a project is positive, people will probably support it' (Wolsink, 2000, p. 51).

Bearing in mind the importance of place attachment and the impact of place change, a major concern for many people is the physical change in their area, on their landscape and on their view. People's emotional reactions to the visual impact is so strong because they expect permanence in their landscapes and open space remains 'the inalienable right of all those with the luck to have been born there or - as some believe - the sense to have moved there' (Pasqualetti, 2000, pp. 389-90).

The 'Not-In-My-Front-Yard' (NIMFY) concept (Kontogianni et al., 2014) highlights people's concerns about what is in front of them - the view they look out upon, and how this might be changed by any new development. An analysis of studies on public reactions to wind farms in the Netherlands between 1984 and 1989 (Wolsink, 1989) concludes that opposition towards wind turbines can be largely attributed to concerns about the visual impact on the surrounding landscape. But because this is not a strong argument in the planning process people reframe their opposition in terms of noise, impact on birdlife, and unreliability.

Susana Batel and colleagues refer to the concept of essentialisation which they describe as 'the process by which a given entity…is socially constructed as having a particular, natural and unchangeable, essence'. Place attachments and place identities are not 'there', but are instead a socially constructed 'way of seeing' (Batel et al., 2015, p. 150). In their study, focus groups were conducted in both the UK and Norway with members of local communities to be affected by the construction of HVPLs (high voltage power lines) necessary for renewable energy development. The research shows that participants present British and Norwegian rural landscapes as having a different essence to that of the high voltage lines. Moreover, the place where they live has more of an essence of the British or Norwegian countryside than other areas in Britain or Norway. Therefore, while the HVPLs are intrusive and incompatible anywhere in the countryside, they are even more so in the rural area in which the participant lives. Many of the people who oppose renewable energy proposals perceive a 'lack of *fit* or compatibility between the essence of energy infrastructures, with their industrial, modern characteristics, and the essence of landscapes, where they are usually deployed, and that are seen, or presented, as natural and pristine' (p. 150). Power lines and specifically, pylons, are represented as having characteristics that will spoil and destroy

the countryside as they are industrial, man-made and unnatural, and they evoke visceral responses as demonstrated by the 'Yuck' word by one of the research participants.

1.2.4.3 PROXIMITY

The NIMBY concept has led to the assumption that the closer a renewable energy installation is to one's own 'backyard' the stronger will be the opposition. However, the earlier empirical evidence around the proximity hypothesis is mixed (Devine-Wright, 2005) and continues to be inconclusive (Kontogianni et al., 2014). It is proposed that the variable nature of the research results may have something to do with the development of wind turbine technology, and the introduction of quieter designs (Devine-Wright, 2005).

The proximity theory implies that the public should be more accepting of off-shore wind farms. However, 'it is by no means clear why deploying wind turbines offshore will be any less controversial than onshore projects' (Devine-Wright, 2012, p. 195). There has been considerable opposition to a 150-250 MW offshore proposal off the North Antrim (Northern Ireland) and Donegal (Republic of Ireland) coasts (Ellis et al., 2007) and to a 750 MW offshore windfarm off the coast of North Wales (Devine-Wright and Howes, 2010). The focus on physical proximity masks the importance of the visual impact of a particular place. People often choose to live in coastal locations because of their splendid views across the sea. Coastal resorts do not stop at the water's edge. This is backed up by a study which asked participants to give their opinion on a number of proposed locations for on- and off-shore wind energy installations in the UK (Jones and Eiser, 2010). While there was an increase in positive attitudes with increasing distance, the increase was not linear and it was obvious that responses were not caused only by spatial proximity. The authors made a tentative hypothesis that landscape concerns, perceived site visibility, and 'an aversion to development on visible sites' (p. 3114) were playing a key role in influencing respondents' attitudes towards development within their area, and that developments which were out of sight would garner more local support.

1.2.4.4 ACCEPTANCE AFTER CONSTRUCTION

Public opposition is at its height during the planning stages of development and may become very active and visible at the construction stage. Once the plant is operational local unrest can settle down. It is therefore tempting to presume that public support will inevitably increase over time as people get used to the installation. Research has shown some support for this (Wolsink, 1989, Devine-Wright, 2005, Sovacool, 2011). However, it is also maintained that increased exposure to wind farms only improves public perceptions marginally, and it can often have a negative impact on people's responses (Kontogianni et al., 2014). Acceptance may reflect a sense of fatigue, resignation and defeat which leads people to feel that they are no longer able to oppose the wind farm (Aitken, 2010). It is unlikely that there will be 'a simple, linear relationship between experience and perception because of the numerous other influences that shape people's judgements and opinions' (Devine-Wright, 2005).

However, there is clear evidence that people perceive smaller wind farms more positively than larger developments, which is a finding that jars with official wind energy policy support for largescale projects, both larger turbines and more of them (Devine-Wright, 2005).

1.2.4.5 THE ROLE OF SOCIAL NETWORKS AND CAMPAIGNS

In 2005, Patrick Devine-Wright proposed that social influence, local networks, and the opinions of friends, family and trusted others in the locality may have a bearing on people's responses to RE developments. He also stated that there was a need to examine the role of 'communities of interest' from outside the locality, and on the internet (then in its infancy), in mobilizing support for, and opposition to, wind farm developments across local, regional and national areas (Devine-Wright, 2005) p. 136). Interestingly, his earlier research looking at the importance of social influences (such as media, the opinions of others, and the level of involvement in participatory processes) on responses to a proposed community energy wind farm in Wales, found that the single most important predictor of respondents' perceptions was the opinions of their friends (Devine-Wright, 2003). Wider local ties can also be powerful motivators (Upham, 2009).

The impact of good local organisation, the use of the internet, and the setting up of an effective campaign group is not to be underestimated. Research into the public reaction to the Winkleigh biomass gasifier proposal in Devon, UK (Upham, 2009, p. 4280/1) highlighted how resources such as e-mail and the internet greatly assisted the 'cohesion, decision-making capability and resources of the opposition'. Campaigners were able to quickly utilize internet-based information and other expertise, and some already had experience of dealing with government agencies. In the case study of public opposition to a wood gasification development in North Wilshire, UK (Upreti and van der Horst, 2004), a broad range of individuals and organisations opposed the development, including a well organised local action group called BLOT (Biomass Lumbered On our Town). There was an unexpectedly strong reaction to the off-shore wind proposal off the Northern Irish coast (Ellis et al., 2007), where the opposition was led by a group calling itself 'COAST SOS', and a high profile campaign was run by Coleraine Borough Council, funded to the tune of £80,000. A website was set up, 100,000 leaflets produced, and actor James Nesbitt and golfer Darren Clarke offered their endorsement.

LLandudno, one of the towns to be affected by the proposed 750MW off-shore wind farm in North Wales, formed an opposition group called 'Save our Scenery'. Local people's interpretation of the proposed change was shaped by, and mediated through, the social context and reliable organisations – in particular, the trusted campaign group, which drew on emotional and symbolic place-related meanings to spread a vivid narrative depicting the imminent threat. The more people trusted this group the stronger was the link between their place attachment and their opposition to the proposed development (Devine-Wright and Howes, 2010).

While strong local opposition may arise from the presence of established and cohesive social networks in the surrounding areas and behavioural resistance may be less likely if levels of collective efficacy are weak (Devine-Wright, 2009), conversely, a sense of local community may be 'formed and shaped by the opposition to a proposed facility…that is portrayed as threatening' (Dalby and Mackenzie, 1997, p. 101). Therefore, collective opposition can contribute to social cohesion. 'Previously disempowering conditions such as an individual's sense of powerlessness, or inability to escape a hazardous situation, can be transformed through collective action, in which individuals develop a common purpose and create new responses to

meet the challenges they face' (Manzo and Perkins, 2006, p. 344). Political struggle, and the process of responding to a development which is planned and financed from the 'outside', can play a part in the construction of community identity (Dalby and Mackenzie, 1997).

People's perception of risk can be affected by campaign groups. The social amplification of risk theory (Kasperson et al., 1988, Upreti and van der Horst, 2004) proposes that the public perception of hazards can be influenced by psychological, social, institutional, and cultural processes so that the response to the risk is amplified and risks with minor potential consequences can prompt strong public concern. This is exacerbated by the fact that people see themselves as being more, rather than less, vulnerable to the dangers arising from technology. The system of information and features of public response which create social amplification are essential components in determining its nature and level. Signals arising from direct personal experience of the risk, or from information about it, are processed through 'social amplification stations' (Kasperson et al., 1988, p. 181) such as the media, campaign groups, opinion leaders, peers, social networks and public agencies. The flow of information is important, as is the amount of information available, the degree to which the information is disputed and how dramatic and symbolic it is. Kasperson and colleagues use the analogy of dropping a stone into a pond, and the consequent ripples, to illustrate the spread of the message. The amplified risk then leads to behavioral responses, which in turn result in secondary impacts.

Group polarization can occur when groups come to conclusions that are more extreme than the average view of their individual members (Sunstein, 2009). As part of the group process, members exchange new information with each other, corroborate and strengthen any tentative views and ensure that people become more confident that they are correct. Partly because members compare themselves socially to each other and want to be perceived favourably by other group members, they will adjust their views in the direction of the dominant position. Social cascades can occur when a number of separate groups move quickly in the direction of a similar set of beliefs or actions (Sunstein, 2009). This was demonstrated when 200 hundred groups came together nationally to oppose the Irish government's 'flawed energy policy' and plans for new power lines, pylons and wind farms (McDonald, 2014).

Other problems can arise when people make decisions together in groups (Cooke and Kothari, 2001) including: the phenomenon of 'risky shift' (Stoner, 1961), whereby people who take risks are seen as having more status, and so individuals make collective decisions that are more risky than those they would make on their own; the 'Abilene paradox' (Harvey, 1988), referring to how groups can lead people to make decisions they don't agree with because they think it is what everyone else wants, even if this is not actually the case; 'groupthink' (Janis, 1972) , whereby people within the group become convinced that the decisions they are making are correct, and morally justifiable, and they are blinded to the harm they will cause to others; and 'coercive persuasion' (Schein, 1999) whereby the manipulation of the group process can result in negative shifts in beliefs or consciousness.

Good campaign slogans also help. When faced with specific proposals and the likelihood that they will be asked to use reclaimed water, Californian citizens were truly put off by catchphrases widely used by project opponents, like 'Toilet to Tap' and 'Sewage Beverage'. In San Diego, the newspaper published a cartoon of a dog drinking from a toilet and a man behind the dog saying, 'Move over' (Hartley, 2006, p. 116).

1.2.4.6 GOVERNANCE

The research indicates that the success of renewable energy depends on institutional factors within the energy policy and planning processes. There is a clear need to build up institutional capital both within policy making and planning agencies and developer organisations in the three areas of knowledge resources, relationship building, and the capacity for mobilization (Wolsink, 2000).

The public lacks trust in governments, policy makers, public agencies and the industrial and business sector. The more developers and planning agencies can develop public trust the more likely they are to gain acceptance for projects (Bell et al., 2005, Clarke et al., 2018). To gain the trust of the public 'transparency is important and secrecy must be avoided' (Upreti and van der Horst, 2004) p. 62). The decision making process around the siting of developments, the 'decide–announce–defend planning strategy' (Jones and Eiser, 2010) p. 3116), gives little space for

public engagement prior to approval and implementation, which means that citizens have little choice but to mount a reactive or obstructive stance (Burningham et al., 2006). Therefore, the planning process should be modified so as to encourage collaboration rather than confrontation, to prioritise participation over consultation, and discussion over education (Bell et al., 2005). But more open planning processes will only emerge ‘from reducing the arrogance of utilities, wind power developers, and public bodies involved’ (Wolsink, 2000) p. 63)

The Provision of Information

The provision of information is still the most common, almost default, action taken by project developers and state agencies in their efforts to encourage the public to accept local RE developments or adaptive measures. The provision of information, public consultation and awareness raising is usually based on the misconstrued assumption that if only objectors knew all the facts they would change their minds. There is little evidence that providing information or education on its own leads to significant reductions in the level of public opposition (Ellis et al., 2007, Clarke et al., 2018).

Providing information has its risks. It can intensify the extremes. Greater knowledge and awareness can mean that those who are opposed to the development became more strongly opposed and those who support it become more strongly supportive (Hartley, 2006). Increased debate is as likely to shift people’s views to one of opposition as to one of acceptance (Ellis et al., 2007). If scientists, engineers or other ‘experts’ argue with each other over the details of the technology and potential risks, and introduce uncertainty into the debate, the level of opposition and expression of public concerns can rise (Hartley, 2006). Objectors often question the transparency of the information provided (Clarke et al., 2018). Despite the risks, proper dissemination of information and public awareness raising has to be part of the decision-making process but it needs to be offered from the beginning before any planning application is lodged (Upreti and van der Horst, 2004). The information provided needs to be accessible and understandable and it should be grounded in trust and communicated through an inclusive participatory process (Bell et al., 2005).

The communication strategies used by the developer and regulatory agencies at different stages of the proposal will shape people's perceptions and expectations (Goedkoop and Devine-Wright, 2016). Any information given by planning agencies, developers or their experts will be filtered through each person's mindset, values and beliefs (Bell et al., 2005). The public is well able to absorb scientific knowledge when it is advantageous to do so and they may choose to ignore such information if they do not trust the messengers. Active opponents are often more knowledgeable about the development proposal that the passive supporters (Burningham et al., 2006). Whether the information connects or not with 'existing norms, values, affect, cognition and practice' will have a bearing on the outcome. There is no point in developers presuming that the public will perceive the proposed technologies as having the same symbolic attributes (e.g. as being clean, green and worthy) as themselves (Upham, 2009, p. 4282).

Participation and Deliberative Processes

'The use of power to crush opposition leads to qualitatively poor decisions. In siting facilities the only way to arrive at decisions of reasonable quality is through the participation of interest groups at all levels in the process, with an opportunity to influence all policy issues linked to the facility…Their objections must be taken seriously…No matter what strategy is advocated, one thing is clear; if it is aimed at reaching decisions without regard to the local community, it will very likely fail' (Wolsink, 1994) (no page available).

Local people may become active opponents because they have not had a chance to engage with the development proposal. Meaningful participation must empower the participants and allow for relevant, social, environmental and sustainable outcomes. Participation should not serve a greenwash or cosmetic purpose whereby public involvement is encouraged but only after the key decisions have been made (Aitken, 2010). There is a fundamental difference between showing people what development will be taking place within their area and allowing communities to demonstrate what kind of development they find acceptable (Jones and Eiser, 2010). National policy guidelines need to put in place a framework for the making of place-sensitive local decisions and for the development of a participatory process which begins before any siting decisions are made (Bell et al., 2005).

‘If government is to influence the level of public acceptance of wind farms, it must engage in a sophisticated and carefully initiated deliberative process that takes cognisance of underlying worldviews and values of those involved’ (Ellis et al., 2007, p. 522/3). Democratic participation is an ‘open-ended process, the end results of which cannot be determined in advance’ (p. 538). While essential to the effective governance of RE siting and planning issues, participative processes need to be very carefully organized and executed. According to Ellis and colleagues, they need to: take account of the key local concerns and in particular to sensitively draw out, explore and understand how the issues are framed and perceived by the different (and often opposing) stakeholders; have a clear purpose other than simply giving information; incorporate deliberative methods in order to reach ‘a settlement of differences’ rather than ‘resolution’ and ‘agonism’ rather than ‘consensus’, as opposed to striving unsuccessfully for accord or persuasion; encourage self-reflection; recognize that both sides have value-based arguments which need to be explored alongside their corresponding beliefs and worldviews, concerns and interests, in order to establish a level of mutual respect between the different sides, in advance of productive and effective dialogue; and explore the tensions between supporters and protestors, in the hope of reaching a common settlement on the shared issues and a better mutual appreciation of the outstanding differences.

However, public consultation and participation should not be seen as a quick-fix solution to public opposition because ‘public participation is a complex process through which different motivations, power differentials and other social attributes are played out, with consequences that do not always align themselves with the outcomes desired by normative theory or regulatory agents’ (Ellis et al., 2007, p. 538). It should not be presumed that objectors will necessarily want to have any involvement in activities organized by the developer, as they may not trust that these exercises will give them a chance to influence decision-making, or that their views will be taken on board. They may perceive that developers are only interested in finding ways of managing or overcoming the local opposition (Aitken, 2010). There is also the possibility that open and transparent decision making practices may actually empower and bolster opponents (Burningham et al., 2006). The idea that the purpose of participation is to overcome opposition also neglects the ‘dynamic nature’ of the processes, whereby some actions of the developers and regulators can inflame the reactions of opponents. ‘Public engagement should be viewed as an interactive,

rather than one-way, process, with the aim of changing the attitude of developers as much as objectors' (Ellis et al., 2007, p. 29). It also has to be asked if the aim of overcoming protest and opposition is always appropriate or desirable – as in democratic politics, where there is an opposition party, the existence of opposition to a proposed development may itself contribute to the quality of decision-making and to the final outcome (Burningham et al., 2006).

Nevertheless, rhetorical analysis of a selection of published material produced by pro- and anti-windfarm development groups and interests in relation to a Northern Ireland case study (Barry et al., 2008) has shown that there is a lot of shared and common ground between supporters and opponents, which gives hope for the outcome of open and deliberative processes which bring the two sides together. Central to this is the adoption of a 'conflict resolution' approach which 'accepts the legitimacy of pro- and anti-positions and moves in the direction of demanding each side to engage with the other on grounds of mutual respect and as co-equals' (*ibid* p. 94) and then looks to arrive at a negotiated compromise.

The Role of Intermediaries

There is an important role for intermediaries in arranging and managing partnerships between communities and developers, in helping to identify local community groups, and providing both sides with information required for negotiations, and also suitable spaces for dialogue (Goedkoop and Devine-Wright, 2016).

In his analysis of public acceptance of two offshore wind projects in the UK, Lincs and Gwynt y Mor, which were both subsequently built, Patrick Devine Wright compared how intermediaries were used in each case and the impact they had on the outcomes (Devine-Wright, 2012). There was limited opposition to the Lincs wind farm, whereas Gwynt y Mor sparked much protest and the setting up of a campaign group in the nearby seaside town of LLandudno. Early on in the consultation process, the UK developer in the Lincs case recruited a former teacher, who lived in the area to play an active education oriented role within the local community, running workshops, and working with children in the local schools. She adopted a neutral stance and portrayed herself as both a company representative and the intermediary between the developer and the community (but not vice versa). In contrast, the Gwynt y Mor developer, a German

company, employed a person from the PR company to be their representative on the ground. That person lived outside the directly affected area and acted in more of a passive, monitoring, listening capacity, keeping the company informed on developments on the ground, rather than acting as a bridge between both sides. Both intermediaries were female. The fact that there was so much controversy in the Gwynt y Mor case and relatively little in Lincs, would seem to indicate that the approach of employing a locally based intermediary in an educational role was more successful than helicoptering in a PR monitor. However, Devine-Wright urges caution on making any firm conclusions from this study and calls for further research. Such outcomes are not guaranteed as they don't address key issues such as the power inequality between actors.

Financial Benefits

It is thought that the way to help deflect any self-interested objectors is to offer financial compensation, provide share options, or encourage community ownership (Bell et al., 2005). Solutions that are considered appropriate for self-interested opponents rely on trade-offs and compensation, such as community trust funds and shared benefits (Burningham et al., 2006).

However, there is no evidence to show that benefits to communities will lead to less public opposition to proposed RE developments. Payment can be seen as a bribe, particularly if it is offered when the dispute between the opposition and developers has already begun (Wolsink, 1994). 'Since the issue is one of building trust any act which might be perceived as bribery could have detrimental effects, whereas those which are seen to allow meaningful participation of local community members might serve to create greater community engagement, and perhaps community acceptance' (Aitken, 2010, p. 1838).

Some evidence suggests that, once money comes into the picture, people tend to be more self-reliant and less helpful to others (Vohs et al., 2006). Feelings of civic duty are crowded out by the offer of compensation (Frey and Oberholzer-Gee, 1997). Motivation crowding theory (Frey and Jegen, 2001) proposes that, when external incentives are offered, people's intrinsic motivations to act for the common good may be reduced. In effect, the outside inducement goes against the reciprocity norm and undermines a person's sense of social responsibility (Titmuss,

1970) and can ‘crowd out’ people’s intrinsic desire to act effectively and be civic-minded (Ostrom, 2005).

Local communities respond more to procedural, rather than material, fairness (Aitken, 2010). Procedural justice concerning the perceived fairness of the decision-making process, and distributive justice, concerning how the distribution of the costs, risks and benefits are perceived, are important. The fair distribution of benefits is crucial because, if handled badly, benefit provision can increase tension between community members, and it can also cause opposition to community run projects (Goedkoop and Devine-Wright, 2016).

A study of shared ownership has shown that, while the concept is widely supported, in practice it poses significant challenges. Questions arose as to whether it should be optional or mandatory, and there was an obvious lack of trust between developers and community actors. Developers expressed skepticism about the representativeness of the local actors, and their capacity for involvement, while community actors saw the developers as only using communities to get their planning permission. For shared ownership to become a more acceptable option, policy will have to become more stable and supportive and a way will have to be found to identify and involve local partners and to build trust between both parties at an early stage (Goedkoop and Devine-Wright, 2016).

An examination of the views of different stakeholders, including developers, activists, consultants, politicians and members of the general public (Cass et al., 2010), towards the idea of community benefits has shown that they generally accept the principle but the exact method of providing them remains an issue. Furthermore, the public is highly ambivalent about the benefits on offer and why they are being offered. Developers were keen to stress that they were not paying compensation but were acting as ‘good neighbours’ and sharing the rewards, as part of their policy of corporate social responsibility. The notion of bribery arose in most of the discussions and was seen as a constant tension, particularly in relation to when the benefit is negotiated and offered, and questions were asked as to who should administer a community fund. Would the reputation of local groups who are picked for the task be tarnished? It was concluded that ‘there is much questioning, much scepticism and a significant degree of dismissal of the

significance of any local benefits that are being offered or claimed…The sensitivity of developers, as to how and when benefits are made part of local debates and how their motives are understood, therefore appears both necessary and well founded' (*ibid* p. 270). The study also found that, in general, focus group participants presumed that the energy from any RE installation in their area would directly supply their locality and so should result in cheaper household bills. While acknowledging that it is currently not an option, the authors suggest that if a way were found to do this it would be an important development.

Community owned renewable energy projects, where the local community is actively involved in the exploration, planning, and development stages, and where it benefits from any profits, are often seen as been the panacea for local support and acceptance. However, as explained in more detail in Chapter 2, while community owned energy initiatives can foster a sense of engagement and civic duty and help to develop local resilience, solidarity and social cohesion, the expectation that the community energy approach will automatically avoid local resistance and conflict is not always realized. Full community control is resource intensive, time consuming, and involves a lot of organization and administration. It may be difficult to get local people on board, and of those who do get involved, many are reluctant to take on leadership roles. Willingness to volunteer is much higher than the willingness to invest financially. Different models of community ownership can be seen as being more, or less, inclusive, with share ownership, as opposed to community trusts or charities, running the risk of satisfying only the people who can afford to invest. Neither does the involvement in community energy necessarily ensure that participants no longer object to large scale developer-led projects in their area.

2 COMMUNITY ENERGY AND THE CONTEXT OF COMMUNITY ENERGY IN IRELAND

This chapter explains 'grassroots' initiatives and gives an overview of community energy, and its benefits and challenges. The chapter then focuses on the contextual and policy background to community energy in Ireland, including relevant policy developments from 1999 until 2015, and the roles played by the Sustainable Energy Authority of Ireland (SEAI), the Citizen's Assembly and the Transition Towns movement. A table is provided at the end of the chapter giving details of community energy initiatives established between 1986 and 2010 – out of the 14 listed projects, only 3 appear to be still operational.

2.1 COMMUNITY ENERGY

2.1.1 'GRASSROOTS' INITIATIVES

The current focus on collective action and transition theory has led to a renewed interest in local, community and 'grassroots' initiatives and on 'grassroots' social innovations. The term 'grassroots' refers to activity which is led from the bottom-up by civil society, as opposed to being driven from top-down by governments or other agencies (Klein and Coffey, 2016). A bottom-up approach describes programmes and projects which involve direct representation, full participation and empowerment of the people affected by the intervention, while a top-down approach describes interventions where the people are in the position of consumers or customers. Empowerment can result from top-down approaches, but it is likely to be psychosymbolic. The intervention may help people to increase their self-esteem, or enhance their coping mechanisms, but it is unlikely to develop their ability to act for themselves and the emphasis is more on individual rather than collective behaviour (Couto, 1998). If a top-down commitment is to be real, the process must be transformative for both the outside agency and the 'weaker' partners. While external agencies 'may genuinely desire the people's empowerment, they may find it rather uncomfortable when empowerment actually occurs' (White, 1996, p. 152).

Grassroots groups can be differentiated from grassroots services, but both are integral to empowerment and participation. Grassroots groups are involved in community organizing,

lobbying and influencing, and they address power directly and risk conflict, while grassroots services express a preference for community development, which involves mobilizing resources for the voluntary provision of a service themselves. Both grassroots groups and grassroots services rely on organizations to work on their behalf at a higher level (Couto, 1998). Grassroots groups, projects, or innovations are more likely to be guided by social, rather than financial motives (Martiskainen and Heiskanen, 2016). They generate novel solutions for sustainable development in response to the local situation, and the interests and values of the communities involved (Seyfang and Smith, 2007). Community energy groups are one example of a grass-roots approach which shows promise, and can have tangible benefits, if given the appropriate supports (Hargreaves et al., 2013a, Seyfang and Haxeltine, 2012, Seyfang et al., 2013).

However, the idea that social change can come from the grassroots is an ideological position that is contested by some worldviews (Middlemiss and Parrish, 2010). Onyx and Dovey identify three different ideologies:

- *Structural functionalism* (science is value neutral and the prevailing social order a given fact)
- *Radical structuralism* (human agency has little power as change is driven by an evolving social structure)
- *Radical humanism* (collective human agency is central to the move towards a more just and equitable society).

Only radical humanists endorse action at a community level (Onyx and Dovey, 1999, Middlemiss and Parrish, 2010).

2.1.2 OVERVIEW OF COMMUNITY ENERGY

Community energy involves ‘citizen and local ownership and participation in renewable energy generation, distribution and energy efficiency’ (Friends of the Earth et al, 2014). According to a UK government report (DECC, 2014, p. 20), it includes ‘community projects or initiatives focused on the four strands of reducing energy use, managing energy better, generating energy or purchasing energy’. The projects or initiatives often arise from the grassroots and share an emphasis on community ownership, leadership or control, and community benefits. The local community ‘participates actively in the planning, decision-making and/or exploitation of the

project and benefits from its revenues or other accomplishments' (Oteman et al., 2014, p. 2). In principle, community energy should create opportunities for all types of communities beyond the choice few (Catney et al., 2014).

It is generally agreed that the catch-all definition allows for flexibility in relation to approach, participation and implementation (Hargreaves et al., 2013a, Seyfang et al., 2013, Friends of the Earth et al, 2014). It also facilitates experimentation (Walker and Devine-Wright, 2008). The lack of any required structure or outcome enables groups to respond to local contexts, conditions and needs, as well as the beliefs and aspirations of their members. As there can be a disconnect between groups that concentrate on behaviour change and energy efficiency and those involved in generating small scale renewable energy, lumping them together in a 'community energy niche' could even be counterproductive as their differing needs and challenges go unaddressed (Hargreaves et al., 2013a). However, one downside of the catch-all definition, is that problems can arise locally if projects are labelled as community yet do not have direct community involvement, ownership or gain. Resentment can be created if local people feel they are getting nothing out of it, except what they perceive as dis-benefits, or if they feel that big business is making money under the community banner (Walker and Devine-Wright, 2008).

'Community energy is not reducible to a single entity' (Seyfang et al., 2013, p. 988). Research (Walker and Devine-Wright, 2008) demonstrates that projects differ depending on who initiates and runs them, who participates and makes the decisions, who benefits both socially and, if profits arise, financially. Groups can be non-profit, with charitable status and no business interests, or they could be centred around a public building such as a community centre. Local people may have a financial stake, or shares, or be part of a community co-operative. For some groups, the process is key, and requires that local people are involved in the planning, initiation, development and running of the project. Principles relating to social capital, social cohesion, empowerment and resilience are important. For others, the outcome is the main driver. The project could be established and run by an existing local organisation, or authority, so long as the community benefits from the results. Some groups may not be too worried about the process by how, or to what extent, the community is involved. For them, the emphasis is more on getting the project up and running and producing results.

A distinction is often made between place based energy communities and communities of interest where investors may come from outside the area (Walker, 2008). Although many groups have ambitions to grow, others are happy to continue as they are and to remain small. Demand side activities tend to involve members of the local community and greater local buy-in (Burchell et al., 2014), whereas projects which produce renewable energy are usually run by a small group of committed people (Walker and Cass, 2007, Seyfang et al., 2013). Not all community energy projects 'wish to scale-up and correct the failures of incumbent energy regimes. Community activism borne of frustration with energy regimes can be considered symptomatic of problems with centralised, corporate energy systems, and where institutional reforms to decentralise and democratise energy services would be welcomed' (Smith et al., 2016, p. 425).

People who invest and participate in community energy groups are often 'innovators' who are not afraid of risk and of experimenting with new or unproven technologies. Many are 'early adopters' who, once they see a clear benefit, enjoy the challenge of trying out these new technologies during their growth phase (Bauwens, 2016). The 'local project champions' who set up and run the groups are usually determined and active, and they sometimes have enough skills, confidence and knowledge to drive the organisations forward, but in many cases they lack the relevant technical, financial, administrative and organizational competencies (Ruggiero et al., 2014, p. 59). Ideally the key committed people who are essential to success are supported by competent agencies (Walker, 2008). These 'innovative entrepreneurs' need to be strong, committed to their vision, and willing to take risks in order to overcome the range of problems, refusals, and challenges they meet along the way (Süsser et al., 2017).

2.1.3 BENEFITS OF COMMUNITY ENERGY

Community energy projects are seen as being conduits for the spread of sustainable energy awareness and knowledge, and the promotion of energy related behaviour change (Seyfang et al., 2013). Benefits can accrue to the local community in the form of lower energy costs, job creation and investment, the fostering of a sense of engagement and civic duty, the development of resilience, stronger local networks which contribute to social cohesion, and the influencing of policy. Community energy contributes to a greater understanding of energy generation and

efficiency, and empowers people to make informed decisions around their energy use (Klein and Coffey, 2016, Friends of the Earth et al, 2014). Involvement in a local energy initiative can increase people's understanding and acceptance of renewable energy per se (Walker and Devine-Wright, 2008) and allows for local control of decisions around siting, size and scale (Walker, 2008). It is proposed that a degree of community ownership and gain can go a long way towards fostering approval for local renewable installations (Warren and McFadyen, 2010, Devine-Wright, 2005, Bauwens, 2016, Walker, 2008). Community owned models in the UK have shown that when people have the chance to become shareholders and create their own energy they become much more creative about using the profit for 'mutual and social benefit' and profits remain within the area (Julian and Dobson, 2012). Community energy groups can also have a key role in supporting local authorities to cut their own carbon emissions (Pitt and Congreve, 2016). Many residents distrust energy companies or the government so community energy practitioners value the fact that their projects are local and non-commercial, as this contributes to the levels of authenticity and trust (Burchell et al., 2014, Wiersma and Devine-Wright, 2014).

People may join community energy projects because they are concerned for the environment and want to encourage the development of renewable energy (Kalkbrenner and Roosen, 2016, Bauwens, 2016). Whereas people in the private sector focus on financial, technical, and physical issues and the importance of local infrastructure, community actors, as outlined above, are more likely to emphasise aspects such as quality of life, the strengthening of community ties and social cohesion, and themes such as trust and empowerment (Devine-Wright and Wiersma, 2013). Community energy groups rely on a high degree of interpersonal trust, which is facilitated by direct social contact and face-to-face interaction. Group identification fosters co-operative behaviour, volunteerism and local participation. (Kalkbrenner and Roosen, 2016, Bauwens, 2016). However, the expectation that the community energy approach automatically involves collaboration, cohesion and trust relies somewhat on the belief that communities are cohesive, organized and unproblematic, but they 'can be transient and dynamic and fracture as events unfold and relationships evolve' (Walker et al., 2010, p. 2658).

Community energy initiatives can be driven by community place attachment involving emotional ties, shared meanings and experiences and a collective desire to protect and improve one's

community (Süsser et al., 2017). The common rootedness of the people involved, the sharing of the same socio-historical context and experience, locally attached project leaders and the direct management by community members has been found to play a vital role in generating credibility and trust in relation to the implementation of community-based renewables (Süsser et al., 2017). 'Community energy projects can facilitate solidarity with the community, but solidarity can also be the outcome of projects' (Kalkbrenner and Roosen, 2016, p. 62). Different types of community energy initiatives have different effects on different kinds of people – there is no standard impact. It can depend on the sustainable lifestyle history of the person involved, on the nature of their involvement, the cohesiveness of the organization and the type of activities they run. People who are more actively engaged are more likely to change their behaviour than those who are more peripherally involved (Middlemiss, 2011).

2.1.4 COMMUNITY ENERGY CHALLENGES

Upscaling and Long-Term Viability

The community energy sector began to emerge in the UK in the mid 1990's, with a rise in new groups from 2006 until 2009, followed by a gradual decline (Seyfang et al., 2013). UK government policy began to focus on community owned generation of renewable energy between 2000 and 2003 (Walker et al., 2007). According to the UK's Community Energy Coalition (UKCEC, 2019), over 5,000 community groups have been involved in energy initiatives over the past five years. In research involving a survey of 190 UK community energy groups, Seyfang et al (Seyfang et al., 2013) noted that the community energy sector in the UK is primarily grass-roots and citizen-led, with groups emerging from bottom-up rather than top down. 59% were established by individuals and a further 34% by pre-existing groups. 89% of those surveyed identified themselves as being *communities of place* rather than *communities of interest.* 82% of the groups were involved in the generation of renewable energy and 86% in energy conservation, with 68% of groups saying they were focusing on both. Seyfang et al. concluded that, while they are 'cautiously optimistic' for the development of the community energy sector in the UK, there are inherent tensions in the community energy model. They question the ability of groups to *scale up,* and to become more professional and commercial, especially if they continue to operate on a voluntary basis. 79% of the projects surveyed were less than five years old, and the average

age of groups was just over four years, which raises certain questions about their long-term viability. The researchers concluded that balancing the needs of members and supporters with the complications of the tasks involved can be difficult without external sources of finance and support, and consistent policy backing. The growth potential of voluntary groups is uncertain. The diversity of the sector and its focus also means that government departments need to work together to ensure best performance - the outcomes cannot just be measured in kilowatt hours. Therefore, it is their contention that community energy will not necessarily be a policy maker's short cut to widespread change.

Similarly, findings from research (Cogan, 2017) carried out on two Irish community energy projects - Erris Sustainable Energy, established in 2014 on the north west coast of Co. Mayo, and the Energy Communities Tipperary Co-operative (ECTC) which began in Drombane, Co. Tipperary in 2010 – suggest that, while community energy initiatives can play a vital role in initiating societal climate action in Ireland, the sector will not flourish without clear political encouragement and realistic support. Financial barriers need to be overcome. Existing Sustainable Energy Authority of Ireland (SEAI) retrofit grants need to be multi-annual and designed to meet community needs and a heavy reliance on voluntarism is not sustainable in the long term, particularly if groups are expected to upscale.

A community energy project producing renewable energy has to deal with many complexities, including acquiring funding and planning permission and access to the grid, achieving economic and technical viability and covering maintenance costs (Walker, 2008). Institutional and infrastructural factors, including regulations, subsidies, market conditions and government policy have an important constraining or enabling impact on the community energy sector (Oteman et al., 2014). Renewable energy initiatives are 'unlikely to become widespread without greater institutional support' (Rogers et al., 2008).

Replicability

It is not an appropriate policy goal to seek to develop a 'community energy niche' as different projects have diverse aims, and face very different challenges (Hargreaves et al., 2013a). Neither can it be assumed that a successful energy project can just be copied from one place to another.

There is a danger that policies which work on the 'one size fits all' basis will inevitably overlook important social, cultural and locally contextual differences (Devine-Wright and Wiersma, 2013). 'What is possible in one context, may not be elsewhere and in this sense understanding the social context of innovation and technology diffusion is just as important as its technical dimensions' (Walker et al., 2010, p. 2662).

Gender Disparity

There is a gender disparity in many community energy groups, particularly those that are creating their own energy. A study of thirteen community energy initiatives in the Netherlands showed that ten (77%) of the groups had been set up by men, while in four cases (31%) all of the group members were male (Van der Schoor and Scholtens, 2014).

Public Involvement

As already outlined, engaging people in climate action has been particularly difficult because the impacts are often seen as being global, uncertain, occurring in the future and not personally relevant (Gifford, 2011). Even when climate change is accepted as important and relevant it has to compete with other more immediate problems (Scannell and Gifford, 2013), and for many people energy is an invisible, taken for granted, part of their everyday lives (Sovacool, 2009). Community energy initiatives are promoting practices which run contrary to a 'wider unsustainable regime' (Seyfang and Haxeltine, 2012) at a time when public awareness and interest in energy is low and it is not clear if they are willing or able to take on the active role of 'energy citizenship' on offer. While grassroots innovations are motivated by 'push factors' coming from specific people inside a community, they also require 'pull factors' coming from the government and the wider community (Tanimoto, 2012, p. 70, Süsser et al., 2017). It is important for community energy practitioners 'to acknowledge that, while notions of community and collective action might be appealing to them, this is not always the case among the broader local population' (Burchell et al., 2014, p. 175).

The data also shows that, while the idea of community energy has popular appeal, people are dubious about whether full community control is viable. While they may be willing to participate they are reluctant to take on leadership roles and prefer 'more reactive than proactive forms of

involvement' (Rogers et al., 2008, p. 4225). Groups are challenged by the time that has to be given to organization and administration, keeping members on board and maintaining the interest and support of the local community (Van der Schoor and Scholtens, 2014). Even in Germany, where many people have a positive attitude towards community energy projects and the local production of energy, a large percentage of a research sample was undecided about how they viewed community energy, and their willingness to volunteer was much higher than the willingness to invest financially (Kalkbrenner and Roosen, 2016).

Public Acceptance

It is often assumed that community energy initiatives, which involve local people as participants and possibly as investors, will attract greater levels of support than large scale developer led projects, but this is not necessarily the case (Walker and Cass, 2007, Rogers et al., 2008). Interviews with members of community energy projects in seven European regions demonstrated that in many cases community ownership was associated with community support. However, almost 10% of the projects experienced local conflict and resistance (Ruggiero et al., 2014). Different models of community ownership in a local area can impact on local acceptability and perceptions of inclusivity – for instance, share ownership may only benefit people who can afford to invest, and this can cause local problems, whereas community trusts or charities are seen to be acting on behalf of the whole community (Walker, 2008).

Neither is it the case that involvement in community energy will ensure that people will no longer object to large scale developments. 'The same person might quite reasonably be a protestor against a large-scale wind farm proposed by an internationally owned utility and, at the same time, an active participant in a community hydro project in the same locality, and producer in their own home' (Walker and Cass, 2007, p. 466). There may not be a willingness amongst community energy practitioners to engage with all kinds of people and to be accepting of divergent views. Some advocates of community energy can be so convinced that their arguments are right that they are unable to accept or listen to different opinions. 'It is almost as if the stereotypically rosy connotations of community in concert with the imperative of decarbonisation render all other opinions misguided at best and representing vested interests at worse' (Burchell et al., 2014, p. 175). Activities around energy efficiency and conservation do not seem to create

the obvious conflicts or divisions which can arise around the community ownership of renewable energy projects – largely because they do not involve amenity loss, and the distribution of profits (Burchell et al., 2014).

2.2 IRISH POLICY ON COMMUNITY ENERGY

2.2.1. POLICY DEVELOPMENT (1999-2004)

The European Commission's 1997 White Paper on Renewable Energy was followed in Ireland by the Green Paper on Sustainable Energy (1999). The Green Paper called for the installation of 500MW of additional generating capacity from renewable energy sources, mainly wind, by 2005, and it also strongly endorsed the production of renewable energy 'to meet one's own needs' and the development of projects by local cooperatives and other representative organisations (REP, 2004, p. 13).

In early 2000, the state appointed Renewable Energy Strategy Group produced a *Strategy for Intensifying Wind Energy Deployment* (Fitzgerald, 2000, p. 88), which noted that part of the challenge of increasing local involvement in wind energy development was that it would involve a significant change in policy direction. 'Wind energy development has followed a focus of specific targets being met at minimum cost through competitive means. While this approach has not excluded local involvement it has not encouraged it either'. The study listed possible options to encourage local involvement including: fixed prices; net metering for wind energy projects up to 100 kW; and regulations (e.g. planning) to favour locally owned projects. Before deciding on options, the report noted it would be useful to 'first decide whether the objective is to reduce the number of objections to large wind farms at the planning stage or to increase local participation in wind energy development' (Fitzgerald, 2000, p. 88).

Essentially, the government needed to decide what it wanted. This sentiment was reflected in March 2000 in a letter to the Irish Times from Séamus Ó Drisceoil, Comhdail LEADER 11 Officer, *Oileán Chléire*, Cork (O'Drisceoil, 2000).

'……Comdháil Oileáin na hÉireann [Irish Islands Federation] *and others have made repeated submissions to the Green Paper on Energy and elsewhere on the need for continuous access to the grid for small wind-power projects which could be promoted by individuals or communities. Given the right scheme we could have communities embracing wind power on a vast scale rather than uniting to oppose projects. So far absolutely nothing concrete has been achieved in this area.*

Here on Oileán Chléire and neighbouring Bere Island we have full planning permission and funding available for small 0.5MW wind projects. We could be in production within six months. This exercise could be repeated throughout the country as communities and farmers see the benefits of wind energy. The technology is tried, tested and absolutely reliable.

So far our access to the grid has been blocked while the Department look to unproven and vastly more expensive technology which is, apparently, to be placed in "someone else's back yard".

Not good enough!'

Both the Oileán Chléire and Bere Island wind projects subsequently collapsed.

By 2003, there were only two community owned wind energy projects in Ireland - Three 225kW turbines on Inis Meáin, Co Galway, and a 660kW turbine installed by the Burtonport fishing co-operative in Co Donegal – which stood in stark contrast to Denmark where a total of 377 turbines had been installed in one year, between 1979 and 1980, and wind power guilds had been set up all over the country, drawing on a rural cooperative tradition similar to that in Ireland (REP, 2004).

In 2004, the *To Catch the Wind* report was produced by the Renewable Energy Partnership (REP), comprising two Co Mayo community wind groups and the statutory Western Development Commission (REP, 2004). It noted that Danish communities became involved in wind energy at a time when the technology was in its infancy and the turbines and wind farms were too small to interest large developers, whereby allowing small locally-financed community projects to flourish. A significant shift in government policy and a degree of protection was required if Irish communities were to gain a similar share of wind energy development. The report called for a feed-in tariff, free access to the grid, state support and incentives, and a 'one-stop-shop' for community groups needing expert technical, legal and financial advice on wind energy projects. In the absence of progress on this, the advice from the REP to communities was

stark – don't invest in wind energy projects 'as the level of risk and uncertainty is currently too high'.

2.2.2 2007 WHITE PAPER ON ENERGY

The Government's 2007 White Paper on Energy (DCMNR, 2007) acknowledged that submissions in the Consultation Process on the Green Paper had widely endorsed the development of 'greater community involvement in renewable energy initiatives' (*ibid* p.15). The White Paper stated that constraints exist to the development of renewable energy technologies and meeting RE targets including 'planning, and the issues of public acceptance and local community support' and that these 'will be tackled through coordinated national, regional and local approaches' (*ibid* p.35). However, there was no reference to the development of community involvement in renewable energy projects or the elimination of barriers.

2.2.3 POLICY DEVELOPMENT (2009-2014)

In 2009, the Electricity Supply Board of Ireland (ESB) introduced a pilot microgeneration scheme which facilitated the payment for renewable electricity produced by householders or farms. The scheme was run through ESB's retail arm, Electric Ireland, and was not replicated by other energy suppliers. It ended after five years in 2014 (Melia, 2014).

In 2011, the Sustainable Development Council, *Comhar*, released a report called *Community Renewable Energy in Ireland: Status, Barriers and Potential Options* (Comhar, 2011), which reiterated the four main barriers to community renewable energy in Ireland – insufficient policy framework; inadequate support structures; lack of access to finance; and grid and planning delays.

A background paper to the 2012 National Economic and Social Council Report (NESC, 2012), *Social and Behavioural Aspects of Climate Change* (Moore, 2012), noted how international experience suggests that a greater level of local ownership of wind energy projects is an important option for maximizing local benefits. Again, it emphasised the challenges faced by

groups, as exemplified in the 2011 *Comhar* report, of obtaining finance, securing planning permission and accessing the grid and noted that, while community renewable energy had been mentioned in several government documents, specific measures to increase community involvement and reduce barriers had not been outlined.

In 2014, the NESC Report *Wind Energy in Ireland: Building Community Engagement and Social Support NESC* (NESC, 2014) stated that, as part of an inclusive community engagement process to shape and share local value of wind development projects, national policy supports and measures should include 'incentives and measures for promoting community [and] co-operative energy schemes and new financial mechanisms for public investment in renewable energies' (*ibid* p. 5).

The 2014 *Green Paper on Energy Policy* (DCENR, 2014) posed the questions – 'How can we encourage citizens to be part of our transition to future energy paths and the policy-making process that goes with it? Given the scale of changes needed, what are the right mechanisms to engage citizens?'

2.2.4 2015 WHITE PAPER ON ENERGY

In 2015 the Energy White Paper, *Ireland's Transition to a Low Carbon Energy Future 2015-2030* (DCENR, 2015a), was published and for the first time it seemed that policy makers were really beginning to take the issue of citizen and community engagement in the energy transition seriously. 'The transition will see the energy system change from one that is almost exclusively Government and utility led, to one where citizens and communities will increasingly be participants in energy efficiency and in renewable energy generation and distribution…Community-level energy efficiency and renewable energy projects, using a range of technologies, will play an important role in the energy transition…There will be opportunities for communities to collaborate, including with local government and energy agencies, to develop community energy efficiency and renewable energy projects' (*ibid* Chapter 4).

The intention to address the challenges and barriers was very clear: 'We acknowledge the need to develop mechanisms and instruments to make this happen. We will work to widen the opportunity for participation by: facilitating access to the national grid for designated renewable electricity projects, and developing mechanisms to allow communities to avail of payment for electricity, such as the ability to participate in power purchase agreements; providing funding and supports for community-led projects in the initial stages of development, planning and construction. These will be defined using criteria such as scheme size and degree of community ownership; supporting, in particular, the emerging energy co-operative movement as one means of facilitating community participation' (*ibid* p. 45).

2.3 ROLE OF THE SUSTAINABLE ENERGY AUTHORITY OF IRELAND (SEAI)

In 2007, the state sponsored body, *Sustainable Energy Authority of Ireland* (SEAI) was granted five-year funding under the EU Concerto II Programme for the HOLISTIC (Holistic Optimisation Leading to Integration of Sustainable Technologies in Communities) project, involving two Irish and four European partners. As part of this, the Dundalk 2020 project was established with the aim of being an 'exemplar community' which would stimulate a national move towards sustainable energy practice both in Ireland and Europe, through demonstrating how different energy technologies and techniques can be used in an intelligent and integrated way within the community and how the public sector, private sector and local communities can work together to achieve energy targets.

The Dundalk 2020 project ended in 2013 but the experience informed the setting up of SEAI's Better Energy Community (BEC) scheme which aims to support innovative energy efficiency projects at a community level. This is a competitive programme which piloted in 2012 and now runs annually.

In 2011, SEAI put out a call for local authorities to partner with local groups and apply to become part of a national Sustainable Community Energy Programme - 'to act as a catalyst on the ground to help stimulate a national move towards sustainable energy practice and to deliver

national energy targets' (SEAI, 2011). SEAI selected three communities – Kerry, Dublin City and South County Dublin (Tallaght).

In April 2016, SEAI re-launched their Sustainable Energy Communities (SEC) Programme, but this time put out an open call for local communities to become SECs and to join the SEC Network. A 'Sustainable Energy Community' is a *'*community in which everyone works together to develop a sustainable energy system for the benefit of their community. To do so, they aim as far as possible to be energy efficient, to use renewable energy where feasible and to develop decentralised energy supplies. An SEC can include all the different energy users in the community including homes, sports clubs, community centres, churches and businesses.' The SEC Network is a *'*support framework designed to enable a better understanding of how communities use energy and to save energy across all sectors. The Network's core purpose is to catalyse and support a national movement of SECs operating in every part of the country. There are now SECs operational across all regions of Ireland. Being a member of the Network enables SECs to engage and learn from project site visits, seminars, events, and case studies*'* (SEAI, 2018c).

In June 2019, the SEAI website stated that over 200 Irish communities were involved in the SEC Network.

2.4 THE CITIZENS' ASSEMBLY

In the autumn of 2017, the Citizen's Assembly (Citizens Assembly, 2018), comprising a chairperson and 99 citizens randomly selected to be broadly representative of the Irish electorate, met over two weekends to deliberate *How the State Can Make Ireland a Leader in Tackling Climate Change.* The group focused on the areas of energy, transport, agriculture, international best practice, and existing national policies and activities. Thirteen recommendations, including the following two, were reached by majority vote and were presented to the Houses of the *Oireachtas*[1] in April 2018. 99% of the members recommended that *'*the State should enable,

[1] The Oireachtas is the legislature of Ireland, and consists of the President of Ireland, Dáil Éireann (lower house) and Seanad Éireann (upper house)

through legislation, the selling back into the grid of electricity from micro-generation by private citizens (for example energy from solar panels or wind turbines on people's homes or land) at a price which is at least equivalent to the wholesale price'. 100% of the members recommended that 'the State should act to ensure the greatest possible levels of community ownership in all future renewable energy projects by encouraging communities to develop their own projects and by requiring that developer-led projects make share offers to communities to encourage greater local involvement and ownership'.

2.5 TRANSITION TOWNS

From 2006 until about 2009, spurred on by the leadership of the founding group, Transition Town Kinsale, Transition Town (TT) groups sprang up around Ireland, and became a global movement, spearheaded by the setting up of the Transition Network by Rob Hopkins in Totnes, England. Transition initiatives are set up and run as grass-roots organisations based in villages, towns and cities. The movement is based on four assumptions: lower energy consumption is inevitable and so must be planned for; communities and infrastructure lack the resilience to weather the shocks; collective action is essential now; through creativity and proactive design ways of living can be created that are more connected, enriching and sustainable (Hopkins, 2008b).

There is a strong emphasis on the development of new practices, as well as the rediscovery of old ones, through re-skilling. However, while the TT movement has been successful in spawning groups across the UK, it has been less effective here in Ireland, and, even in the UK, is having difficulty in scaling up (groups regularly report a difficulty in expanding beyond a core of committed green activists), and in translating the message into effective actions within the wider community (Haxeltine and Seyfang, 2009). While there is no clear database of Transition Towns, past or present, in Ireland, an internet search in the spring of 2018 determined that out of nineteen TT groups with an internet presence, six were currently active, and thirteen appeared to be dormant or have ceased operations.

2.6 COMMUNITY ENERGY INITIATIVES IN IRELAND (1986-2010)

The following table provides a list of 'grassroots' community energy initiatives which have been developed from the bottom-up by local people (rather than by government or other agencies) between 1986 and 2010. It does not include the eight community energy groups in our research study. Information on the groups has been sourced from a number of documents, in particular, the 2011 *Comhar* report (Comhar, 2011), and *To Catch the Wind* (REP, 2004), and from an internet search. Out of the fourteen proposed projects only three appear to be currently operational.

START DATE	LOCATION	GROUP	AIM	ACTIONS	FUNDING	CHALLENGES	END RESULT
1986	Cape Clear Island, Co. Cork	Cape Clear Co-operative	To develop the first successful variable pitch wind turbines in Ireland, and to provide electricity for the island	Two 50ft 30kW turbines were installed on the island	German manufacturers, SMA Regelsystem Gmbh, provided the technology, and used project as test-bed.	Turbines proved to be uneconomical and required intensive technical servicing; underwater cable bringing electricity from the mainland was installed	Turbines went out of use in 1997
c. 1994, Plans announced in 2009	Mount Callan, Co Clare	West Clare Renewable Energy Ltd (WCRE) - 30 local farm families, with 3,000 acres of land; McCarthy Keville O'Sullivan (MCKOS) managed project through EIA and planning process	To install 29 3MW wind turbines on western slopes of Mount Callan	Progressed through feasibility stage; planning approved by An Bord Pleanala (2011); WCRE partnered with Brookfield Renewable Energy Group	Group was keen that the project be funded by local shareholders , but it appears that this did not occur	Grid connection system, local opposition	Windfarm comprising 11 N90/2500 turbines under construction (2017). Group has committed to funding 4 local communities, each receiving €100k initially, then €20k a year for 5 years, €10,250 annually for next 15 years and €5k annually for last five years, totalling approx. €378k for each parish
1995	Ballytobin, Co Kilkenny	Camphill Community Ballytobin (with 80 residents) set up Bio-Energy & Organic Fertiliser Services (BEOFS) to run the project; 4 people employed to operate the plant	To build an anaerobic Digestion/Biogas Plant for the Ballytobin Camphill community; to create work for residents & demonstrate centralised anaerobic digestion for first time in Ireland	Construction began (1996); project began fuelling a small district heating system (1999), using slurry from local farms & food waste from waste management companies	Investment by Camphill Ballytobin; Camphill Community real estate used for bridging loans; Rural Dev. Prog.; Eu Leader Prog. II; Eu 'Horizon'; EU 'Altener' ; gate fees funded 2 employees, 2 CE Scheme employees	Accessing capital funding; inability to obtain Power Purchase Agreement to connect plant to grid so, in warmer months, excess biogas had to be flared off	Ballytobin was one of 9 Camphill sites to benefit from SEAI BEC (2015) upgrades, which included a biogas CHP plant to generate electricity
1997	Cape Clear Island, Co. Cork	Cape Clear Community Council		Feasibility study for RE trail; interim report on energy conservation, recycling, waste mgmt & wind developments; enviro. reports on proposed upgrading of wind energy system; potential for other RE projects investigated; PP granted .5MW wind turbine; two energy managers trained	EU Partnership project under Regional and Urban Energy Planning Program ; Cork Co Co; Udaras Na Gaeltacht; LEADER	Accessing the grid	Project ended; wind turbine was not erected
Late 1990's	Inis Meáin, Co Galway	Inis Meáin Island Co-op	To create electricity to power desalination plant	Three Vestas V27 225 kW wind turbines installed to power a new desalination plant (2002)	EU - Fifth Framework; Údarás na Gaeltachta; Galway Co Co	Enviro. groups objected to original planning application; local co-op became mired in controversy and subsequently disbanded.	2011, the desalination plant closed down; turbines fell into disuse, despite efforts to bring them back into operation were dismantled for safety reasons.
c. 1999	Bere Island, Co. Cork	Wind energy co-op, with 200 island residents & part-time residents as €1 shareholders; 1 person worked on project for 18 months	To install 600kW Vestas wind turbine, linked to mainland grid; to use profits for island development projects	Obtained Power Purchase Agreement (AER 5) & planning permission	€100,000 raised from island sources	Failed to secure EU INTERREG and other funding; group unable to secure the €200,000 necessary for project viability; process very complex	Group lost momentum; project shelved (2003); turbine planning expired (2004)
1999	Freshford, Co Kilkenny	The 'Freshford Alive' formed by Freshford 2020 development group; reps of BNS Leader, Kilkenny Co Co and Tipperary Inst. project steering committee; full time consultant co-ordinator hired	Address village sewerage system sustainably, using local waste for CHP plant producing electricity for grid & gas for local heating, & to provide secondary sewage treatment using water hyacinths.	Feasibility study & development plan produced	EPA, SEI and LEADER (€20,000 for feasibility study); EU INTERREG (€41,799 for development phase)		Project appears not to have progressed; Freshford 2020 Rural Dev. Ltd dissolved sometime after Jan 2006

Table 1: Community Energy Initiatives in Ireland (1986-2010)

START DATE	LOCATION	GROUP	AIM	ACTIONS	FUNDING	CHALLENGES	END RESULT
PP granted in 2000	Ballycogley, Co Wexford	Wexford Wind Energy Co-op, in partnership with developer	To install four 3.5MW turbines on a 150-acre site at Ballycogley, with 2 turbines financed by developer, & shares for other 2 to be offered to local community with preference for those closest to site	Progressed through feasibility stage; planning permission granted in 2000	EU THERMIE grant; hoped to raise remaining funds through corporate tax relief scheme	High grid connection costs	Project did not proceed; Ballycogley Wind Energy Plc dissolved in 2007
2002	Killala, Co Mayo	Killala Community Wind Farm Ltd (8 farmers, 3 directors and 17 shareholders), in partnership with Killala Community Council (KCC), with assistance from Western Dev. Commission (WDC); WDC assigned rural development worker to work on project	To develop a 23 MW community wind farm and encourage local people to invest through a number of 'investment vehicles'	Project team (2 KCWF directors, KCC dev. manager, 2 KCC members, WDC rural dev. worker) (2006); WDC provided initial project co-ordination, facilitation, technical & management expertise, Assisted with provision of information to public; planning application submitted (2007); 45 people objected ; An Bórd Pleanála refused permission; PP granted (6 turbines, 2010)	Farmers provided initial seed funding; SEI (feasibility phase & €39,000 to document how local communities can become involved in wind energy); WDC	Lack of explicit policy supports; complexity of RE projects; negative media coverage of wind; length of process strained community resources & entrenched 'anti' positions; difficult to demonstrate benefits to wider community; difficult to identify appropriate inclusive & representative community; difficult to communicate between parties	Killala Renewable Production Limited ("KRPL") (parent company of KCWL) & Gaelectric Developments Ltd joined forces (2015) & applied for modifications to 2010 permission (2017); applicant intends to give €1,000 per MW to a community fund each year
2003 (operational)	Burtonport, Co Donegal	Burtonport Fishermens Co-Op	To provide electricity for fish ice plant	One Vestas V47 660kW wind turbine installed			This turbine remains in operation.
2006	Co Waterford	Waterford Renewable Energy Co-operative Society Ltd (established by Waterford Co Co & Waterford Energy Bureau)	To be a pilot rural self-supply co-operative & develop a number of RE initiatives (bioenergy & wind) for the benefit of its members	Co-op secured 52 members; was facilitating the development of bio-energy projects & 3 community wind farms (2012)	Energy Self-Supply in Rural Communities (ENSRC) supported by Intelligent Energy Europe (IEE).		No more on-line info on this group; their website has been disabled
2008	Kinsale, Co Cork	Transition Town Kinsale	Sell electricity to national grid, generate heat for use locally, and use bio-waste as agricultural fertilizer	To develop a community run anaerobic digester, converting local farm/food waste into locally used energy	West Cork Dev. Partnership (€10,000 to determine project viability); Rethink, Recycle, Remake (Rx3) programme	Finding site; lack of interest by locals in home heating option; changed focus to providing gas for local vehicles, but local farmers not interested in any capacity	The project is currently dormant.
2010	Ballylaneen, Stradbally, & Bunmahon, Co Waterford	BSB Community Energy Ltd, established by two local landowners, with local committee, 50 local shareholders	To erect 11 wind turbines producing up to 33MW of electricity, & to set up a community owned company	Investors were acquired and plans progressed over next 4 years, but there was no public consultation		Local opposition group 'Mahon Valley Against Turbines'; protest meeting held in Nov 2016 with over 600 attendees	Community energy consultant appointed; public meeting held, too late as strong opposition mobilised (July 2017)BSB withdrew wind farm proposal (Aug 2017); deep divisions locally
2010	Ballynagran, Co Wicklow	Ballynagran Community Energy Plus Project run by Zero Carbon Ltd; project manager worked on project	To become the world's first Zero Carbon Community within 15 years, by reducing energy use, creating an energy independent region, producing RE locally, creating sustainable local employment & enhancing quality of life	Carried out local energy audits; substantial number of local houses retrofitted	Interreg IVD North West Europe; Zecos Project (Zero CO2 Emission Certification System); Wicklow Co Co; Greenstar Ballynagran Landfill Community Fund; Ballynagran Environmental Community Projects & Works Grant Scheme; SEAI; company donations; savings by bulk buying	Unsuccessfully applied to become one of SEAI's SEC's (2011); local objections to wind turbine proposal; high degree of complexity; lack of organizational experience and specialist skills; high capital costs of some schemes; financial risks involved; planning permission & planning delays; lack of interest & mistrust	PP granted by Wicklow Co Co for 500 KW wind turbine (2015); proposal invoked local objections; An Bord Pleanala refused permission (2016) due to absence of 'an overall strategy for the development of wind energy in this area...it is considered that the provision of a single wind turbine would represent a haphazard and uncoordinated approach'; this damaged group morale; current status unclear

3 KEY CONCEPTS

This chapter explores four key concepts underpinning my thesis: Energy Transition; Participation; Social Capital; and Capacity. It is shown that the *energy transition* from fossil fuels to renewable sources requires a move towards energy democracy and energy citizenship, within which community energy can play an important role. For this to happen, citizen *participation,* which fosters empowerment and the development of trust, is key. But rather than expecting people to make the changes on their own, it is now deemed more effective to work with them collectively, in communities. *Social capital* is the 'glue' that holds communities together, and incorporates the norms and networks which enable collective action. Community energy can benefit from the existence of, and contribute to, strong social capital in the area, but it can also be adversely affected by negative social capital. The findings from my research, and exemplified in the data, indicate that the focus now needs to be shifted from social capital onto the level of *capacity* the energy communities possess, which will determine whether they are able to thrive and to benefit from 'good', and to withstand 'bad', social capital.

3.1 ENERGY TRANSITION

Especially difficult or 'wicked' (Rittel and Webber, 1973) problems occur if uncertainty exists both in relation to the facts and if it is not clear which normative values should be prioritised. 'Normative uncertainty renders controversial or ambiguous what kind of expertise should be enrolled to solve the factual puzzles, and the factual uncertainty renders unclear what the political debate should be conducted about' (Valkenburg and Cotella, 2016a, p. 3/4). Wicked problems are 'complex' as opposed to 'complicated'. Complicated problems require the involvement of, and coordination between, different types of expertise, but such problems can be broken into sub-problems and solutions can be replicated. On the other hand, complex problems are not reducible and it is not possible to reproduce the solutions because such problems 'emerge in evolving and adaptive systems' (Valkenburg and Cotella, 2016a, p. 10/11).

Complex problems require experimental approaches, one of which is transition management. 'The approach is by no means void of knowledge production, but emphasis is on learning by doing… frontrunners are to be enrolled, and iteration in the sense of revising short-term and mid-term goals in view of newly acquired experiences is key. In a more general sense, this type of approach is about activating people' (Valkenburg and Cotella, 2016a, p. 6). Transitions are 'complex and long-term processes comprising multiple actors' (Geels, 2011, p. 24). They are likely to be non-linear (Geels et al., 2016).

In the mid-1970's Amory Lovins (Lovins, 1976) proposed that the US had to choose which energy path it would follow for the next 50 years - the 'hard' or 'soft' one. The hard path was a continuation of the existing system which relied on the expansion of centralized technologies to increase the supply of energy, while the soft route would combine a serious and immediate commitment to energy efficiency, rapid development of renewable energy projects designed on a scale to meet end-use requirements and transitional fossil fuel technologies. The soft path would be decentralized, local, and accessible to all. Both paths would require social transformation, but the social changes involved in the hard path were likely to be 'much less pleasant, less plausible, less compatible with social diversity and personal freedom of choice, and less consistent with traditional values' than those required by the soft path. (p. 91). In Lovins' view the two paths were mutually exclusive. By changing social structures and values, the machinations of the hard path would make the requirements of a soft path ever more difficult to imagine and to achieve.

We have now entered the last decade of Lovins' 'next 50 years' and, while there are many opinions as to how far down which path the US and the world have gone, there is no doubt that an energy transition is underway. The term 'energy transition' is now widely used in research, policy and campaign discourse around climate change, carbon emissions and energy use. The idiom has been incorporated into Irish national energy policy through the 2015 Energy White Paper. 'Achieving our energy transition…will be a huge collective national undertaking. It will depend on the active engagement of citizens and communities. It will also require a deeper national awareness of the nature and scale of the challenge, and the development of consensus about the broad policy measures required to meet it' (DCENR, 2015a, p. 44).

But transitions are unlikely to be linear (Geels et al., 2016) and there can be unintended consequences (Toffler, 1980). As innovation theory suggests, some innovations can be introduced quickly, while others take time (Rogers, 2010). The evolution from 'wide speculations' to implementation poses 'practical and down-to-earth problems' (Geels and Smit, 2000, p. 875). Energy transitions pose complex governance challenges (Valkenburg and Cotella, 2016a). Radical technologies have difficulty breaking through regulatory, infrastructural, socio-technical barriers (Geels, 2002) and the entrenched 'lock-in' of systems (Geels, 2005). Transitions are shaped by social processes and practices which are hard to shift (Shove and Walker, 2010). The complexity of the politics involved is frequently underestimated (Shove and Walker, 2007) because there are so many actors and power dynamics in play (Avelino and Wittmayer, 2015). And, as we have seen, the public is being seriously challenged by the scale and the perceived impact of the renewable energy developments being proposed as part of this transition.

Energy transitions are complex because they involve many different actors, with different priorities, interests and interpretations of the end goals; there are so many different values involved; there are many uncertainties, particularly around the facts and what will happen in the future; there is no clear correlation between the production of knowledge and the production of policy decisions because of the many other power related influences, the fact that knowledge evolves, and reality is usually more complicated than knowledge allows. 'What makes things worse is the fact that such processes are inherently *reflexive:* any intervention made today will change the world of tomorrow. This means that uncertainties do not simply add up but reinforce each other exponentially. We do not know how the future system will behave, since we cannot be entirely sure what system we will build for the future…In practice, this reflexivity entails that we cannot easily predict the exact social situation in which future technologies will be embedded' (Valkenburg and Cotella, 2016a, p. 3).

'Energy consumption profoundly affects everything from how individuals work, play, socialize, and eat, to how industries cluster, how cities and economies grow, and how nations conduct their foreign affairs' (Laird, 2013, p. 150/1). Large-scale changes to an energy system involve more than shifting to new fuels and technologies. The interacting components of energy systems have

affected social, political and economic developments in complex ways and over several centuries. ‘Government policy-making institutions are not well equipped, even as an organizational matter, to put the social and political features of new energy systems into their analyses’ (Laird, 2013, p. 155). Therefore, the notions of social democracy and energy citizenship, which see energy as a ‘social necessity’, require that the public is involved, and engaged in energy policy-making and planning, whereby reflecting the Local Agenda 21 tenets of local empowerment, self-determination and participation. ‘Every citizen has a role to play in the energy transition’ (DCENR, 2015a, p. 40).

3.1.1 ENERGY DEMOCRACY

‘While the extent to which society should be included in forming energy policy and its implementation is highly contested, there is broad agreement that energy policy can no longer be the exclusive concern of public institutions and utilities’, which allows for the emergence of a concept called *energy democracy* (Mullally et al., 2018, p. 71) . Although energy democracy has no widely accepted standard definition (Hess, 2018), and it could be seen as a ‘political buzzword’ (Szulecki, 2018, p. 21), the energy democracy agenda seeks to ensure that democracy and citizen participation are at the forefront of the energy transition, and that renewable energy systems are planned democratically, are publically or community owned, and that they deliver tangible benefits to citizens (Burke and Stephens, 2018). Energy democracy challenges the techno-economic narrative which sees people as consumers, and instead emphasizes the involvement of the public as stakeholders (Mullally et al., 2018).

It is about the shift from central to local energy governance and innovative ways of thinking (Soutar and Mitchell, 2018), a democratic rather than an economic opportunity (Burke and Stephens, 2018). It envisages a new kind of *energy citizenship* (Devine-Wright, 2004), whereby individuals, co-operatives, and local communities can now invest and benefit from small scale, distributed renewable energy developments. In so doing they become ‘prosumers’, who, while not being energy self-sufficient, are simultaneously producers and consumers of energy (Szulecki, 2018). Energy citizens will play an active role in the transition to a low carbon energy future in the following ways: communities will work on energy efficiency initiatives and

renewable energy projects; the public and business sectors will set examples of best practice in sustainable energy; innovators will develop new models and technologies to help Ireland move to a low carbon energy system; entrepreneurs will avail of business opportunities in energy efficiency building work, clean technologies and innovative digital technology applications, creating jobs and increasing prosperity (DCENR, 2015a, p. 40).

Rather than being understood as a simple concept, energy citizenship should be seen as a 'discursive field that actors are attempting to shape in accordance with their interests', which is highly dependent on context (Mullally et al., 2018, p. 72). Energy democracy does not accept renewable energy in isolation – it asks how is it to be created, by whom, and for whom (Burke and Stephens, 2018). It is not enough to talk about energy infrastructures, energy security, or energy resources, without asking what this energy is for, who benefits, who gets to make the transition and who pays for it (Sovacool and Dworkin, 2015). Energy democracy is about developing more just and sustainable energy systems around the world (Becker and Naumann, 2017). It calls for 'energy justice', for 'a global energy system that fairly disseminates both the benefits and costs of energy services, and one that has representative and impartial energy decision-making' (Sovacool and Dworkin, 2015, p. 436).

Energy democracy advocates claim that opposition to large developer-led renewable energy installations should be seen as an appropriate response by citizens who reject the large-scale centralization of energy production and in its place want to see small, decentralized community owned developments (Burke and Stephens, 2018). However, there is a difference between 'weak' and 'strong' energy democracy. The weak version involves the opposition of large renewable energy developments, which in itself does not address the fundamental concerns around ownership and may only result in the project moving to a more remote location, whereby necessitating more long-distance centralized transmission of the energy. On the other hand, strong energy democracy 'may drive a more distributed energy system, redistribute and strengthen democratic political power, and ultimately result in an accelerated energy transition guided primarily at the community level' (Burke and Stephens, 2018, p. 88).

A substantial challenge for energy democracy relates to the growth dilemma. Energy democracy advocates question the ever-increasing consumption of energy, but there is a lack of clarity as to whether the concept promotes a de-growth strategy or supports the potential of renewables to drive further economic growth (Burke and Stephens, 2018). And a further challenge is the apparent lack of interest, or willingness of the general population to engage with, and get involved in, technically and financially complex, long-term energy projects. Many people do not see how such involvement is relevant or necessary, which therefore restricts the notion and power of energy citizenship (Devine-Wright, 2004, Rogers et al., 2008, Burke and Stephens, 2018).

3.2 PARTICIPATION

'Citizenship is a status bestowed on those who are full members of a community. All who possess the status are equal with respect to the rights and duties with which the status is endowed. There is no universal principle that determines what those rights and duties shall be, but societies in which citizenship is a developing institution create an image of an ideal citizenship against which achievement can be directed' (Marshall, 1950, p. 149/50). Citizenship is a 'relational concept'. It is 'a relationship between the individual and the collective, between the citizens and the political community to which they belong…citizenship is always and everywhere in a permanent process of construction and transformation' (Cao, 2015, p. 24). There can be no 'linear narratives of citizenship' (Cao, 2015, p. 28). While democracy is concerned with the greater public good, for it to be effective, citizens need to be active and to be involved both politically and socially (Honohan, 2005, Harris, 2010).

Participation is a broad concept which can be defined in different ways depending on the circumstances or the ideological or political context. For some people, 'it is a matter of principle: for others, a practice: and for still others, an end in itself' (World Bank, 1996, p. xi). There are two views on the benefits of participation. One view sees it as a way of increasing efficiency - if people are involved they will be less likely to rise up in opposition. The other sees participation as a basic right which leads to collective action, social inclusion, empowerment, transparency and accountability (Pretty, 1995). Some say that participation needs to be seen as a political

process, rather than a technique - who is involved, why and on whose terms? (Cornwall, 2008). Participation has the potential to challenge power dynamics, but it can also act to solidify existing power differentials. People's perception of their efficacy and ability to influence decisions may determine whether or not they participate. People's lack of participation or participation on other people's terms can entrench their powerless position (White, 1996).

3.2.1 MODELS OF PARTICIPATION

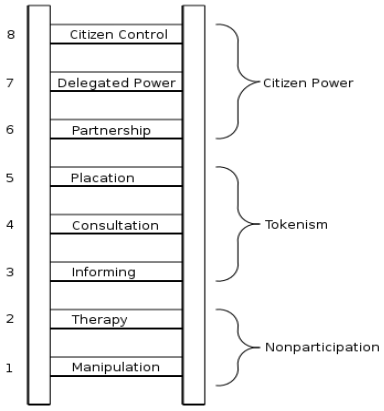


Figure 1: Arnstein's Ladder of Citizen Participation (from Lithgow, 2004)

According to Sherry Arnstein, urban redevelopment specialist and director of the non-profit research institute, Community Development Studies for The Commons (Arnstein, 1969), the notion of citizen participation 'is a little like eating spinach: no one is against it in principle because it is good for you'. However, in the turbulent days of the 1960s, Arnstein saw things in a more radical way. For her citizen participation meant citizen power and involved the redistribution of real power to those who are excluded from political and economic decision-making.

Arnstein is best known for her oft-quoted 'Ladder of Citizen Participation' (Figure 1), which outlines the stages between non-participation, tokenism and full empowerment.

While she admits that her ladder is a simplification, nearly fifty years on, it is still prominent in discussions around participation and citizen engagement. For Arnstein, the measure of participation is whether or not citizens are able to gain decision-making power over issues which affect them. The first two rungs of the ladder, Manipulation and Therapy, are effectively non-participatory – people are put on advisory boards to be 'educated' or to ensure their support, or they are 'treated' for their powerlessness. Token participation is offered on the following three rungs, Informing, Consultation and Placation, through the one-way dissemination of information, consultation with no assurance that responses would be given or feedback acted on (e.g. surveys

and public hearings), or placation through the appointment of unaccountable representatives of the 'worthy' poor to boards where they have no chance of influencing decisions. Participation becomes more meaningful when Partnership opportunities are offered between the people and the power-holders – but this will only work effectively if the citizens are organised and if they have the necessary financial and practical resources, and skills, to contribute equally. Delegated Power is a step above and ensures that citizens hold dominant decision-making power, or the option to veto proposals. The highest rung, Citizen Control, allows for full citizen power, whereby the citizens direct the development or policy, have access to the appropriate funding and can negotiate the conditions under which any proposed changes are made.

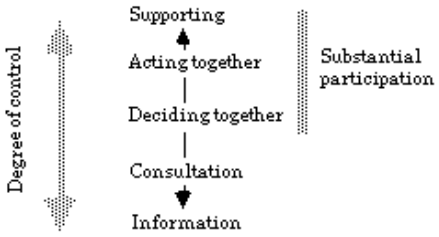


Figure 2: 5 Stances of Participation (from Wilcox, 1994)

David Wilcox (Wilcox, 1994) has simplified Arnstein's model by prioritizing five 'stances', each of equal importance (see Figure 3). Different stances are appropriate at different times and in response to particular interests:

Information - let people know what is planned.

Consultation - offer options and listen to feedback.

Deciding together - diverse ideas, deliberation and joint decision-making.

Acting together - partnership to implement decisions.

Supporting independent community interests - empower others through grants, advice and support.

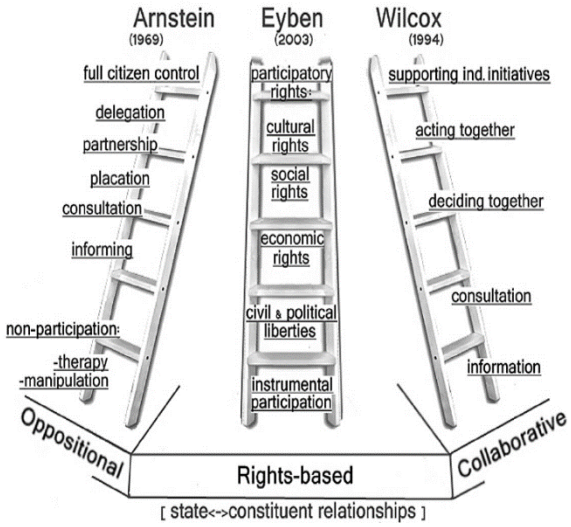


Figure 1: Models of Participation (from Aylett, 2010)

Alex Aylett (Aylett, 2010) created a rights-based participatory ladder (see Figure 4), drawing on the work of Rosalind Eyben (Eyben, 2003). Eyben argues that a shift has taken place in the policies of international development agencies, such as the World Bank, the United Nations Development Programme, and NGO's like Oxfam, away from a procedural method of reducing poverty and meeting basic needs, towards a more rights-based approach. In Aylett's model, the right to participation is at the top, because other rights can only be prioritized and achieved through participation.

Choguill (Choguill, 1996) makes the point that because individual participation brings little benefit to the community as a whole, the term 'community participation' should be used. He also proposes that, within the development context, low-income citizens need power but also require basic services and housing. The latter need is not addressed in Arnstein's ladder. Therefore, in his version Choguill includes 'Empowerment' at the highest level, whereby community members initiate and control their own developments, if needs be with the help of non-governmental organisations or other outside agencies. At the lowest level is 'Self-Management', which means that governments leave the community on their own to fend for themselves and to plan improvements and control projects. NGO's (or other intermediary groups) can replace the role of governments, or they can help to keep the negative influence of a hostile government at bay. Placing the concepts of empowerment and self-management at the opposite ends of the participation ladder shows that people's basic needs can be met, with or without government support or co-operation.

A critique of Arnstein's Ladder (Tritter and McCallum, 2006) asserts that the model is over-simplified in presuming that citizen empowerment is the exclusive aim. Moreover, it does not adequately explain how people are encouraged to get involved, who ends up participating, and

what is achieved. Neither does the model address the challenges around trust and the tension between involving some people intensively and everyone else peripherally. There is little opportunity for evaluation of the process and outcome, or of the quality of citizen involvement. There is also no recognition of the importance of involving people in the framing of the problems. There is a danger that the model will promote decisions based on 'the tyranny of the majority', or that decisions will be made in the interests of some citizens and not of others. How to ensure that participation is sustainable is not addressed. The authors want to move away from Arnstein's adversarial approach, with two sides contesting over power and instead encourage more collaboration and co-production. They suggest a 'multiple-ladder' approach which allows for different types of involvement, with bridges linking the different ladders – in effect a 'scaffold model' which maintains the hierarchical power structure yet also includes horizontal integration between people and the relevant departments and agencies.

3.2.2 PARTICIPATION AND EMPOWERMENT

It is generally believed that participation empowers the participants. Charles Kieffer (1984) suggests that empowerment is a combination of both political and psychological forces, and involves the development of a more positive sense of self, a greater understanding of one's political and social context and of how people can act collectively to achieve social or political aims. Psychosymbolic empowerment helps people to adapt to their circumstances, but, on its own, will not substantially alter those conditions. On the other hand, psychopolitical empowerment involves the achievement of a goal, such as a re-distribution of resources or a change in circumstances, a stop to something or the creation of something else. It is more group oriented and the benefits are shared (Couto, 1998).

Empowerment is essentially about power. To understand empowerment, you need to identify who, or what has authority over whom. It therefore will manifest itself differently depending on the relationships, circumstances, organisations and people involved (Rappaport, 1987). For a process to be empowering it needs to help people to develop practical skills around group development and management, and conflict resolution. This requires that the appropriate supports, resources and institutional flexibility be provided. If these resources are not available,

then the participation experience can be disempowering. Empowerment is not just about people learning how to do things, setting their own agendas and playing an active part in decision-making – which fits in with the traditional view of power. A feminist interpretation of power goes a step further and includes the importance of recognising how the forces of oppression and 'internalised oppression' affect the ability of some people to participate and to wield influence (Crawley, 1998).

There is some discussion in the literature on whether participation promotes empowerment, or whether people participate because they already feel empowered (Couto, 1998). The local people who participate and who benefit from interventions are most likely to be those who already hold some power within their communities. The weak, the poor, the marginalized and many women can sometimes become even worse off. To ensure that this does not happen, a deliberate and on-going response is required to bring them into the process and to allow them to consider and explain their own priorities (Chambers, 1997).

3.2.3 PARTICIPATION AND TRUST

Trust is a key characteristic of participatory governance (Yang, 2005) and it is essential for relationships to flourish (Newman and Dale, 2005). The link between trust and participation can be a two-way process. The more that citizens participate in their communities the more they will learn to trust others, and the greater trust that citizens hold for others the more likely they are to participate (Brehm and Rahn, 1997, Veenstra and Lomas, 1999). The social trust derived from small group collaboration can then encourage participation in more large-scale collective activities (Shah et al., 2001, p. 467).

Trust in participation institutions is probably the key trust-related factor affecting citizen participation. This challenges the social capital view that interpersonal trust and trusting is enough to ensure more participative governance. The power of the agency, the relationship between politicians and civil servants, cultural and organizational ethos, the strategy of the agency and resources available all have an influence. The challenge is not how to motivate the officials, but rather how to structure the institutions to best provide and support citizen's

involvement and to help them to participate effectively (Yang, 2006)**.** Trust is not necessarily mutual or reciprocal (Schoorman et al., 2007), but a sense of mutual trust is important when considering relations between citizens and public officials. Citizens will not trust the officials if they don't feel trusted by them and public officials are unlikely to initiate participatory, trust enhancing, policies if they don't trust citizens. The trust that officials have in citizens relies on their belief that people will behave in a way that is helpful and useful, that they are competent, honest and benevolent. The risks they face in trusting citizens include the time and resources required, vulnerability to public criticism and the possibility that citizen involvement will be ineffective or counterproductive. Officials may have negative views of citizens – that they are not competent or able to understand the process of decision making, that they do not know what they want, or they are too apathetic or disengaged to get involved (Yang, 2005).

Public trust can be lost through the over use of detailed contracts, endless paperwork and meticulous planning for every possible contingency (Thomas, 1998). Yang quotes Peel (Peel, 1998) who proposes that trust is the key to effective long-term societal change. He maintains that the distrust of authority held by disadvantaged citizens is a rational response to their experience of distrustful governance. Trust is linked to power, control and cultural discrimination. A robust theory of good governance needs to acknowledge the constructive role of 'rational mistrust' (Rayner, 2010, p. 2622).

3.2.4 CRITIQUE

While citizen participation is seen as being the foundation of democracy, there is a profound ambivalence about how, and by how much, citizens should directly participate in the activities of their government, and in decisions that affect their lives. It is accepted that the active role of citizens and direct democracy is a right, that it fosters self-determination and revitalises civic life and resolves conflict, that it makes public bodies accountable. On the other hand, there is a wariness around direct citizen participation and a sense that the more indirect system of representative democracy protects citizens from the challenges and dangers of more direct involvement. It also more ably serves the needs of large nation states and complex, global, post-industrial societies (Roberts, 2004). While participative approaches are promising they are

‘inevitably messy and difficult, approximate and unpredictable in outcome. Subjecting them to rigorous critical analysis is as important as constantly asserting their benefits’ (Cleaver, 2001, p. 37).

Andrea Cornwall notes that the concept of participation has become ‘infinitely malleable’ – it can be moulded and framed to respond to almost any demand. Typologies can suggest a natural progression from bad to good, but in reality these forms of participation become ambiguous. For instance, the sharing of information can curb more active engagement, or such transparency could encourage the possibility of further involvement. If empowerment means ‘do-it-yourself’, with the state renouncing its responsibilities, then citizens may well respond by resisting any efforts to involve them at all (Cornwall, 2008, p. 272). The notion of participation can serve a range of different interests. It is important to pinpoint what these interests are, who is participating and at what level (White, 1996). Participation should be seen as ‘a matter of degree’ rather than as being present or absent. Various kinds of participation are possible, and not all are appropriate. The question needs to be asked, ‘participation for whom and for what?’ (Cohen and Uphoff, 1980). The question of who chooses not to participate also needs to be asked (Cornwall, 2008).

There are concerns about the ‘quasi-religious associations of participatory rhetoric and practice’ and how an emphasis on the micro level can hide and indeed support broader macro-level inequalities and marginalisation. Proponents of participatory development can be naïve about power and power relations and the many, often hidden, ways in which it can be expressed through social and cultural practices. There needs to be a more refined analysis and reflexive understanding of power and how it manifests, and an acceptance of how the participatory process does not come out of thin air but is created by development professionals and relies on the power they wield (Henkel and Stirrat, 2001, p. 14).

Broad-based participation may not always be a social good, it may not always be a positive experience for participants and it does not necessarily lead to ‘empowerment, improved project sustainability, creative problem identification and solving in a manner that is sensitive to local social, cultural, economic and political factors’ (Hayward et al., 2004, p. 96).

3.3 SOCIAL CAPITAL

Community is the entity to which one belongs; it is greater than kinship but more immediate than society. It is where people gain experience of social life and how to be social. It is where they acquire culture (Cohen, 1985). Whether or not its structural boundaries remain intact, the reality of community lies in the mind of its members, and how they perceive their identity. It is a symbolic construction. The community boundaries, whether physical, legal, religious or ethnic are important as they mark one community from the other. Some communities may be in the eye of their beholders, invisible to others, and so can be understood in different ways by different people (*ibid*). 'Division and disunity are part and parcel of community politics, much to the dismay of community utopians' (Brent, 2004, p. 214). While it is acknowledged that community is not always a force for good and that the forces that push communities together can also drive them apart, when it works, a 'sense of community' adds to people's well-being and to their feeling of belonging. Community members, whether from communities of place or communities of kind, benefit from the shared relationships, the sense of 'mattering' to each other, the notion that their needs will be met within the group, and that they have an emotional, historical and shared connection (McMillan and Chavis, 1986). A sense of community is a personal quality that empowers people politically. There is a correlation between a person's attachment to their local community and their level of political participation, in relation to voting, campaigning, contacting political officials, working on public problems, and having political conversations (Davidson and Cotte, 1989, p. 120).

Community can be based around *place*, implying a set of social relationships embedded in a geographical locality or territory e.g., a neighbourhood or village, or around *networks* and social relationships that exist within, but also transgress geographical boundaries e.g., communities of interest. When community is understood as *processes* the emphasis is on collaborative, consensual and voluntary involvement where the quality of social relationships draws on stocks of social capital and trust. Community as *identity* denotes certain qualities of ways of living, including (self-) representation (Cohen, 1985). Many theorists allow for the existence of 'functional' communities, based on some identity or common interest (Plant, 1974). Which 'community' participates will depend on the issue or programme in question (Wilcox, 1994).

Social capital is the 'glue which holds communities together' (Selman, 2001, p. 14). It refers to connections among individuals, to social networks, and the norms of reciprocity and trustworthiness that arise from them (Putnam, 2001, p. 19). 'It's not what you know, it's who you know' (Woolcock and Narayan, 2000, p. 3). It is the 'intrinsic capacity within which individuals and their social relationships can provide the means for community action capable of achieving shared objectives' (Peters et al., 2010, p. 7601). 'One of the most important features of social capital is that it provides a conduit for trusted information' (Selman, 2001, p. 14). It is 'the potential embedded in social relationships that enables residents to coordinate community action to achieve shared goals' (Ebi and Semenza, 2008). 'Negative (conflictual or failed) experiences can damage stocks of social capital just as much as positive ones can reinforce them' (Selman, 2001, p. 14). Social capital 'has several adolescent characteristics: it is neither tidy nor mature: it can be abused, analytically and politically: its future is unpredictable: but it offers much promise' (Healy, 2004, p. 5). 'Discarding social capital…is premature. Rather, we think that the concept still has considerable value if used in a careful and rigorous way' (Rydin and Holman, 2004, p. 118).

The concept of social capital started gaining traction within policy circles in the 1990s. In 1996, the Social Development Department of the World Bank, funded by the Danish government, concluded that social capital plays a key role in the successful running and outcome of many kinds of development projects and is an important tool in the reduction of poverty (Grootaert and Van Bastelaer, 2002). In 2002, the Irish Fianna Fail and Progressive Democrats government included social capital as an important issue for public policy in their Agreed Programme for Government. In 2003, an extensive report entitled 'The Policy Implications of Social Capital' was released by the Irish National Economic and Social Forum (NESF, 2003). While acknowledging that the term had only recently gained recognition in Ireland, the authors pointed out that the underlying concepts were not new. 'Social capital draws on processes which are crucial in community development and the functioning of a democratic, inclusive and cohesive society. Likewise, community development helps generate higher levels of trust and social participation. Effective democracies rest on two essential foundations: civic attitudes of inclusion, tolerance and regard for the rights of others, and civic behaviour…Social capital is not an alternative to existing policies; it is a potential complement' (NESF, 2003, p. v). Key

dimensions include community engagement and volunteering; community efficacy (the capacity of a community to effect change); political and civic participation; informal social support networks/sociability; and norms of trust and reciprocity (*ibid* p. 49).

3.3.1 THEORIES OF SOCIAL CAPITAL

Sociologist, James Coleman, differentiated between *physical capital*, which is tangible as it appears in material form, *human capital* which is embodied in a person's skills and knowledge, and *social capital* which 'comes about through changes in the relations among persons that facilitate action'. Social capital facilitates trust and a group that trusts and is trustworthy will accomplish more than a group without such attributes (Coleman, 1988, p. 100/1).

Economic theory has defined exchanges which maximise profit as 'self-interested'. Any other form of exchange is non-economic and therefore 'disinterested'. But as French sociologist, Pierre Bourdieu (Bourdieu, 1986) maintained it is impossible to understand how the social world works without looking at capital in all its forms and not just that recognised by economic theory. He listed three kinds of capital: *economic capital*, which can be converted into money, and may be institutionalised as property rights; *cultural capital*, which can, in certain conditions, be converted to economic capital, and may be institutionalised as educational qualifications; and *social capital*, made up of social connections and group membership which, in certain conditions, can be converted into economic capital and may be institutionalised in the form of a 'credential'. The existence of a network of connections is not a natural or social given, but is the outcome of much prior individual and collective effort at relationship building, which will reap benefits in the short and longer term.

The more recent wave of interest in social capital is largely due to the American political scientist, Robert Putnam. In his study of 20 Italian regions (Putnam, 1993), each of which had established a regional government in the 1970s, Putnam demonstrated how some of the new governments thrived while others failed dismally. He discounted the obvious reasons such as quality of government, party politics or ideology, affluence, social stability, or migration. Putnam's conclusion, echoing Alexis de Tocqueville so many years before, was that a strong

tradition of participation and civic engagement – voting, membership of groups and organisations, and reading newspapers – was what made the difference between the areas that succeeded and those that were mired by stagnation, crime and corruption. The 'civic' regions valued solidarity, honesty and participation, while in the 'uncivic' areas people felt powerless, exploited and hopeless. These communities didn't become civic because they were rich, they became rich because they were civic. Therefore, Putnam concluded, wise policy encourages the formation of social capital, and this in return will enhance government effectiveness.

For Putnam, the central tenet of social capital theory is that social networks, the connections between individuals, have value. Social capital is similar to 'civic virtue, except civic virtue is more powerful when it is embedded in reciprocal social relations' (Putnam, 2001, p. 19). Social capital helps people to work out collective problems more easily. It 'greases the wheels that allow communities to advance smoothly' (Putnam, 2001, p. 288). The existence of trust and trustworthiness allows for better, less costly, social and economic interactions. Interconnectedness broadens our minds, helps us to learn from each other, and temper our own more extreme opinions. When people communicate and interact positively, they are less likely to take advantage of each other. Good relations and 'neighbourliness' encourage collaboration and a sense of mutual co-operation. Putnam asserts that members of groups are more likely than those who 'bowl alone', to be involved in politics, to be neighbourly and to trust others. Social capital can also improve people's lives, both psychologically and biologically – 'Community connectedness is not just about warm fuzzy tales of civic triumph' (Putnam, 2001, p. 290).

Putnam proposed the following kinds of social capital (Putnam, 2002, pp. 9-11):
Formal versus informal – some organisations are formally structured, while others are more ad hoc, coming together for informal activities.
Thick versus thin – thick forms of social capital are intricately interlinked in multi-layered ways, such as relations within the family or traditional occupations like coal mining, where people work, live and socialise in the same area. Thin social capital is more casual, and is demonstrated by the smile you give to someone on the street, or the casual chat in the local shop.
Inward-looking versus outward-looking – some forms of social capital are only concerned with the interests of their members, while others are more interested in the public good.

Bridging versus bonding – bonding social capital refers to 'social networks that reinforce exclusive identities and homogenous groups and arises out of repeated and ongoing personal contacts, such as those associated with familial interactions, or religious groups' (Newman and Dale, 2005, p. 479). It includes connections to people like yourself – people you turn to when you need help (Woolcock and Sweetser, 2002). Bridging social capital involves the 'weak ties' to other groups and connects people across social divides (Newman and Dale, 2005). It fosters connections between heterogeneous groups, with people who may be unlike you (Woolcock and Sweetser, 2002).

While bonding social capital can play a positive role, it also has a dark side. A distinction has to be made between social capital based on trust, understanding, compassion and inclusion and that based on fear, mistrust, hate and a desire to protect a group from the outside. Negative bonding capital can coalesce protesters into an effective opposition (Rydin and Holman, 2004). While necessary to get people together, it can stymie innovation by isolating actors, imposing restrictive social norms and excluding 'others' (Newman and Dale, 2005). However, the exclusivity of bonding social capital may not be all bad. In neo-liberal political systems, progressive groups require the strong bonds to confront development, environmental and cultural threats. But this does not mean that bridging and linking ties are excluded – all are required, and they facilitate one another - people normally use strong bonds to establish bridges (Edwards and Onyx, 2007). However, sometimes bridging social capital can be disruptive if the 'outsiders' are insensitive to the cultural needs and norms of the community (Newman and Dale, 2005).

The 'strength of weak ties' is important. It is through the relations between groups and more removed segments of the social structure (weak ties), as opposed to small, well defined groups (strong ties), that small scale interaction becomes translated into large-scale patterns, and these, in turn feed back into small groups (Granovetter, 1977, p. 1360). Granovetter argued that no bonding tie can be a bridge, and it is bridging ties that connect a network to the outside world and the required resources not available within the group (Newman and Dale, 2005).

Linking social capital connects people at different levels of power whether politically, socially or financially, such as community members and state or semi-state officials (Woolcock and

Sweetser, 2002, Ebi and Semenza, 2008). *Bracing social capital* describes the linkages between, and across, scales and sectors for a specific group of actors which provide a 'kind of social scaffolding' – the cross sectoral, horizontal and vertical connections involved, for instance, in partnership initiatives. The linkages go beyond bonding but are more specific than the concept of bridging (Rydin and Holman, 2004, p. 122/3).

In an important paper (Woolcock and Narayan, 2000), social capital is defined as 'the norms and networks that enable people to act collectively'. The definition acknowledges that there are different dimensions to social capital and that communities do not necessarily have the same access to them. The authors identify four distinct approaches to the topic: communitarian, networks, institutional, and synergy. Each view has its merits, but the authors' review of the evidence indicates that the synergy approach has the most empirical validation.
Communitarian - equates social capital with the number of local associations, clubs, and civic groups in a given community – the more the better.
Networks – highlights the importance of vertical as well as horizontal links between people and other organisations such as community groups and businesses, and recognizes that intra-community 'strong' ties give families and communities a sense of identity and common purpose. But inter-community links across social divides are also important to avoid sectarian rifts.
Institutional –the strength of community and civil society depends on the political, legal and institutional context. Social capital is not an independent factor, either good or bad. The capacity of local groups and communities to act collectively depends on the calibre of the institutions under which they operate.
Synergy - integrates the networks and institutional views and stresses that social capital is a 'mediating variable', shaped by public and private institutions, and in particular by the state. Inclusive development occurs when representatives of the state, the business sector and civil society work together in common forums where they can identify and work on mutual goals.

3.3.2 SOCIAL CAPITAL AND TRUST

Social capital fosters attributes such as trust and reciprocity (Woolcock and Narayan, 2000). Social capital is also a 'tight reciprocal relationship between levels of civic engagement and

interpersonal trust' (Brehm and Rahn, 1997, p. 1001). 'Without trust, the web of human commitment falls apart, making the world a yet more dangerous and fearsome place' (Bauman, 2004, p. 92). Trust is crucial to the diffusion of social signals (Peters et al., 2010). Trust lubricates co-operation and reduces the transaction costs between people - instead of having to invest in monitoring others, individuals are able to trust them to act as expected (Pretty and Ward, 2001, p. 211). People who trust do not fear that they will be taken advantage of if they follow the rules, and they expect others to do likewise. Therefore, they are more accepting of political decisions and have more confidence in government institutions (Brehm and Rahn, 1997). Trust is more likely if there is openness, transparency and accountability (Markantoni and Aitken, 2016).

Networks of civic engagement foster norms of reciprocity whereby there is an expectation that favours given now will be repaid later. Networks allow for co-ordination and provide channels of communication through which information about the trustworthiness of people can flow, and be proven; they use past collaborative achievement as a cultural template for future actions; and let people who act rashly know that they will not share in the collective benefits of future transactions (Sirianni and Friedland, 2009). Social capital is self-reinforcing 'when reciprocity increases connectedness between people, leading to greater trust, confidence and capacity to innovate' (Pretty and Ward, 2001).

3.3.3 CRITIQUE

One of the limitations to the concept of social capital is the lack of agreement on how to measure it (Grootaert and Van Bastelaer, 2002). There are two broad approaches: to record the number of groups and their memberships in a given area or population, but this runs the risk of assuming that all groups have the same level of internal cohesion, resilience and capacity for collective action, and it does not measure if the group exudes trust or distrust for outsiders; to survey levels of trust and civic engagement, but these can also prove unreliable as answers may differ depending on how the question is framed and who is doing the asking (Fukuyama, 2001).

There are many other critiques of Putnam's concept of social capital – in particular the tendency to idealise community solidarity and the consensualism of voluntary association, and not taking into account that communities are highly complex, and that battles are regularly waged both internally and externally over power and the scarce resources required to produce social capital in the first place (Zetter et al., 2006). It is not a given that 'traditional' and 'tight-knit' communities collaborate respectfully (Szreter, 2001). Groups can be 'exclusionary', in that they are formed to fight other groups or interests and can dominate opponents, or they can be 'inclusionary' and outwardly focused, drawing in more members of the community to dilute any concentration of exclusionary power (Veenstra and Lomas, 1999). Human nature is very good at separating friends from enemies. All groups embodying social capital have a certain number of people who they trust, and with whom they co-operate. The 'radius of trust' may extend further than the group itself, or it may only reach certain people within the group (Fukuyama, 2001). Social networks can have negative impacts such as corruption, injustice, and conflict (Berger-Schmitt, 2002). Too much bonding and too little bridging can smother creativity and innovation. Too much bridging and too little bonding can leave individuals isolated and vulnerable (NESF, 2003).

Caution is urged when assessing the role of social capital in local development, and generalizing from successful examples. If strong bonds exist in one area it may have taken many years for these to form and they may not exist at all in other areas. There is no clear formula on how to transport such effective bonds into other settings (Portes and Landolt, 2000). There is a concern that the concept of social capital has been hi-jacked by right wing libertarians who use it to promote their anti-state ideology, saying that the activities of the state 'crowd out' voluntary organisations and therefore damage social capital, and that civic responsibility and volunteerism should be prioritised over the provision of state services and welfare provision (Zetter et al., 2006, Szreter, 2001).

'Let Them Eat Social Capital' is a paper which launches a scathing attack on how the concept of social capital has become 'an almost sacred totem animating a bundle of deep-seated desires' (Somers, 2005, p. 6). For Somers, social capital, as described by Putnam and others in the literature, refers to a network of social relationships that is productive for those who are lucky

enough to have access to it. But this definition ignores the role of politics and power, and the major economic and market changes, the decline of the welfare state and the upsurge of neo-liberal restructuring and privatisation. 'The anti-statist, anti-rights and anti-institutional concept of 'social capital' is indefensible' (*ibid* p. 13).

3.4 CAPACITY

Empowerment is defined as 'the capacity of individuals, groups and/or communities to take control of their circumstances, exercise power and achieve their own goals, and the process by which, individually and collectively, they are able to help themselves and others to maximize the quality of their lives' (Adams, 1990, p. 43). It is 'a process by which people, organizations, and communities gain mastery over issues of concern to them' (Zimmerman, 1995, p. 581). As already outlined, empowerment is about power. Power relates to the 'transformative capacity' of people or organisations (Giddens, 1984). People have an intrinsic need for self-determination (Deci and Ryan, 1975) and a desire for personal self-efficacy (Bandura, 1977). They are frustrated when they feel powerless, or when they believe they have no way of influencing a situation or a decision that affects them. Empowerment is a process of instilling feelings of self-efficacy in people by identifying and removing the conditions which cause powerlessness (Conger and Kanungo, 1988, p. 474). Empowerment is a sharing of power to develop structures that ensure genuine participatory involvement (Craig, 1995). It involves enhancing people's capacity to transform their lives (Guijt and Kaul Shah, 1998).

Community based initiatives on sustainability are strongly affected by both the capacity of the people and groups involved, and the nature of the community within which they operate. Such capacity depends on the resources and supports available, and on the opportunities and challenges which arise both from within the community and from the wider cultural and political context (Middlemiss and Parrish, 2010).

Agency is defined as the capacity of people to create change, to respond and to adapt to their circumstances - 'the force behind social action'. It is the 'key indicator of a group's ability to respond and identify cohesive solutions to sustainable development challenges' (Newman and

Dale, 2005, p. 482). The focus needs to be shifted from social capital and onto the 'level of agency' that actors possess, which will determine whether they are able to benefit from 'good', and withstand 'bad', social capital. Invoking a wide mix of bonding and bridging ties, vertical links to policy makers, and openness to interacting with people from other networks, can develop agency (*ibid*). Agency is the 'capacity of a person to express their own desires for change (choices) and be open to a diversity of groups, perspectives and possible outcomes that creates a fresh, emergent and richer form of capital, a community agency, that was not available when working as individuals or isolated networks' (Dale and Sparkes, 2010, p. 5).

Quite often, in the context of the debate on energy transitions the term *capacity*, is framed using technical terms like production, generation, RE, installed capacity etc. Here it is used in a more sociological sense, and is broken into six categories – response, resilience, governance, social innovation, community and civic capacity, with particular reference to climate action.

3.4.1 RESPONSE CAPACITY

The term 'response capacity' can be used to describe the ability of a society, government, institution, group or individual to mitigate the causes of climate change, and to respond to its consequences (Tompkins and Adger, 2005). Response capacity is seen as being a necessary, but not necessarily a sufficient, precursor to climate action (Burch and Robinson, 2007, Burch, 2011). The capacity for response depends on the political and cultural processes that determine how risk is perceived, prioritized and managed, and on the importance given to *whose* perceptions and *whose* responses in the decision-making process. There is little motivation to respond, or build capacity to do so, if communities see risks as being either negligible, distant, or too overwhelming and beyond their scope (Granderson, 2014). While response capacity involves the resources that allow a group to respond to risks such as climate change, choices need to be made about how to use the limited stocks of human, financial, and institutional capital available (Burch, 2011, p. 178).

Coping with the climate problem is not a question of mitigating and then adapting. Nor is it a question of adapting and then mitigating. It is a more holistic question of doing both at the same

time, and focusing attention on the common determinants of mitigative and adaptive capacities can lead productively to understanding of exactly how to meet these coincident challenges (Yohe, 2001, p. 261).

3.4.2 RESILIENCE CAPACITY

The term 'resilience' was introduced by Crawford Holling in relation to ecology and, as he put it, 'determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist' (Holling, 1973, p. 17). It is an expression of a system's capacity to retain its essential characteristics while undergoing change (Graugaard, 2012).

In a social-ecological system, *adaptability* is the collective capacity of the actors to manage resilience. *Transformability* is the capacity to develop a new system when ecological, economic, social or political circumstances have caused the collapse of the existing system (Walker et al., 2004). Adaptability/adaptive capacity is the ability of actors in a system to influence resilience through self-organization, whereas transformability is the ability to generate novel trajectories through innovation and creative capacity (Peter and Swilling, 2014, p. 1602). Resilience allows for adaptation within the system, whereas transformation completely changes it. A tension exists in the face of known or unexpected crises between developing a resilience in our day-to-day lives which will allow us to respond to the shock and, at the same time, building the capacity for extreme change, for transformability, should this be required.

This notion of resilience has been brought to bear on sustainability by the Transition Towns movement. Transition initiatives are based on four assumptions: lower energy consumption is inevitable and so must be planned for; communities and infrastructure lack the resilience to weather the shocks; collective action is essential now; through creativity and proactive design, ways of living can be created that are more connected, enriching and sustainable (Hopkins, 2008a). Transition activities are aimed at increasing social (by building/strengthening local networks and identity), economic (by stimulating local trade and self-reliance) and environmental (moving away from fossil fuels) resilience (Graugaard, 2012). This tallies with the

concept of community resilience which means that communities have 'the confidence, capability, resources, knowledge and skills to address adverse factors affecting their cohesion and development' (Gubbins, 2010). Community energy projects can help to build resilience by improving the comfort and utility of community facilities, by generating long-term revenue which offers the prospect of change at community level; by increasing local participation and the transfer of skills, and knowledge (Gubbins, 2010).

3.4.3 GOVERNANCE CAPACITY

There are a number of different governing capacities through which local governments can orchestrate change:
Governing by authority – setting requirements, such as performance standards and development plans with appropriate sanctions for non-compliance
Governing by provision – ensuring the provision of different services, such as energy infrastructure
G*overning by enabling* – strategies based on persuasion and negotiation, including information and financial incentives, and often incorporating shared goals and visions.
These modes of governance can be used together to achieve particular outcomes (Smedby and Quitzau, 2016).

'Governance traps', or incapacity, emerge from the ways in which responsibilities for addressing climate change are framed, or from the sheer complexity of the problem and the operation of conflicting interests. For instance, governments have generally placed responsibility for responding to climate change onto individuals, communities and businesses, whereas people believe that the issue is too big for individuals to deal with alone and so they want government to take control, which results in a situation 'in which both the governing and the governed seek action from the other but where none is forthcoming' (Newell et al., 2015, p. 4). Moreover, greenhouse emissions arise out of the social practices, habits and routines of everyday life and the taken for granted needs of western consumerist lifestyles and continuous economic growth. In order to move beyond governance traps there needs to be a debate as to which of these carbon

intensive practices, needs, and expectations society is prepared to challenge (Newell et al., 2015, p. 5).

3.4.4 SOCIAL INNOVATION CAPACITY

In common parlance, the term *innovation* usually refers to a new technological design or product, and it can also be used to describe the ability of an agency or even a nation to transform and modernise. The concept of *social innovation* is relatively recent (Moulaert et al., 2005) but is now gaining traction to broadly describe innovative strategies which strengthen and empower civil society in addressing important societal challenges. Social innovations are possible prerequisites or components of social change (Howaldt and Schwarz, 2010). Social innovations are the 'innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organisations whose primary purposes are social' (Mulgan et al., 2007, p. 8). They develop as 'forms of new practices, institutions, rites, techniques, customs, manners and mores' (Howaldt and Schwarz, 2010). There are three, often interacting, dimensions to social innovation: addressing human needs; changing the dynamics of social relations and governance so as to increase levels of participation and inclusivity; and increasing capability, access to resources, enhancement of rights and empowerment (Moulaert et al., 2005, Feola and Nunes, 2014).

In the area of social innovation, social groups and actors take on more of the role that the market plays for technical innovations (Howaldt and Schwarz, 2010). However, the competitive pressures that drive innovation in the business arena are absent in the social field, as are the supportive institutions and available investor funds. Which means that 'too often it is a matter of luck whether ideas come to fruition, or displace less effective alternatives' (Mulgan et al., 2007, p. 5).

The literature on grassroots innovation around sustainability transitions has considerably expanded our understanding of social innovation practice and draws our attention to social innovation capacity. Community-led grassroots innovations for sustainable development are predominantly social innovations which are developed at the local community level, and which

develop new ideas, practices and systems of provision. They allow people to express green and progressive values, and work on sustainable actions (Seyfang and Smith, 2007). Examples include community gardens, carbon-reduction groups, local currencies, low-impact housing groups, re-use, sharing and waste initiatives, and community energy projects. These grassroots innovations tend to focus on 'social experimentation and developing new sets of social arrangements and institutions, in place of technology-heavy innovations' (Seyfang et al., 2010, p. 6). They can promote change through the diffusion of innovative ideas and practices which successfully compete with mainstream activities, by unsettling the regime and opening doors through lobbying and protesting, or by encouraging new landscape-level cultural trends (Seyfang et al., 2010).

Local contextual factors, pre-existing skills, access to knowledge networks and levels of local cohesion all affect the capacity of grassroots innovations (Martiskainen, 2017), and these grassroots social innovation projects generally struggle against 'a wider unsustainable regime' (Seyfang and Haxeltine, 2012, p. 384). They are confronting social structures which reproduce vested interests and positions of power (Smith et al., 2016), so they face capacity challenges around funding, managing organizational change, networking, and diffusing alternative ideas into the wider society (Seyfang and Smith, 2007, Seyfang and Haxeltine, 2012). Grassroots initiatives for sustainability are generally motivated and run by dedicated volunteers who give generously of their time and resources. These volunteers can face various challenges, including 'hostility from local people, difficulties in securing funding and 'burn out' as the strain of volunteering with limited support takes its toll' (Middlemiss and Parrish, 2010, p. 7559).

3.4.5 COMMUNITY CAPACITY

Community capacity has been defined as 'the interaction of human, organizational and social capital existing within a given community that can be leveraged to solve collective problems and improve or maintain the well-being of a given community. It may operate through informal social processes and/or organized efforts by individuals, organizations, and the networks of associations among them and between them and the broader systems of which the community is part' (Chaskin, 1999, p. 4).

Community capacity involves the following (Chaskin, 2001, p. 292/3):

1. The existence of resources (ranging from the skills of individuals to the strength of organizations to access to financial capital)
2. Networks of relationships (sometimes stressed in affective, sometimes in instrumental terms).
3. Leadership (often only vaguely defined)
4. Support for some kind of mechanisms for, or processes of, participation by community members in collective action and problem solving

If the inter-related processes of community capacity building are to be effective and long-term, 'they must originate within the community, as a function of it, and be particular to the characteristics, needs and goals of the community' (Robbins and Rowe, 2002, p. 46). Community capacity is seen as 'something that can be developed and strengthened through learning, training, networking, resource availability, and participation opportunities'. It includes the ability of communities to carry out certain tasks and also their ability to access and use certain resources and to be active citizens (Park, 2012, Middlemiss and Parrish, 2010). The process by which communities achieve their desired results, collectively and individually and demonstrate resilience in the face of adversity and positive challenge includes: networks of people; exchange and reciprocity in relationships; accepted standards and norms of social support; and social controls that regulate behaviour and interaction (Peters and Jackson, 2008, p. 9).

Sustainable development projects are more successful in communities that are better resourced, both in terms of finance and education. However, even the best-resourced communities need support if they are to mobilise local resources (Robbins and Rowe, 2002). But when outside professionals and agencies are involved in capacity building, communities may come to rely on the external aid, which often comes with pressure to comply with a top-down agenda, whereby depreciating the community's level of self-control (Park, 2012, p. 391). It is important that in the process of addressing these capacity issues the projects retain their vital 'critical edge' (Smith et al., 2016, p. 429).

3.4.6 CIVIC CAPACITY

An early definition describes civic capacity as 'the product of conscious strategies to use all available resources to enhance the self-governance potential of specific communities' (Edwards and Foley, 1999, p. 525). Many authors and practitioners see social capital as a main component of effective civic capacity (Saegert, 2004). However, Edwards and Foley maintain it differs from social capital for three reasons: social capital is not limited to resources that are consciously produced; it may serve anti-democratic purposes, is not just the 'good stuff'; and groups can choose how they use the social capital at their disposal, if at all (*ibid*).

Civic capacity can be seen as a component of the wider concept of community capacity (Saegert, 2004). For Saegert, it encompasses the ability to engage with the public domain; the capacity to influence the social agenda; the capacity to access public and private sector resources; and the capacity to influence the physical and social environment. Carvalho and colleagues talk about an informed and active capacity, whereby public participants have the opportunity to participate and the provision of the appropriate support to participate effectively, the assurance that their voice will be heard, and the opportunity to influence decisions (Carvalho et al., 2016, p. 5).

But civic capacity is also seen as covering a broad range of elements from global to local levels. When reflecting on the role of small and medium cities in climate action research, Hoppe et al. have shown the key role of the regional government in 'governing by enabling' and supporting citizen action by providing local civic capacity building schemes (Hoppe et al., 2016, p. 5). The extent of civic involvement was also affected by the demographic characteristics of local citizens, such as socio-economic status, levels of income and education and by the presence of local active environmental groups who play an important role in the design and implementation of local climate change policy.

Bernauer and Betzold point out that the increasing role of civil society in global environmental negotiations is often justified with the argument that citizens provide valuable information and expertise which facilitate better decision-making, and they provide democratic legitimacy. But the authors are not so sure that civil society is able to live up to this reputation, primarily because

many representatives who claim to speak for the wider public, are neither elected by, representative of, or accountable to it. And, they ask, does the public even care? While civil society does have a necessary role to play, 'it is not sufficient condition for effective and legitimate global environmental governance' (Bernauer and Betzold, 2012, p. 65).

3.4.7 TOWARDS A FRAMEWORK FOR COMMUNITY RESPONSE CAPACITY

Broad societal response capacities can be distilled into a more relevant framework for communities. At the most abstract level, community capacity is concerned with the capacity for transformation (Burch, 2010, Burch et al., 2014, Wilson and Chatterton, 2011a, Middlemiss and Parrish, 2010, Oteman et al., 2014). At the baseline it is assumed that the pathways for low carbon communities are economically and technically feasible and that the challenges reside in governance, policy and the search for solutions that avoid socially and politically unacceptable trade-offs (Burch et al., 2014). Translating social capacity into action is related to response capacity in terms of financial, human and social capital, as well as functioning institutions and structures, and strong decision-making procedures (Burch, 2010, p. 7583). Burch stresses that this changes over time and, since contextual variables and political leadership are more critical at the early stages, factors like organizational culture and technical leadership become more important as specific mitigation and adaptation strategies are designed and implanted (Burch, 2010, p. 2584).

Two key frameworks for understanding community response capacities help to explore the conditions influencing how communities respond, or not, to the climate and energy challenges (Middlemiss and Parrish, 2010, Oteman et al., 2014). The capacity sub-divisions proposed include: cultural, organisational, institutional, individual/personal, and infrastructural. However, given the focus on community energy in this thesis, I have redefined the infrastructural capacity category to connote an overarching category - social infrastructure - which here is labelled *community response capacity.*

While existing frameworks recognise that infrastructure has a social dimension, the focus is often on the technical or administrative challenges of grid access or the availability of new technologies for trial and use by the community (Oteman et al., 2014), or where the existing (physical) infrastructures already present in a community e.g. housing stock, transport, energy or food systems contribute in some way to sustainable living (Middlemiss and Parrish, 2010, p. 7562). The interpretation here comes more from the understanding of social infrastructure (Edwards and Foley, 1999) which draws on social capital, and highlights the interconnections between other elements of community capacity (Saegert, 2004). In addition to the categories of cultural, organisational, institutional, and personal capacity, again bearing in mind the focus of my research, I have also adapted a fifth cross-cutting technical/practical category (Park, 2012, Oteman et al., 2014) which is called *practical capacity.*

COMMUNITY RESPONSE CAPACITY		
CAPACITY	LITERATURE	DEFINITION/DESCRIPTION
Cultural	(Middlemiss and Parrish, 2010) (Oteman et al., 2014)	The legitimacy of sustainability in the context of a community's history and values, how this is framed within the culture and how together they contribute to the narrative of a place. In the case of community energy, cultural capacity refers to the legitimacy of sustainability objectives, the pro-environmental attitude, and willingness to act, in the community.
Organisational	(Middlemiss and Parrish, 2010) (Oteman et al., 2014)	The sustainable values held by formal groups within the community, and the resources and supports available through these organizations to stimulate change. Values of community energy initiatives include self-sufficiency, local determination, engagement, social cohesion and empowerment of local communities. While relevant organizations may have a specific sustainability focus, they may also be part of the existing social infrastructure e.g. sporting, cultural, political, environmental, residential.
Institutional	(Oteman et al., 2014) (Jänicke, 2006, Jänicke and Quitzow, 2017)	This relates to how governance and public policies, and political, legal, economic and socio-cultural conditions can enable or constrain community initiatives. The institutional dimension must be understood in the context of Multi-level Governance, wherein local action is affected by complex interdependencies with multiple drivers at various levels of governance.
Personal	(Middlemiss and Parrish, 2010) (Oteman et al., 2014)	The resources held by individuals who participate in a community initiative and include the individual's understanding of sustainability issues, as well as their willingness to act and the skills that they draw on to act. Community projects typically rely on the voluntary contributions, intrinsic motivations, and collective action capacities of their members, which includes their skills, knowledge, leadership qualities, values and enthusiasm. This category is an important bridge between individual and collective action.
Practical	(Lockwood et al., 2016, Marinakis et al., 2017) (Oteman et al., 2014) (Park, 2012, p. 389)	Often labelled as technical capacity, this is an emergent but largely underdeveloped concept in the literature on community energy, but there is a value in bringing it to the fore, particularly as knowledge and access to technology and expertise are seen as critical conditions for small community energy projects. Although often framed as an incapacity i.e. the lack of technical capacity for making technological choices (costs, strategic networks, long-term strategy), practical capacity here is used to denote the cluster of capacities linking available time, finance, experience and expertise in projects with a technical dimension.

Table 2: A Framework for Community Response Capacity

4 METHODOLOGY

This chapter outlines the methodology underpinning this research, which incorporated aspects of grounded theory, second order transformational research, participatory and engaged research, adaptive research and reflexivity. It includes my self-reflexive analysis and a section on research ethics. My multi-method approach, sampling strategy and data analysis are explained.

4.1 METHODOLOGY

Heretofore, most climate change research has been focused on providing knowledge on the causes, impacts and costs of the global problem. However, some are now calling for the research focus to shift to solutions and how they are being implemented, and to a more action oriented approach which is clear about its relationship to society and societal problems, which embraces creativity and innovation, and considers the role played by politics and policy making (Fazey et al., 2018). This thesis has endeavored to be part of this move.

The work was interdisciplinary in that it straddled the Departments of Sociology and Energy Engineering. It was also transdisciplinary. Transdisciplinary research focuses on social problems, enables mutual learning between different academic disciplines, research bodies and civil society, and aims to create knowledge that is solution-focused and useful (Lang et al., 2012). Transdisciplinarity implies that ‘cooperation will lead to an enduring and systematic scientific order that will change the outlook of subject matters and disciplines’ (Mittelstrass, 2011).

4.1.1 GROUNDED THEORY

The research draws from the methodological approach of grounded theory, which acknowledges that conditions and events evolve and this has a bearing on what happens and how actors react (Corbin and Strauss, 2014). Methodology is seen as a ‘strategy of inquiry’ as opposed to methods as techniques of research (Denzin & Lincoln 1998). However, my approach is not fully grounded, in that I did not proceed purely from an inductive analysis of the data. Rather, the work emerged from the constant interplay of the data, the researchers’ experience, and that of

community energy practitioners. There is a focus on capacity building and co-evolution with policy-makers and civil society actors.

4.1.2 SECOND ORDER TRANSFORMATIONAL RESEARCH

The work is influenced by the principles of second order transformational research. Rather than just describing and analysing processes of change, second order approaches see action, learning and the creation of new knowledge as being more closely connected. Second order science encourages the sharing of knowledge and the active engagement of researchers in practice, and of practitioners in research, and puts a greater emphasis on discussion and exchange, rather than communication and dissemination. The focus is more on producing 'how to' practical knowledge and on creating change from within the system being studied, rather than seeing it as an outside problem. It is assumed that researchers are not always the best people to know what knowledge is required and so they therefore need to learn from practice and from involving practitioners in the research (Fazey et al., 2018).

4.1.3 PARTICIPATORY AND ENGAGED RESEARCH

The work is also influenced by the principles of engaged research which describes 'a wide range of rigorous research approaches and methodologies that share a common interest in collaborative engagement with the community and aim to improve, understand or investigate an issue of public interest or concern, including societal challenges' (Campus Engage, 2016, p. 4). As with second order transformational research, it is acknowledged that researchers can benefit from the insights of the people with direct experience of the phenomena being studied, as participants or collaborators often have critical insights into local situations which may not be obvious to researchers who are more removed from the issues (Reed and Peters, 2004, p. 29). Participatory and engaged research is the antithesis to 'helicopter research', where academics fly into a community, sometimes literally, then leave, never to be heard of again, with no benefit being experienced by research subjects (Ferreira and Gendron, 2011, p. 154).

In engaged research, the degree of participation may vary along a continuum - at one end citizen participation may be limited to the data collection stages, where participants give accounts of their experiences in their own words, but are less involved in defining projects or evaluating interpretations. At the other end is research where the researchers and citizens co-create the project from start to finish. In the middle are projects where participants are asked to evaluate researchers' proposed frameworks for the research, to participate in interviews or workshops and to give feedback on researchers' interpretation of results (Reed and Peters, 2004, p. 29). While the research for this thesis lay at the low end of the scale with participants taking part in workshops and fact checking the findings, rather than co-creating the project and analysis, every effort was made to be respectful of the time and input they gave, and to accurately reflect their experiences and challenges, with a view to contributing to beneficial change.

Reflexivity, flexibility and adaptability are essential for participatory research as, in practice, the boundaries between academic, action and participatory research are hazy and may shift during the course of projects (Pain and Francis, 2003, p. 53). The need for researchers to 'accept their social responsibility' brings new challenges, especially in relation to the blurring of traditional roles, the competencies required by the researcher, the kind of intervention required, by whom and why, and the implementation of appropriate quality standards. Researchers are often left 'without the appropriate vocabulary to explain and navigate the tensions and potentials that come with their 'new' activities and roles' (Wittmayer and Schäpke, 2014, p. 483/4). Therefore, the skills, attitudes and understanding of the field researcher are critical (Pain and Francis, 2003, p. 53).

4.1.4 ADAPTIVE RESEARCH

The thesis reflects the importance of taking an adaptive approach. Drawing from the philosophy of adaptive environmental management, which suggests that human intervention need not be tentative and fearful of mistakes and can be designed for learning, Reed and Peters propose an adaptive research approach which allows for changes to be made, for learning to occur and for future project designs to take account of the new understanding (Reed and Peters, 2004). In their view, adaptive research practices should be prepared for surprises, involve diverse participants,

reconsider the role of the researcher, and redefine research success. Experimental designs should be created from the outset to advance learning. Adaptive research methodology may require continuous evaluation of the research strategies to ensure that they are producing the most accurate, useful, or creative possible results, and a willingness to introduce other methods if they are not. Adaptive research may also require researchers to draw on a wider range of methods than usual, and feedback mechanisms may need to be built within and between stages rather than viewing research activities as a linear chain of events. Unexpected events should be viewed as opportunities rather than as disturbances. 'Research practices that are openly improvisational and "experimental", while acknowledging uncertainty, are likely to offer new opportunities for learning' (Reed and Peters, 2004, p. 28).

However, adaptive practices require researchers to monitor their research constantly and to be sensitive to many players. The need to design options and opportunities to allow for the surprises that will inevitably arise may require longer time horizons for research projects. The compilation of more or less definitive results, delivered at academic conferences, and published in refereed journals may not always be the only, or even the most important, criteria for evaluating the success of the research. Academics who pursue adaptive research may defy funding structures, ethics reviews and expectations of performance. It is difficult to establish 'best practices' when adaptation means that conventional measures such as validity and reliability are founded on shifting sands of adaptive practice - for example, writing a grant application which proposes that the applicant may deviate from the initial plans is more likely to be viewed as disorganised than strategic, honest, or insightful. This is particularly a challenge for less established scholars who have not acquired a strong track record and where admission of limited knowledge may be viewed as lack of skill. Ethics review panels are also unlikely to be favourable to a submission that suggests that the researcher may deviate from his/her research protocol (Reed and Peters, 2004, p. 35).

4.1.5 REFLEXIVITY

The commitment to reflexivity is seen as an essential aspect of qualitative research (Doyle, 2007). The ethical researcher 'needs to be continually responsive to personal, social, and

contextual constructions' (Hewitt, 2007, p. 1151). Ethical considerations require that researchers have to 'emerge from behind the secure barrier of anonymity and own up to their involvement', which involves varying degrees of self-disclosure (Etherington, 2007, p. 611). Researchers need 'to critically examine their own priori assumptions and actions through being self-conscious and self-aware' (Hewitt, 2007, p. 1155).

The term 'reflexivity' is often confused with 'reflection' (Etherington, 2004) and in the literature the words are used interchangeably. The concepts can be viewed as a continuum where both ends are seen to be important at different stages of a research project. At one end of the scale, reflection can be understood as 'thinking about' – *I reflect on the object* - the process is a distanced one, the thinking is about something else and it happens after the event. At the other end of the scale, reflexivity 'taps into a more immediate, continuing, dynamic, and subjective self-awareness' (Finlay, 2002b, p. 532). Reflexivity goes beyond the 'deep serious consideration' of reflection. Attention 'turns back on itself' and, using the mirror analogy, the subject is reflected in the object (Stirling, 2006, p. 5/6). Reflexive introspection takes place while interactions are happening, whereas reflection generally occurs afterwards (Ryan, 2005, p. 2).

There is a place in research for both reflexivity and reflection. Being reflexive can nourish reflections as introspection leads to heightened awareness, improvement, and change (Ryan, 2005, p. 2). It is suggested that the process of reflection can lead to a truthful understanding. On the other hand, reflexivity, by endeavoring to understand how one's own social position, interests and desires, impacts on what can be known, implies a certain skepticism around whether the unembellished truth will ever be found (Chinn, 2007, p. 15).

With its roots in Gouldner's reflexive sociology (1970) (Cunliffe, 2003, p. 995), the concept of reflexivity has been influenced by feminist approaches to research and their focus on equality, which 'challenged researchers to make transparent the values and beliefs that lay behind their interpretations, lower the barrier between researcher and researched, and allow both sides to be seen and understood for who they were and what influenced them' (Etherington, 2004, p. 27). Social constructionists emphasise that qualitative research is co-created between researcher and researched. They believe it is important to explore the dynamics of the researcher-researched

relationship and the impact each has on the other, and on the research. A different researcher than the one involved will have a different relationship, will respond differently, ask different questions and prompt different replies (Finlay, 2002b, p. 534).

Reflexivity 'involves introspection', a 'deep inward gaze into every interaction' and a focus on 'thoughts, feelings and behavior' (Ryan, 2005, p. 2). It is argued that feelings and emotions are central to reflexive processes, 'colouring the perception of self, others and social world, thus influencing our responses in social interaction as well as the way we reflexively monitor action and deliberate on the choices we face'.

Reflexivity in research is a process—'an active, ongoing process that saturates every stage of the research… a process of critical reflection both on the kind of knowledge produced from research and how that knowledge is generated' (Guillemin and Gillam, 2004, p. 274). The personal views and beliefs of the researcher guide their choices around the topic, methods, and purpose of the research. The topic chosen often has some personal significance for the researcher, whether they consciously realise it or not (Cunliffe, 2003). The researcher's background, values, assumptions and views affect all stages of the research process – from the questions they ask to those they ignore, from who they study to who they ignore, from problem formation to analysis, representation, and writing. They bring their own histories to each interview and, to make sense of what they see or what people tell them, they may draw on the richness of their own experience, particularly if they have experienced what they are studying (Hertz, 1997). The researcher's expectations can also have a significant impact on how the participant responds (Etherington, 2004).

Reflexive analysis in research involves no longer believing that data collection is 'objective' (Finlay, 2002b, p. 532). Likewise, the interpretation of data 'is a reflexive exercise through which meanings are made rather than found' (Mauthner and Doucet, 2003, p. 414/5). What researchers bring to their fieldwork and data analysis also affects their results. 'Failure to engage with these emotions and responses explicitly can lead to them being expressed in other ways, such as in how one writes about the research subjects' (Elliott, 2011, p. 4). Researchers need to look at themselves and make their assumptions clear to their readers. This may involve confessing

personal biases, or telling the story of the researcher's fieldwork experience (Cunliffe, 2003, p. 995). Nevertheless, researchers 'are only human', and they need to work through their own senses and minds. 'By reporting how and why they think they did what they did, they can help others determine whether, or how, the researchers' perspectives influenced their conclusions' (Schutt, 2012, p. 333).

Being reflexive is not a straightforward matter (Ryan, 2005). While the need for reflexivity is no longer questioned, questions arise around how to do it (Finlay, 2002a, p. 212). The process 'is full of muddy ambiguity and multiple trails as researchers negotiate the swamp of interminable deconstructions, self-analysis and self-disclosure' (Finlay, 2002a, p. 209). On our journey, we can fall into the trap of doing *too much* self-analysis at the expense of focusing on, and understanding, our research participants. Moreover, there may be a limit to how much we understand what influences our research while we are actually conducting it – the effects may only become apparent afterwards. Which begs the question - should reflexivity be encouraged and developed by building it into the research process from the beginning, and by creating appropriate supports, spaces and contexts to be reflexive? (Mauthner and Doucet, 2003).

4.1.5.1 MY SELF-REFLEXIVE ANALYSIS

While completely acknowledging that reflexivity is a challenging art and I am clearly a novice, throughout the project I have endeavored to take a reflexive approach, given how involved I had been in the climate change issue prior to starting my research. For the purposes of this dissertation, and using questions posed by K. Etherington (Etherington, 2004, p. 11) as a guide, I have asked myself the following questions:

1. What is my personal history?
2. What was my interest in, and prior knowledge and experience of, this topic?
3. How did my personal characteristics, prior experience, and knowledge influence my research?

1. ***Personal History***

I was brought up on a small organic farm near Cork city, in a household defined by environmental values. My parents were founder members of the Irish Organic Movement and the Cork Environmental Alliance, they played an active role in campaigns against chemical companies and incineration, my mother was a committee member of the local branch of An Taisce, my father planted trees all over our small farm and my sister and I were raised on organic vegetables and environmental rhetoric.

I graduated from Trinity College Dublin with a social science degree and social work qualification in 1984. I have a rich and varied work experience, and over the years have worked on many social and environmental campaigns and community based projects, including Greenpeace Ireland, Dun Laoghaire Harbour Action Group, Global Action Plan Ireland (GAP), and Genetic Concern. I co-authored the book *Campaigns and How to Win Them* (1997) and was a funding assessor for the Irish Environmental Network, advising on the distribution of government funding to member organisations (2009/2010). I have been involved in several local West Cork projects, including an unsuccessful attempt to collectively develop Bantry as an energy efficient town (2007), the establishment of the West Cork Warmer Homes Scheme (2008) and the running of an Energy Tent showcasing local renewable energy companies in the annual Bantry Agricultural Show (2007-2009). I wrote a blog called *Chasing Hubcaps: Climate Change and Behaviour* (2013), looking at the influence of human psychology and behaviour on people's reaction to climate change (Watson, 2013). As a member of the RTE Audience Council, I co-authored a research report analysing RTE's coverage of climate change, for the RTE Board (2014).

In 1999, my then partner and I bought a 34-acre organic hill farm near Bantry, Co. Cork in order to try our hand at low carbon living. We built a comfortable straw bale home, powered by a wind generator, solar panels, a micro-hydro turbine, and wood-burning stove. We drove a Toyota Prius and Citroen EV. For fourteen years I lived and worked on the farm and produced a lot of our own food.

In 2015, I bought and retrofitted a modern bungalow near Ballydehob, which is now well insulated and powered by an air to heat pump, solar PVs, and a heat recovery ventilation system – an easier version of 'The Good Life'.

I have a 17-year-old son from whom I am learning a lot about habits, peer pressure, social practice, and social norms!

In 2015, I became a PhD student with the Energy Modelling Team in the Environmental Research Institute, UCC, and began work on the EPA funded research project, which ran from January 2015 until April 2018, and forms the basis for this thesis.

2. Interest in and Prior Knowledge and Experience of this Topic

As my personal history above indicates, I have a strong social conscience and have had a life-long interest in the environment, human rights and social justice, which ensures that I am active and involved and, as far as possible, 'walking the talk'. Over the years, I have worked on a range

of environmental campaigns with different organisations, and as part of this have maintained a good level of knowledge of the issues involved. I am an avid reader, and like to keep myself abreast of social and political developments and current affairs through various media outlets.

I had heard about climate change but only started becoming aware of the seriousness of the issue towards the end of the 1990's. My concerns were initially centred more around peak oil than climate change. However, after moving to Bantry in 1999 I became very involved in trying to cut our family carbon footprint. Then, with my usual campaigning zeal, I became an evangelist to the point that at one stage a neighbour apologised for getting into our electric car with a plastic bag! To spread the word, we organised Open Days to show off our energy efficient straw bale house and our low carbon lifestyle. Our house was featured on Duncan Stewart's 'About The House' TV programme and we appeared in numerous newspaper articles and did a number of radio interviews. We showcased local renewable energy companies in the annual Bantry Agricultural Show. My ex-partner set up his own wind and solar companies, and began running solar thermal workshops from our farm. I grew the vegetables, supported local eco-friendly causes and managed my partner's campaign when he ran for the Green Party in Cork South West in the 2007 General Election – with energy and climate issues at the top of his agenda. As part of the campaign we showed Al Gore's film *The Inconvenient Truth* in venues across West Cork. At the time there was a real sense of optimism, which was heightened when six Green Party TDs were elected to Dáil Éireann and the Party joined the Government as junior partner. The same year, inspired by the Austrian town of Güssing, I collaborated with the West Cork Development Partnership and key local stakeholders to write a funding proposal for the establishment of an energy efficient flagship project in Bantry. We wanted to employ two full-time workers, and to set up a small visible office and drop-in centre in Bantry town. Our efforts at seeking funding met a brick wall, as effectively there was no available agency that could fund it and so the proposal had to be shelved. Instead, SEAI funding was secured for the development of a West Cork Warmer Homes Scheme, retrofitting low income homes.

By this stage, I had become acutely aware that our open days and other local sustainability and climate related events seemed to be only attracting the already committed environmentalists in the area. I realised we were speaking to people like ourselves, which made me wonder what was

wrong with everyone else – 'why don't they get it?' I began to read widely and, in time, turned the question around to 'Why don't I get it?'. I had become a somewhat judgemental, 'holier than thou' and frustrated member of an eco-bubble disconnected from the wider population. I began to read widely in order to learn more about the challenges facing people, policy makers and society in relation to climate action and to better understand the mistakes that we, in the campaigning arena, were making. In 2013, I published an on-line blog *Chasing Hubcaps-Climate Change and Human Behaviour* (Watson, 2013) containing 21 articles reflecting my mental journey. Interestingly, as a non-academic, I read as many books as I could get hold of it, but did not think of trying to access academic journal papers (I was not even aware of Google Scholar). So I relied on non-academic publications. When I joined MaREI/ERI/UCC as a PhD researcher, I had built up a reservoir of knowledge, but soon realised that I then had access to a wider world of peer-reviewed information.

3. Influence of my Personal Characteristics, Experiences and Knowledge on the Research

Choice of Topic

My previous experience, knowledge and interests completely informed the topic I chose for my PhD. In early 2014, I approached Prof. Brian O'Gallachoir after a public event in UCC and asked if it would be possible for me to formalise and develop the work I had done for my *Chasing Hubcaps* blog. Together with Dr. Ger Mullally, we applied for an EPA research grant and were successful.

Previous Work Experience

The fact that I had tried, unsuccessfully, to set up a community energy project in Bantry eight years prior to starting my research no doubt influenced how I approached both the research, and the community energy practitioners and research participants - I could feel their pain!! I understood their frustration, and wanted to understand the policy context within which such frustration still existed – hence the decision to look back and carry out desk research on the history of community energy in Ireland. My own experience in failing to get financial and technical support definitely accentuated the focus on capacity and the need for support, resources and core funding. The core funding issue is a particular concern as I have direct experience of how critical the role of co-ordinator/manager is in voluntary organisations. Community groups

can only do so much without paid workers. The fact that I had experience of running campaigns fed into the way I approached the research. I was spontaneous, reactive and quick to respond to events and the dynamic policy situation. However, this also meant that, at times, I found it difficult to sit at my desk and focus on the written work!

My Own Shift in Thinking

My experience of being a 'dyed in the wool' environmentalist and homesteader, followed by a challenging period of soul searching while I tried to understand why the public wasn't equally committed to the cause, definitely altered my black-and-white thinking and opened my mind to different perspectives, mindsets and the challenges of national policy-making on an issue that affects everyone and will require substantial lifestyle change. This more nuanced and inclusive outlook allowed me to approach the research with less zeal and more candour, which hopefully contributed to a more balanced outcome.

Trust and Relationship Building

I already knew many of the key players in the environmental field, which definitely helped when I was trying to get a foothold in the community energy space and to expand my knowledge of the issues. In the early stages, people I knew put me in touch with others I didn't know, so I was essentially being vouched for. I am a good networker, and am comfortable using 'snowball' techniques, which also assisted in making new contacts. The fact that I turned up at so many related events demonstrated that I was committed to my research task, and it also helped with trust and relationship building.

When talking to people at events, in exploratory interviews, and in my presentations, I would often refer to my own direct experience of living a low carbon life and, sometimes, to my direct experience of struggling to keep voluntary groups in operation and the challenges of dealing with volunteer overload, burn-out and trying to access core funding. While I realise that this probably affected how people saw me and how they responded to my research questioning, I believe that the overall impact was more positive than negative. The fact that I had had this direct experience helped to provide a common bond and to develop trust with community energy practitioners, and

it may have also helped policy makers and other stakeholders, who were less close to the issue, to understand what it takes for people to de-carbonise, and for grassroots groups to function.

Experience of Working with Groups and Communities

Through my social work training, and subsequent work experience I have developed good interpersonal skills and a certain confidence and resilience when it comes to interacting with groups and dealing with complicated situations and power dynamics. This, I feel, fed into how I was able to engage with, and relate to, a range of different stakeholders during the research process and it certainly helped to lessen the stress of negotiating the fine line between researcher and researched.

Engaging with Policy Makers

I had had little experience of engaging with state sponsored agencies and policy makers and so I very much welcomed the opportunity to do so as part of this research. As well as contributing what I have learned, and continue to learn, about community engagement to the policy process, I gained so much understanding of how complicated and all-encompassing policy making around climate action and the energy transition actually is. This, coupled with all that I was learning from academia and the research process has greatly contributed to my overall knowledge base and to my work.

Objective Analysis

At times I was challenged by the fact that I had a foot in both the grassroots and academic camps – Initially, I found it hard to stop thinking like a campaigner, and to take on the measured stance of a researcher. In the end, I think I managed to find a happy medium – bringing my campaign and grassroots experience, and thinking, to engaged research and transferring academic interest and learning back out to the grassroots. By carefully designing the structure, format, and data gathering methods of our research workshops and including direct wording and quotes in the write-up of the findings, I tried to ensure that the voices of participants, not my voice, came clearly through in the final analysis.

4.1.6 RESEARCH ETHICS

It is important that researchers conduct 'responsible and ethical research from the beginning to the end of the research process' (Wester, 2011, p. 11). This involves adhering to 'the ethical norms, codes and regulation which govern our current research practices as part of an academic/scientific professional community' (Farrimond, 2012, p. 13) and making ethical decisions around the selection of research design, the protection of participants, the analysis of data, and publication of results (Wester, 2011, p. 11). Research ethics 'is fundamental to good research design and practice'. It cannot be added afterwards, or reduced to a set of "right answers" and people often disagree on the specifics (Farrimond, 2012, p. 4).

Responsible and ethical research should be able to determine social validity, and ensure that the research will lead to a useful outcome. Otherwise it will be a waste of researchers' and participants' time, and of research funding (Wester, 2011, p. 4). There is a need for reciprocity in the research exchange. In practice, participants are 'frequently disconnected from researchers once the project concludes, left to wonder what happened to the data, what conclusions might be drawn from it, and what policy changes are advocated as a result' (Neufeld et al., 2019, p. 6).

In 1979, the (US) National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research released the Belmont Report (Belmont Report, 1979). It outlined the basic ethical research principles which continue to form the basis for today's standards.
These are:

1. *Respect for Persons* - individuals should be treated as autonomous agents, and persons with diminished autonomy are entitled to protection.
2. *Beneficence* – the research should do no harm. Possible benefits should be maximized and possible harms should be minimized.
3. *Justice* – the benefits and burdens of research should be fairly distributed. An injustice occurs when some benefit to which a person is entitled is denied without good reason or when some burden is imposed unduly.

These three principles are applied through:

1. *Informed Consent* — research subjects should be given the opportunity to choose what will or will not happen to them. The consent process should involve information, comprehension and voluntariness.
2. *Assessment of Risks and Benefits* - the proposed research should be properly designed, and any risks posed to the subjects need to be clarified and justified, in order to assist the prospective subject to decide whether or not to participate.
3. *Selection of Subjects* – there is a moral requirement that there be fair procedures and outcomes in the selection of research subjects.

UCC is committed to the European Code of Conduct for Research Integrity (ALLEA, 2017) and to promoting consistent ethical behaviour as an integral element of its research culture (UCC, 2016). Details are outlined in the UCC Code of Research Conduct (UCC, 2018) which includes: compliance with standards and procedures; researching with integrity (honesty, accuracy, avoidance of harm); openness in discussing research with other researchers and the public; objectivity and the checking of results before they are made public; general respect for research participants including informed consent and, where required, privacy, confidentiality and anonymity; data storage in paper or electronic form, as appropriate, with back-up records for data stored on a computer for a minimum of ten years after the completion of a research project.

Non-clinical research involving human participants (including behavioural experiments, interviewing and surveying) must now be approved by the Social Research Ethics Committee (SREC) in UCC. When I began my research in January 2015 this was not a clear pre-requisite for qualitative research of a non-sensitive nature such as mine. In hindsight, it would also have been difficult to fill out a form early on, as in line with the challenges of adaptive research, my research plan evolved with twists and turns, in response partly to the dynamic policy process that was unfolding around community energy at the time. Nevertheless, in 2016, I attended four lectures on research ethics, which included practical and legal issues; responsible research and innovation; research integrity and research misconduct; and data protection and freedom of information. This gave me a

good understanding of the key principles which I endeavoured to incorporate into my research practice in the following ways:

1. I treated the research participants with respect by: getting to know them and understanding their issues; listening and hearing what they had to say; communicating clearly with them; being reliable and sticking to time commitments; demonstrating appreciation for their generous commitment; trying to keep them updated on research progress (although probably not as often as I would have liked); and sending them a copy of our EPA end of project report both before and after publication (an area of regret for me was the length of time it took to complete and publish this report).
2. Workshops were carefully organised so as to run efficiently and to not waste anyone's time. For the second round of workshops, it became apparent that people would not be able to travel to a central location, so we re-arranged our plan and held smaller events in each locality to facilitate people's involvement. Participants were sent the agenda and a consent form in advance (which they signed on the day). Permission was granted to record the events, and to use anonymous quotes in any subsequent written material.
2. I have endeavoured to present my work in formats and language that are understandable to lay readers as well as policy and academic audiences, but acknowledge that this is sometimes difficult, particularly in relation to length.
3. Throughout the research period, I networked widely and, whenever feasible, responded to requests for interviews, presentations or my attendance at relevant events. I actively shared my insights and findings with policy makers, and I was very open with other researchers and willing to share and collaborate.
4. I have endeavoured to ensure that the research will not sit on a shelf, but will actively contribute to policy development, to learning around capacity and to the enhancement of the community energy sector.
5. With the above in mind, as part of the MaREI/UCC Energy Policy and Modelling Group, I organized two stakeholder engagement events with climate advocates, in order to facilitate the sharing of our research methods and findings and to encourage feedback, suggestions and follow-up discussion.
6. My sampling strategy evolved over time but was ultimately clear and fair. In the early stages, I held unstructured interviews with a range of people involved in community energy

and then decided to focus solely on grass-roots groups. I involved all the community energy groups that were accessible and active at the time.

7. I have been upfront and honest in my writing and have endeavoured to analyse the data in a clear and objective manner, while also trying to reflexively acknowledge my role and influence in the overall process.
8. I have stored the data as per UCC requirements.

4.2 METHODS

An increasing number of researchers are using multimethod approaches, and several methods in different combinations which complement each other, to achieve broader and often better results (Denzin, 1989, Fontana and Frey, 1994, p. 373/4). Similarly, and in line with engaged research, interviewing has undergone a methodological change and a deeper transformation, related to self and other. The "other" is ‘no longer a distant, aseptic, quantified, sterilized, measured, categorized, and cataloged faceless respondent, but has become a living human being’. As we see and treat the other as a human being, ‘we can no longer remain objective, faceless interviewers’, but we must disclose ourselves, learning about ourselves as we try to learn about the other (Fontana and Frey, 1994, p. 373/4).

Interviews

Interviewing can be structured, semi-structured, or unstructured, within a range of time spans from five minutes to much longer sessions (Alvesson, 2003, p. 16). While the researcher should prepare the opening, closing, and key questions for semi-structured or unstructured interviews he/she should be careful not to over-prepare the script. Qualitative interviewing requires ‘flexibility, improvisation, and openness’. The interviewer should be prepared to explore interesting lines of discussion, look for surprises, and take account of subjects’ differing attitudes (Myers and Newman, 2007, p. 14). The aim of unstructured interviewing is understanding, so it is imperative that the researcher establishes good rapport with the participants and attempts to see the issue or situation from their perspective. Gaining trust ‘is essential to an interviewer's success’ (Fontana and Frey, 1994, p. 367). Researchers should shun ‘outdated’ calls to avoid ‘getting involved in a "real" conversation in which he or she answers questions asked by the

respondent or provides personal opinions on the matters discussed' (Fontana and Frey, 1994, p. 371). However, while close rapport with respondents enhances research, there is a danger that the researcher may 'go native', whereby losing their distance or objectivity and becoming more of a spokesperson for the group being studied (Fontana and Frey, 1994). Balance is required.

Group Interviews/Focus Groups/Workshops

Group interviews, focus groups or workshops (they are generally called focus groups in the literature but, reflecting my community/NGO background, I call them workshops) are defined as a 'method of collecting research data through moderated group discussion based on the participants' perceptions and experience of a topic decided by the researcher' (Carlsen and Glenton, 2011, p. 1). Their primary purpose 'is to illuminate, to describe, and to explain narrow categories of inquiry' (Bender and Ewbank, 1994, p. 74). They allow for synergistic 'sparking off' between group members which would not be possible in one-to-one interviews (Cleary et al., 2014). Group discussion is particularly appropriate when the researcher wants participants to explore a series of open ended questions. It allows for the expression of criticism and the exploration of solutions for change, whereby empowering participants through the research process (Kitzinger, 1995). Workshops can also be more time efficient. However, challenges include the discussion being dominated by one or a small number of people, and an emergence of 'group culture' and 'groupthink' which affects individual expression. The interviewer must also try to balance the directive interviewer role with the role of facilitator and management of group dynamics (Fontana and Frey, 1994, pp. 361-5).

One-on-one interviews are better at probing individual experiences, and encouraging self-reflection on issues that could be influenced by social pressures, while groups interviews are more appropriate for 'the generation of new ideas formed within a social context' (Breen, 2006, p. 466).

While a workshop can involve between four and twelve people (Bender and Ewbank, 1994, Kitzinger, 1995), typically groups consist of between five and eight persons (Twohig and Putnam, 2002). Three to five workshops are generally enough for any study, because after that

you can reach ‘saturation point’ in that new groups will not provide any more information (Twohig and Putnam, 2002, p. 280).

Sessions should be relaxed, in a comfortable setting, with people sitting in a circle if possible (Kitzinger, 1995). It is advisable to offer refreshments, or a token of gratitude (Bender and Ewbank, 1994). Each focus group should have both a facilitator and a recorder (Bender and Ewbank, 1994). A good moderator/facilitator is required to: maintain the flow of conversation; ensure that everyone has their say; facilitate natural deviations from the agenda and a return to key topics; moderate any conflict (Twohig and Putnam, 2002); and ‘to wait, to encourage and cajole’ (Bender and Ewbank, 1994, p. 66). An interview guide is also important to set the agenda, guide the discussion and ensure compatibility across the groups (Cleary et al., 2014).

Language

The academic discourse used in the research process can determine whether participants feel included or excluded (Olitsky and Weathers, 2005). When working with community participants communication needs to be clear to be effective (Upadhyaya et al., 2015). Academic language, including jargon and technical terms can be difficult for non-specialists to understand, and can cause embarrassment, confusion and disempowerment. Therefore it is incumbent on the research team to ensure that the language is accessible and understandable for all if participatory research is truly at the heart of the approach (Gallagher et al., 2016).

4.2.1 MY METHODS

Overall Approach

Bearing in mind the methodological principles of this thesis, particularly relating to engaged, participatory and second order transformational research, and also the importance of flexibility, and reflexivity, I have taken a multi-method approach throughout, and rather than starting out with a clear research plan, I immersed myself in the field and, to some extent, allowed the experience to guide the direction of the research**.**

Fieldwork

Over the course of the 3-year research period, I met with 28 people, attended over 35 climate change and energy related events and 25 community energy workshops and conferences. As well as giving me a feel for the area, this allowed me to keep abreast of the relevant issues and to monitor developments in the community energy sector and related policy. Relationship building and trust formation was a key outcome of turning up regularly on the climate change/energy 'circuit' and, over time, I was able to contribute my research learning into the various forums.

Desk Research

I carried out extensive desk research, particularly in relation to understanding the context of community energy in Ireland, which included the evolution of policy and the experience of community energy groups down the years. I also researched any on-line presence and mentions of the community energy groups in my study, which added to my understanding of the groups in question, and their activities, and fed into the descriptive table in Appendix 1.

Input into Policy

In 2015, as the research project was developing, I was asked to comment on early drafts of the Energy Citizenship chapter of the 2015 Energy White Paper, which was useful from a policy development perspective and my input contributed to the final document. These discussions around the drafting of the Energy White Paper highlighted the need to bring policy makers and community energy practitioners together in order to discuss the relevant issues, and provided the opportunity to get the relevant people together.

In 2016, arising from the focus on community and citizen engagement in the 2015 Energy White Paper, and SEAI's re-launch of their Sustainable Energy Community (SEC) Network, a number of important seminars and workshops were held by interested stakeholders which I attended. These added substantially to the overall research element of this project. But both involvements affected project plans and timing deadlines.

2015 Community Engagement on Energy Workshop

Arising from the discussions around the drafting of the Energy White Paper, I decided to organise a day-long facilitated workshop at the end of August 2015, with the aim of identifying

lessons and learning from groups with hands-on experience of encouraging people at a local level to cut their greenhouse emissions, particularly in relation to energy use. It was envisaged that this would be of use in the development of any future policies and strategies around community engagement on energy, and, in particular, for the Energy White Paper, which was being drafted at the time. The event brought together my academic team, and representatives of the Sustainable Energy Authority of Ireland (SEAI); the Department of Communications, Energy and Natural Resources (DCENR); Dundalk 2020; the GREAT (Growing Renewable Energy Applications and Technologies) project in Belmullet, Co Mayo; North Tipperary LEADER Partnership and Tipperary Energy Agency; and representatives from the grassroots organisations - Transition Town Kinsale, Energy Communities Tipperary Co-op, and Terenure Energy Group. Numbers for the workshop were kept purposefully small (15 attendees) so as to ensure a good discussion. We brought in a skilled practitioner to facilitate the event who wrote comprehensive notes on a flip-chart. The event was also recorded and subsequently transcribed. I produced a report on the proceedings in September 2015 (see Appendix 2).

Research Discussions with Climate Change Advocates

On 28 October 2016 and 3 March 2017, as part of the Energy Policy and Modelling Group, I organized two stakeholder engagement events with climate change advocates, in order to facilitate the sharing of our research methods and findings with climate change advocates, and encourage feedback, suggestions and follow-up discussion.

Semi-structured Interviews

Between October 2015 and March 2016, I carried out semi-structured, face-to-face exploratory interviews with representatives of the following ten groups: Dundalk 2020; GREAT project & Erris BEC; Energy Communities Tipperary Co-op; Aran Islands Energy Co-op; Claremorris & Western District Energy Co-op; Sustainable Clonakilty; Kerry Sustainable Energy Co-op; Templederry Community Windfarm; Terenure Energy Group; and Cloughjordan Ecovillage. Cursory notes were taken at each interview, with the emphasis placed more on listening, discussing and building relationships, than on intensive writing.

2017/18 Community Energy Workshops

Between November 2017 and January 2018, my research assistant and I held five 2-hour long workshops with representatives of the following groups: Energy Communities Tipperary Co-op; Aran Islands Energy Co-op; Kerry Sustainable Energy Co-op; Terenure Energy Co-op; Templederry Community Windfarm; Cloughjordan Ecovillage. Each group was asked to bring as many of their members (numbers varied from between 3 and 9 people) as possible to the workshops, which were held in an informal manner in their usual meeting venues. The events were clearly formatted, facilitated and recorded, with the same questions being asked of each group. In advance of group discussion on each question, participants were asked to write their individual responses on clip-boards. As well as providing another form of data, this ensured that everyone had their say before any group dynamics came into play. My colleague and I both attended the five workshops and we alternated the roles of facilitator and flip chart note taker. Each workshop was also recorded and transcribed.

4.3 SAMPLING STRATEGY

The strength of qualitative research is its ability to explore the complexity and depth of an issue (Carlsen and Glenton, 2011, Cleary et al., 2014). However, 'quantity must be balanced against quality' to ensure that maximum depth and richness is extracted from the research data (Carlsen and Glenton, 2011, p. 2). 'It may not be beneficial to sacrifice analytical depth and scope for additional cases' (Sobal, 2001, p. 189). However, bearing in mind the power differential between the research institution (generally socially powerful), the researcher (generally a professional or an educated student) and the researched it is important to think about who is selected, who is excluded and who benefits (Farrimond, 2012). Therefore, a key decision in qualitative data gathering is who should be included in the study, which requires an effective sampling strategy.

Sampling is a two-way process - theory drives the selection of cases, and careful scrutiny of the cases may elaborate on, or reform, theory (Curtis et al., 2000). It 'can be thought of as a rough sketch to be filled in by the researcher as the study proceeds' (Devers and Frankel, 2000, p. 264). As questions arise during the process of data collection and analysis, the criteria for inclusion and exclusion, or the sampling sites, might be changed (Moser and Korstjens, 2018).

The sampling strategy should be ethical - it allows for informed consent, is honest about any benefits/risks associated with participation and considers any ethical issues around the researcher/participant relationship. It should be feasible, in terms of access, practical resources (time and money) and the capacity and skills of the researcher (Curtis et al., 2000). The inclusion and exclusion of potential participants should be justified (Cleary et al., 2014).

Sampling strategies should result in a sample that: reflects the conceptual framework and research questions; enhances the `generalizability' of the findings; and produces credible feedback (Curtis et al., 2000). A general rule of thumb is to recruit research participants who will provide rich information on the issue and who want to contribute, to articulate, and to reflect in depth (Moser and Korstjens, 2018). Participants in focus groups need to be chosen because they have something to say about the topic and are willing to express it (Rabiee, 2004). It is important to carefully decide the number of participants – too few affects the depth of the study, too many can produce shallow and unwieldy data (Cleary et al., 2014).

Negotiating access to research subjects takes time and patience. Because trust is necessary when conducting some kinds of qualitative research, the researcher may tap into their social network and personal contacts to obtain information on the issue and to gain access to potential participants. They may also spend time in settings or attend events in order to learn more and to meet potential subjects (Devers and Frankel, 2000). Key informants who are knowledgeable about the issue being studied can help to gain access to useful and willing participants (Moser and Korstjens, 2018). Snowballing tactics may also be used, i.e. subjects refer the researcher to other potential suitable subjects, who may then suggest other names, and so on it can go. The 'snowball' effect can add to the accumulative and dynamic research process, it stands on its own merits and delivers 'a unique type of knowledge' (Noy, 2008, p. 331).

Qualitative methods rely on the principle of saturation, whereby sampling continues to the point where no new substantive information is obtained (Palinkas et al., 2015), and 'a sense of closure' is achieved (Moser and Korstjens, 2018, p. 11). Saturation is reached when 'all questions have

been thoroughly explored in detail [and] no new concepts or themes emerge in subsequent interviews' (Trotter II, 2012, p. 399, Cleary et al., 2014).

4.3.1 MY SAMPLING STRATEGY

My sampling strategy, akin to my data collection and analysis, emerged as the research progressed. Initially, I relied on informants that I already knew from the environmental sector to direct me towards some key people and groups. I also attended events which I thought would be useful, from both a learning and networking perspective, and began to develop relationships with people from the community energy and policy sectors, from an early stage. I then used snowball techniques to widen the circle.

The people I invited to the initial 2015 workshop were those who were known, or recommended to me at the time. I was keen to include a small mix of policy makers, supportive agencies, and community energy practitioners. Not all were able to attend on the chosen date.

Arising from the reading of the relevant literature, in particular, the Irish reports - *Community Renewable Energy in Ireland: Status, barriers and potential options* (Comhar, 2011) and *Wind Energy in Ireland: Building Community Engagement and Social Support* (NESC, 2014), and from my attendance at various community energy events and subsequent networking and discussions with key people, I was able to compile a list of the active, and recently active, community energy projects across the country. I then made contact with as many of the groups as I could, and arranged a series of ten exploratory semi-structured interviews in late 2015 and early 2016. The aim was to better understand the community energy sector in Ireland and to begin to explore the benefits, challenges and barriers.

Following on from these interviews, the difference in terms of capacity and resources between 'grassroots' groups, led from the bottom-up at community level, and those initiated and run by state sponsored agencies, i.e. from the top-down, became evident. My interest, arising from my

own personal experience, was in the grass-roots sector so, at this stage, I excluded the Dundalk 2020 and the GREAT/Erris BEC projects from further analysis.

In all, I identified ten active grassroots community energy groups/projects in Ireland at the time - Energy Communities Tipperary Co-op; Aran Islands Energy Co-op; Claremorris & Western District Energy Co-op; Sustainable Clonakilty; Kerry Sustainable Energy Co-op; Templederry Community Windfarm; Terenure Energy Group, Cloughjordan Ecovillage, Ballynagran Community Energy Plus Project, and Camphill Ballytobin. Because of circumstances outside of my control, it was not possible to contact Ballynagran Community Energy Plus Project, and Camphill Ballytobin, so they did not participate in this research.

I initially planned to hold a workshop in the autumn of 2017 with representatives of the community energy groups on the list. However, it proved very difficult to find a date, time and venue which suited the interested participants, all of whom would have had to travel in their voluntary time. So we decided to facilitate two-hour workshops with each group separately in their localities. Four of these workshops were held in November and December 2017 and a fifth (with two groups together) was held in January 2018. Members of Sustainable Clonakilty and Claremorris & Western District Energy Co-op were unable to participate in the 2017/18 workshops. Therefore, the overall sample selection was determined by the groups that could be contacted and those that were able to take part. As it turned out, the holding of five workshops, on the back of the other research, was adequate to meet my data gathering requirements. Saturation may well have been reached if I had held any more.

The following is a short description of each community energy group in our study as recorded in mid-2018. Appendix 1 provides more details on each group.

Figure 4: Community Energy Groups in Study

Templederry Community Windfarm, Co. Tipperary

Templederry is a small rural townland (c. 900 people) in the midland county of Tipperary. The idea of Templederry Community Windfarm emerged in 1999 after a development plan for the rural area highlighted renewable energy options. Templederry Energy Resources Ltd was set up in 2003 to manage the project. 28 shareholders were recruited, and two shares were put into a community co-operative for local use. Templederry Windfarm Ltd was formed in 2010 to deal with financing and power purchase issues. After overcoming many planning and funding challenges, two 2.3MW turbines were erected in 2012 and currently power the equivalent of 3,000 homes. A proposal for a second phase was objected to locally and planning was refused by the Tipperary County Council and the planning authority. The community windfarm was officially opened by the Ministers for Energy, and Environment, in 2013. It employs one full-time person. In 2015, the group set up the Community Renewable Energy Supply Company (CRES) to buy and sell community power. CRES has one part-time and two full-time employees. Grid applications have been lodged for 4 solar farms, one in partnership with Claremorris & Western District Energy Co-op.

Aran Islands Energy Co-op, Co. Galway

The catchment area covers the three Aran Islands off the coast of Co. Galway (c.1,200 people).
Established in 2012 as a sub group of the Aran Development Company, the Aran Islands Energy Co-operative aims to secure energy independence for the Aran Islands by 2022. Life membership is €100, and is open to all residents of the three islands. Out of a population of about 1,200, 85 have so far joined up. By 2017, 250 homes and community buildings had been retrofitted and over 50 heat pumps, 35 PV systems, 9 electric cars, a Tesla battery, LED lighting and energy monitoring had been introduced under the SEAI BEC scheme. There has been a 24% reduction in imported heating fuel. The group is one of SEAI's Sustainable Energy Communities (SEC) and is keen to progress its wind energy proposal, but local concerns have meant that the range of potential sites is very limited.

Cloughjordan Ecovillage, Co. Tipperary

In 1999, Sustainable Projects Ireland Ltd was established to develop an ecovillage, and, in 2003, a 67-acre site was secured in the rural village of Cloughjordan (c. 500 people) in the midland county of Tipperary. Following many financial, design and planning challenges, in 2009 the first residents moved in. The ecovillage was a key partner in the Sustainable Energy for the Rural Village Environment (SERVE) Project (2007-2012). 55 homes have now been built and a further 75 sites are available for development. Key features include a 1MW wood-chip district heating system, a community farm, and large tree plantations. A number of households installed solar PV panels under the BEC scheme in 2017. The group is a Sustainable Energy Community (SEC) and is currently trying to bring their defunct 500sqm of solar thermal panels back into production.

Energy Communities Tipperary Co-op, Co. Tipperary

Responding to a need to revitalize their area, the Drombane/Upperchurch Energy Team was set up in 2010 in a small rural parish in the midland country of Tipperary. In 2015, the Energy Communities Tipperary Co-operative (ECTC) was formed, comprising eight small rural communities. By 2017, 14 communities were involved, and more are expected to join in 2018. Between 2012 and 2017, over €7 million worth of retrofitting was carried out in 800 houses and community halls under the SEAI BEC scheme. The Co-op employs a full-time project manager, and carbon credits have funded local projects, including park solar lighting, the upgrading of boilers, and LED lighting. The Co-op is a Sustainable Energy Community and is keen to produce its own renewable energy.

Claremorris & Western District Co-op, Co. Mayo

Claremorris town (c. 4,500 people) is situated in the north-west of Ireland. The Claremorris & Western District Energy Co-operative was set up in 2015 as a subgroup of 'Progress for Claremorris', a community group responding to local opposition to a Biopark/biomass proposal. The Co-op promotes the benefits of anaerobic digestion and is hoping to develop a district heating system in the town. It has partnered with Templederry Community Windfarm to submit a grid application for a 3MW solar system. The group is a Sustainable Energy Community (SEC).

Terenure Sustainable Energy Community, D. 6

Terenure is a southern suburb of Dublin city (c 9,600 people). In 2013, the Terenure Energy Group was set up, following a 'seedling event' with 50 local attendees, with the aim of reaching zero carbon neutrality by 2030. The group operates under the umbrella of the 'I Love Terenure' trader's organisation which has developed a number of local initiatives, including a weekly farmers' market, and has great community support. The energy group became SEAI's first Sustainable Energy Community, (TSEC), and has partnered with contractors to retrofit local buildings under the SEAI's Better Energy Community (BEC) scheme. Some 33 homes, 9 community buildings and 6 local businesses were upgraded in 2016 and 2017 with a total investment of about €1.5million. Supported by the SEAI, TSEC is in the process of developing an Energy Master Plan for Terenure using GIS analysis of the housing stock, formulating phased retrofitting guidance measures for the six most common house archetypes in Terenure, and developing an interactive communications platform to educate the community and develop a data-base of those who are interested in retrofitting and renewable energy generation. Its ambition is to become the trusted community intermediary and project coordinator/manager for BEC projects in Terenure, and, in the medium term, to set up an energy co-operative to produce and/or invest in renewable energy generation, once seed funding becomes available.

Sustainable Clonakilty, Co. Cork

Clonakilty is a rural town (c. 4,700 people) in West Cork. Sustainable Clonakilty was established as a company limited by guarantee in 2007 with the aim of transitioning the town to energy neutrality by 2020. Activities included: the organization of action groups and public information events, a study trip to Güssing, Austria (2008), a local energy audit (2009), and a Renewable Energy Roadmap (2011). In 2012, the group went into temporary recess due to the economic downturn, volunteer burn-out, and a lack of institutional support and core funding. Occasional meetings resumed in 2013/14. In 2015, the group managed SEAI BEC upgrades to local buildings and the Clonakilty Bike Scheme. However, no further applications were made. The 2020 carbon neutral targets have been shelved and the group is currently focusing on running occasional public information/action events and planting trees to offset members' carbon emissions. The group is a Sustainable Energy Community (SEC).

Kerry Sustainable Energy Co-op, Co Kerry

Kerry Sustainable Energy Co-operative was set up as a sub group of Transition Kerry in 2015 after the publication of Transition Kerry's 'Sustainable Energy Community Roadmap 2030'. The group is based in the town of Tralee (c. 23,700 people) in the south western county of Kerry. As Ireland's largest community owned co-operative (107 members), the Co-op facilitated €450,000 worth of local retrofitting under the 2017 SEAI BEC scheme, helped to secure an SEAI Smart Lighting grant (€5k) for a local company, and was involved in a local Heat Mapping Survey. The group also sells locally grown firewood to its members, organises public information events and is encouraging the establishment of other energy Co-ops in the Kerry region. It is a Sustainable Energy Community (SEC) and plans to produce renewable energy.

4.4 DATA ANALYSIS

'Qualitative analysis transforms data into findings. No formula exists for that transformation. Guidance, yes. But no recipe. Direction can and will be offered, but the final destination remains unique for each inquirer, known only when—and if—arrived at' (Michael Quinn Patton (2002) as cited in Schutt, 2012, p. 321).

Ethical qualitative research writing requires that all aspects of the analysis are clear to readers so they understand what occurred throughout the research process (Wester, 2011, p. 11). But qualitative data collection and analysis 'is always messy'. Therefore, it is useful to define what you want to get out of the research (Breen, 2006, p. 463). The purpose should drive the analysis (Rabiee, 2004). Qualitative research involves moving back and forth between data sampling, collection, and analysis, with the understanding that what arises from data analysis will shape subsequent sampling decisions. Data analysis therefore begins at the beginning of the research process (Moser and Korstjens, 2018).

A key aim of data analysis is to reduce data and it is important to recognize that an element of subjectivity exists (Rabiee, 2004, Attride-Stirling, 2001). While there are many methods and ways of analysing data, there is a gap between methodology and research practice. Experience shows that researchers sometimes 'just do it' (Barney Glaser, 1998 as cited in Flick, 2013, p. 4). They go into the data or the field and then find out what is interesting to study. There is a tension between formalization, with exacting rules on how to apply a particular method, and intuition, which allows for a more evolving analysis. 'Between these two endpoints we find the more realistic stance that a good qualitative analysis finds a combination of rules that are applied and make the analysis transparent on the one hand and the necessary degree of intuition on the other' (Flick, 2013, p. 12).

While focus groups/workshops are not necessarily an easy option, the method is fairly straightforward and analysing the data is similar to the analysis required of other qualitative self-reporting data (Kitzinger, 1995). This involves transcribing the recordings, organising and displaying the data, and developing a summary of the data using direct quotes, with an

explanatory narrative (Bender and Ewbank, 1994). One of the most important aspects of transcribing is the focus on the participants' words (Moser and Korstjens, 2018). Additionally, a focus group research report 'should also usually include at least some illustrations of the talk between participants, rather than simply presenting isolated quotations taken out of context' (Kitzinger, 1995, p. 302).

The following approaches have been relevant to this research:

Progressive Focusing - the process whereby a qualitative researcher interacts with the data and over time refines their focus. The aim is to fully understand the case. The first formal analytical step is documentation of the various contacts, interviews, documents and desk research, in order to preserve a record of what happened. This facilitates ongoing 'conceptualizing and strategizing'. Analytic insights are then tested against new information and observations, the initial concepts are refined, initial research questions may be changed or replaced, more data is collected and the process continues. If necessary the research design is changed (Schutt, 2012, pp. 322-328).

Triangulation involves using multimethod approaches, and combining several methods in ways which complement each other (Denzin, 1989, Fontana and Frey, 1994, p. 373/4). It includes (Stake, 1995): comparing the data with other similar data; comparing direct observation with review of old records; member checking; and review by the study's informants.

Reflexivity or 'degrees of reflexivity' (Mauthner and Doucet, 2003, p. 425) - the more that researchers articulate and explain their role in the research process, and the interplay between knowledge production and their personal biographies, the more confidence readers will have in their work. This needs to be considered when analysing data, although it needs to be recognized that 'the benefit of hindsight' can deepen this understanding (*Ibid.* p. 419).

Member Checking - a concept defined by Lincoln and Guba (1985) which involves the testing of 'data, analytic categories, interpretations and conclusions' with research participants (As cited by Doyle, 2007, p. 889). Member checking covers a range of activities, which allow participants to check the data or findings for accuracy and resonance with their experiences (Birt et al., 2016, p. 2).

Thematic Analysis – the researcher looks for particular patterns and the repetition of concerns, priorities and reactions (Bender and Ewbank, 1994). Any formal analysis of focus-group data

should include a summary of the most important themes and any unexpected findings (Breen, 2006). Even though it can be criticized for being subjective and lacking depth and transparency, thematic analysis can be applied across a range of approaches and provide rich and insightful understandings of complex phenomena (Smith and Firth, 2011, p. 3).

4.4.1 MY DATA ANALYSIS

As a late onset researcher and former campaigner, I think I fall into the Barney Glaser 'just do it' category of data analysers. Partly to do with my background and years of decision making 'on the fly', and partly because of the dynamic nature of current climate action and energy policy, I found it hard to develop data collection and data analysis plans at the outset. These evolved over time, influenced by events, my increasing knowledge of the issues and the people I met during my fieldwork.

I approached the initial months of my research with an open mind. The focus of the project was broadly entitled' Climate Change, Behaviour and Community Response'. The purpose was to explore community engagement in climate action. As I had a particular interest and some experience in researching the behavioural aspects, I began to delve deeper into this area. However, my fieldwork soon alerted me to the fact that there was an emerging (second wave) community energy movement, of which I had little up-to-date knowledge and which had largely been un-researched. I realized that important policy shifts were happening in this area, so that is where I then directed my focus.

My data gathering was separated into four phases:

1. 2015 Community Engagement on Energy Workshop
2. Fieldwork (2015-2017)
3. Exploratory semi-structured interviews
4. 2017/2018 Community Energy Workshops

My research questions evolved over this time and settled on the following:

1. What are the challenges affecting people's response to climate change and the energy transition?
2. What are the theories and principles which help to explain effective citizen and community engagement?
3. What is the Irish experience of community energy?
4. How do we support the development of community capacity to engage in the energy transition?

My data analysis has involved the following:

1. In line with the progressive focusing approach, and in order to try to fully understand the case, looking into the historical context of community energy and corresponding policy, as well as reflecting on the lived experience of community energy practitioners today.
2. Attempting to understand community energy from the perspective of those directly involved, drawing on what they said in workshops and including direct quotes and illustrating some of the talk between participants in the write-up of my findings.
3. Triangulating my results by using a multi-method approach, involving extensive fieldwork, observation, desk research, exploratory interviews, and workshops.
4. Endeavoring, albeit in a novice manner (which, in hindsight, could have been more developed throughout) to take a reflexive approach.
5. Member checking, to a limited degree, by sending the end of project report to the workshop participants for fact checking, during the drafting process.
6. Developing questions, observations, and emerging themes throughout the research process, and particularly throughout the Fieldwork phase as illustrated at the end of the following chapter.

5. FINDINGS FROM FIELDWORK

I carried out an extensive amount of fieldwork during the course of this PhD, which involved attending many events, meeting people I knew with experience and know-how, carrying out exploratory interviews, running workshops, contributing to policy discussions, and presenting my research whenever possible. This I did for the following reasons: to update and familiarize myself with the key issues relating to climate action and community energy; to learn from those with relevant experience and knowledge; to build relationships and trust with people in the policy and community energy sectors; to collaborate and share where possible; to inform people of my research focus and, later, my research findings; to solicit help in gaining access to key research participants; to contribute to the dynamic policy developments; and finally because, to be honest, I am not the kind of person who thrives if confined to a desk all of the time!

My fieldwork was truly a journey of discovery. In this chapter, through a series of graphic illustrations, I show the extent of these engagements under the following headings: Public Climate Change Events Attended; Involvement in Drafting Chapter 4 of 2015 Energy White Paper; Informal Discussions with Environmentalists, Community Engagement Practitioners & Researchers; Community Energy Events Attended; 'Energy Policy & Modelling Group' Research Discussions with Climate Change Advocates; Presentations & Media Articles; and Exploratory Interviews with Community Energy Practitioners. Following on from this, I list the questions which arose for me, the observations I made, and the themes which emerged during this exploratory period and which informed the design of the subsequent workshops. Drawing from the *Thematic Networks* approach (Attride-Stirling, 2001), which provides a way of breaking up text and drilling into the detail of the themes and their implicit significance, I have grouped the themes into three levels: a *Global Theme* (Community Energy Capacity) and a series of *Organising Themes* (What is involved; Benefits; Challenges; Barriers; Supports Required; and Supports Available), each of which generate a number of *Basic Themes.*

18-3-15
Communicating the Challenge - Climate Conversations 2015 Launch Event
Liberty Hall, D.1

18-4-15
Public Meeting on Climate Change - with journalist/blogger John Gibbons
Organico, Bantry, Co Cork

20-4-15
Prophetic Voices Climate Conversations
Tailor's Hall, D. 2

26-4-15
Open Day at The Hollies - Training Centre for Practical Sustainability
Enniskeane, Co. Cork

6-11-17
Public Forum on Climate Change
Cork Climate Action
Boole 3, UCC, Cork

PUBLIC CLIMATE CHANGE EVENTS ATTENDED

Mar 2015-Nov 2017

23-6-15
Sustainability and Climate Change with Tara Shine
Slow Food Group, Ballymaloe, Co. Cork

8-5-17
Forum for Divestment and Beyond
Cork Climate Action
Imperial Hotel, Cork

2-3-17
Before the Flood Public Film Screening
Western Gateway Building, UCC

25-7-16
Visions 2100-Stories from Your Future
Tailors' Hall, Back Lane, D. 8

19-5-16
Solar Power with Xavier Dubuisson
Sustainable Clonakilty
O'Donovan's Hotel, Clonakilty, Co. Cork

Figure 5: Public Climate Change Events Attended

INVOLVEMENT IN DRAFTING CHAPTER 4 (*FROM PASSIVE CONSUMER TO ACTIVE CITIZEN)* OF 2015 ENERGY WHITE PAPER

27-2-15 Attended *Future Energy Policy for Ireland* public consultation (DCENR); Brandon House Hotel, New Ross, Co. Wexford where I met Ken Spratt, Ass. Sec. Gen. Energy, DCENR who subsequently introduced me to Rebecca Minch (Principal Officer, Energy Efficiency & Affordability, DCENR), who asked me to assist with early drafts of Chapter 4

13-4-15 Phone call with Rebecca, and review of draft

14-4-15 Follow up phone conversation

20-4-15 Met with Rebecca in DCENR, to discuss the issues in more depth

28-4-15 Reviewed another draft

3-6-15 Attended *Ireland's Energy Policy 2015 – 2030 - Citizen and Stakeholder Information Session* (DCENR); Dublin Castle, Dublin 2 where I suggested holding a small focused workshop on community engagement. We communicated further by e-mail and phone, and Rebecca introduced me to Declan Meally, SEAI

24-8-15 Rebecca attended our *Community Engagement on Energy* workshop, in SEAI Conference Room, Wilton Place, D. 2

4-11-15 Met Rebecca in DCENR to discuss the workshop draft report and my plans to carry out further research on community energy

16-12-15 Attended the launch of the Energy White Paper *Ireland's Transition to a Low Carbon Energy Future 2015 - 2030*, DCENR**;** Mansion House, Dawson St., D. 2

Figure 6: Involvement in Drafting of 2015 Energy White Paper

Figure 7: Informal Discussions with Environmentalists, Community Engagement Practitioners & Researchers

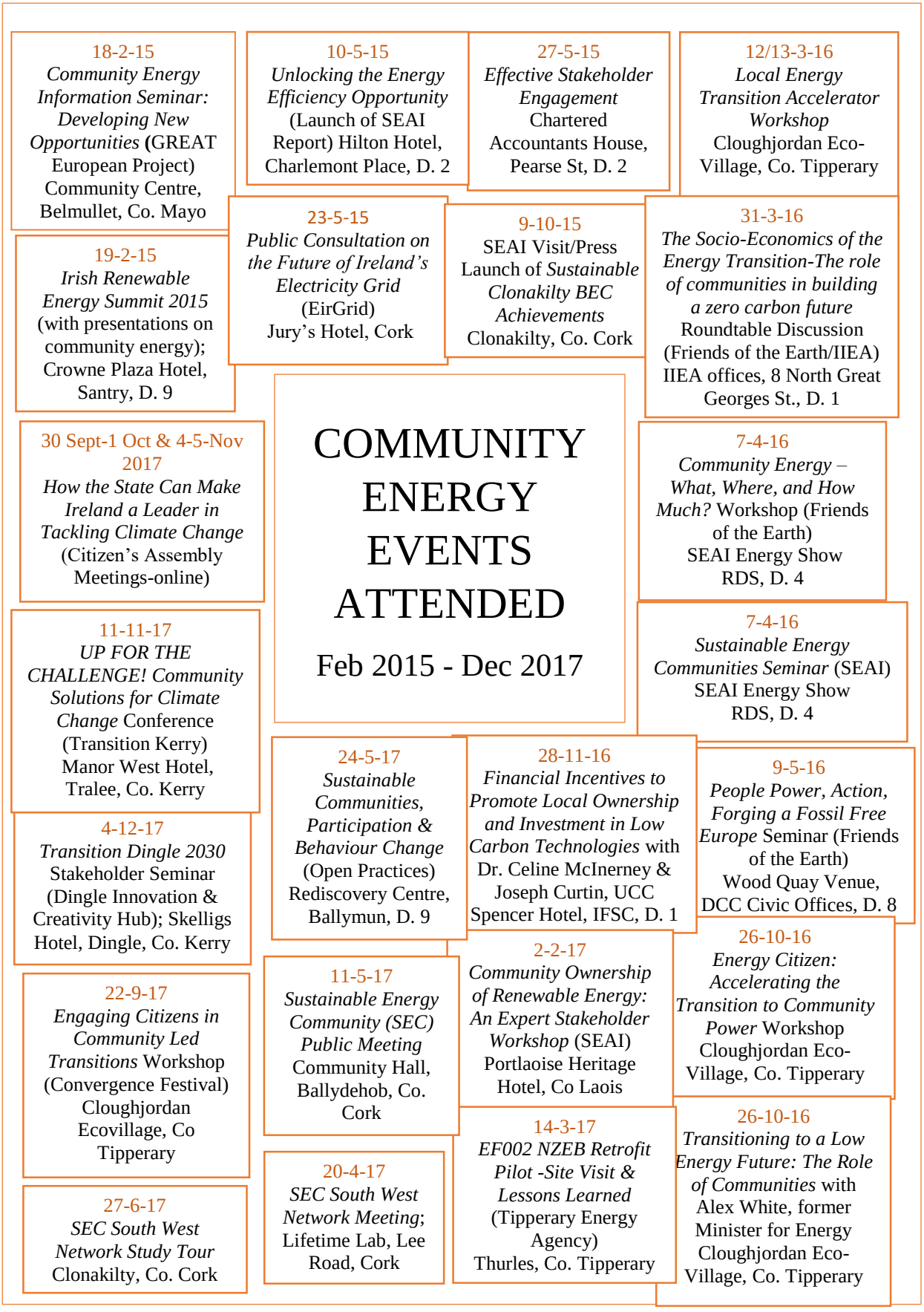


Figure 8: Community Energy Events Attended

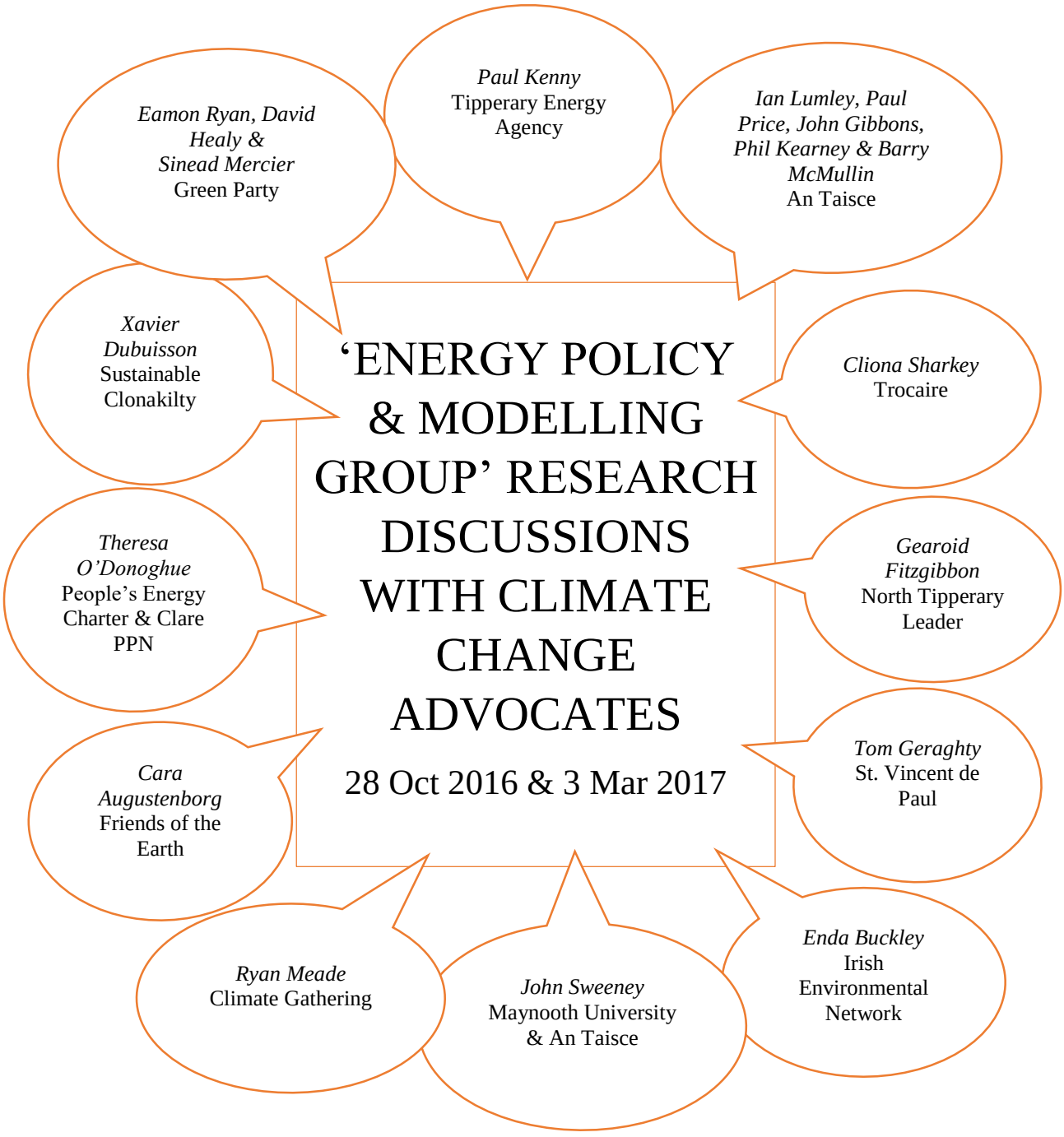
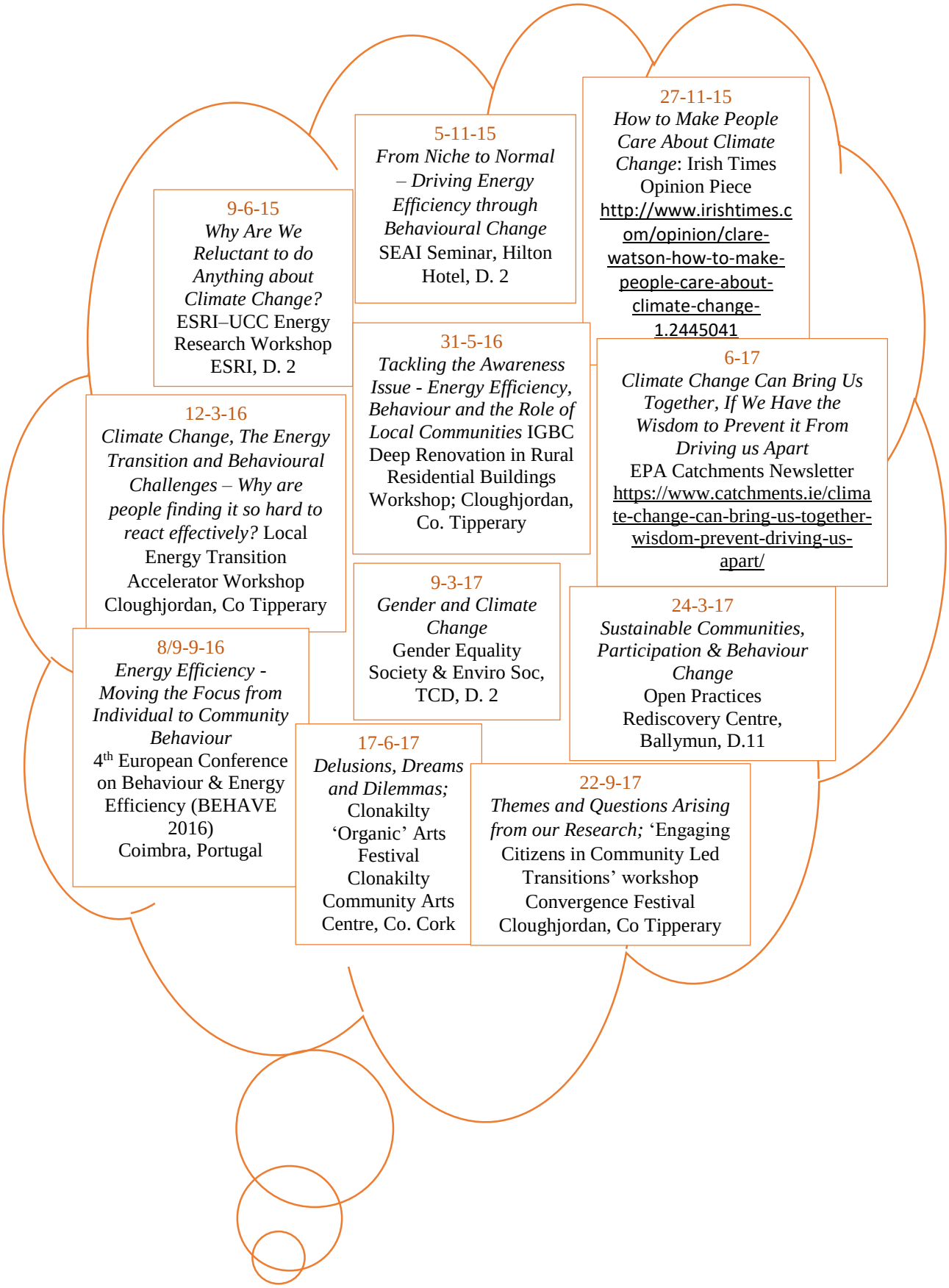


Figure 9: ‘Energy Policy & Modelling Group’ Research Discussions with Climate Change Advocates



PRESENTATIONS AND MEDIA ARTICLES

Figure 10: Presentations & Media Articles

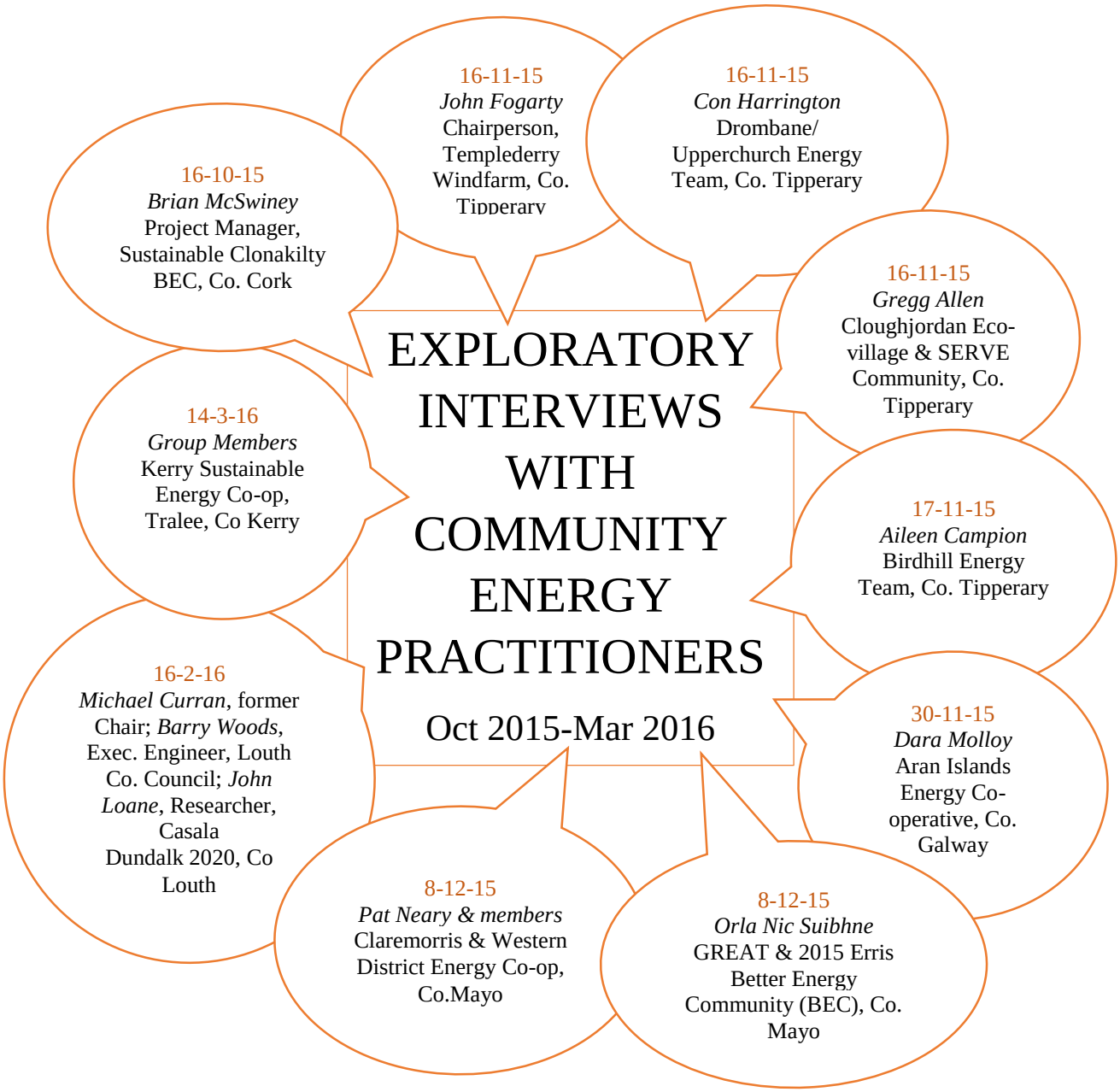


Figure 11: Exploratory Interviews with Community Energy

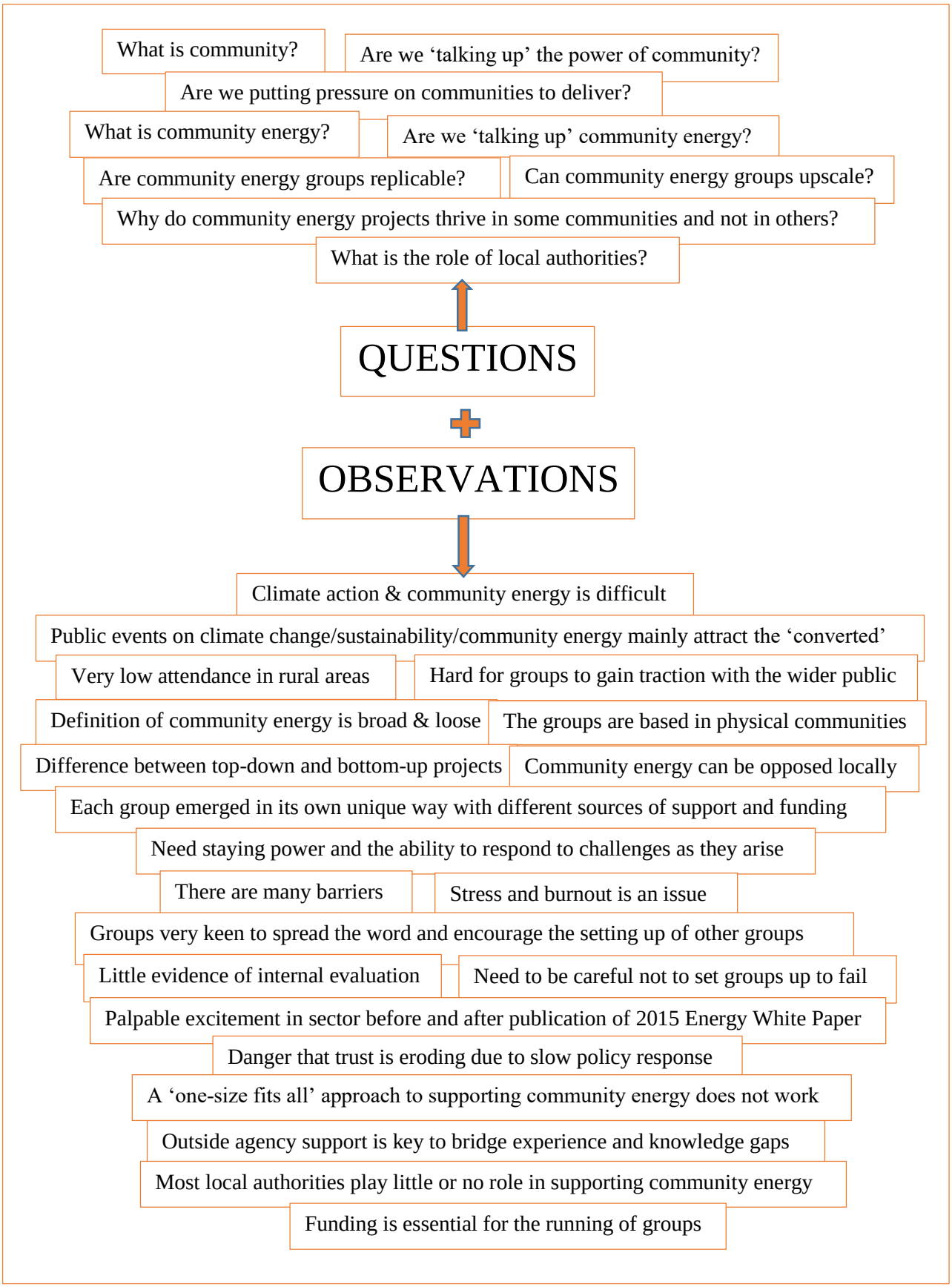


Figure 12: Questions & Observations Arising from Fieldwork

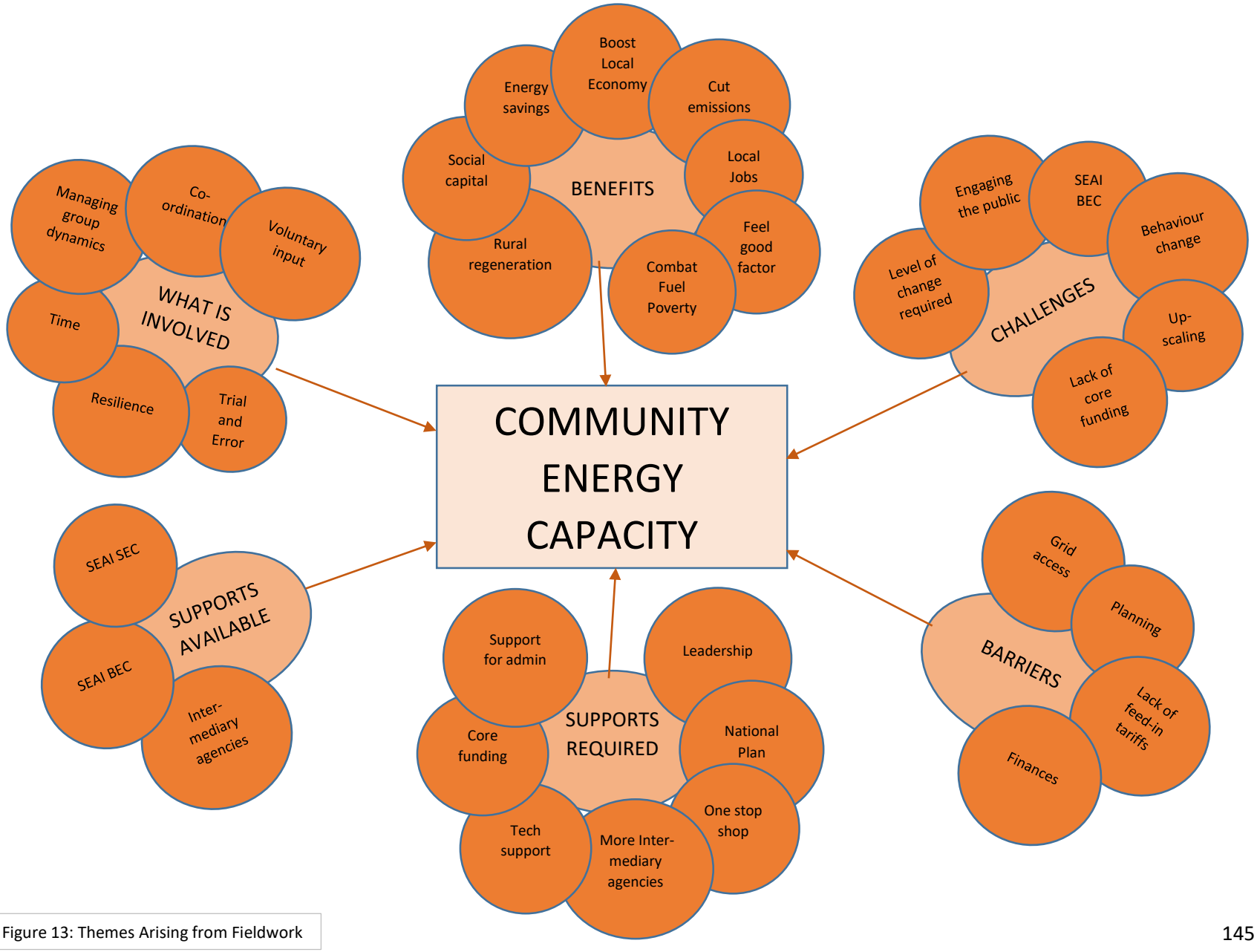


Figure 13: Themes Arising from Fieldwork

6 FINDINGS FROM RESEARCH WORKSHOPS

Over the period of three years, I, as part of a broader research team, have been closely monitoring the development of community energy in Ireland. This has involved extensive review of the literature, the attendance at many relevant events, the organisation of an initial workshop in late August 2015, followed by exploratory interviews with a range of people involved in the area. The knowledge gleaned from this fed into the format of a series of two hour workshops held with representatives of six of the grassroots community energy groups in our study between November 2017 and January 2018. This chapter contains the key findings from the research and is broken into two sections.

Section 6.1 outlines the key points made by participants at the 2015 *'Community Engagement on Energy*' workshop. The full workshop report (Watson et al., 2015) is attached in Appendix 2.

Section 6.2 focuses in more depth on the results and feedback from the workshops held in 2017/18 with representatives of six of the grassroots community energy groups in our study. The format of the workshops is attached in Appendix 3.

6.1 RESULTS FROM COMMUNITY ENGAGEMENT ON ENERGY WORKSHOP (2015)

The following are the key points made by participants of the '*Community Engagement on Energy'* workshop on 24th August 2015. This workshop comprised 15 attendees from DCENR, SEAI, 6 community energy initiatives and the research team. It raised crucially important issues and questions (e.g. around social capital, capacity building and energy citizenship) that helped to shape the subsequent research. In addition, the timing of the workshop was designed to feed directly into the policy process, occurring in sync with the consultation period and drafting of the 2015 Energy White Paper. This especially influenced the text of Chapter 4 on Energy Citizenship.

6.1.1 POLICY AND VISION GAP

There is clearly an absence of a nationally mandated energy transition management role. There needs to be a national plan and structure involving all stakeholders with clear roles and responsibilities, which then filter down to the local level. The policy needs to be thought out and developed down to delivery level and programmes put in place to support it. The involvement of all relevant agencies – local, regional, national and EU, is key to the roll out of community engagement projects.

There needs to be a focus on education and awareness raising. Political leadership is essential, both in relation to energy policy and strategy and in communicating the message to the public - it is not enough to expect people on the ground to change if they don't see change at the top. People need to hear government and political and business leaders talking about energy and what needs to be done and that 'we're all in this together'.

6.1.2 ENERGY CITIZENSHIP

Energy citizenship should not only be seen as applying to individuals – the concept must also support and promote collective citizen action.

Policy makers need broader metrics - not just KWh savings on a year to year basis – which includes how we measure progress beyond the money, looking at what is gained within these communities, the capacity of local groups and longer term planning. The way that social capital is understood needs to be clarified, and there needs to be clarity as to how it is measured and valued.

6.1.3 NEED FOR FUNDING AND SUPPORT

Funding is urgently required for group co-ordination at a local level, as well as for project management. Funding provided needs to be consistent, continuous and multi-annual. It should be

ring fenced like the Environment Fund. The return on carbon credits could be invested into community projects.

Groups need to understand where the different sources of funding are, the mechanisms involved and how to use one funding source to attract others. Communities need ongoing support in terms of finance, advice, guidance and education. They need to be equipped with IT and building and technical knowledge and skills, to understand the costs involved and how to manage project financing.

Relevant templates should be provided to assist new groups in setting up and developing their projects. Momentum and innovation should be nurtured. Local projects should be linked into a national network.

While the involvement of an outside agency, both endorsing and supporting the work, is very important, there can be an over-reliance on SEAI support.

6.1.4 IMPORTANCE OF CHAMPIONS

Community champions, energy champions and agency champions - people who are known locally, respected, trusted and who can engage others - play key roles in the development of community energy projects. However, it can be difficult to find such champions - people may not want the responsibility, or have the required time. While the individual/ personal capacities of champions represent a considerable resource for communities, these are not infinitely renewable. There is a need to beware of burn-out, disillusionment and overreliance on individuals and volunteers. Although the champion is often linked to individuals and their personal capacities for action, it may also refer to the collective organizational capacities of groups, associations or cooperatives. Champions of all kinds need to be supported.

6.1.5 ROLE OF LOCAL AUTHORITIES

There is a blockage point, a disconnect, between the different sectors about what is happening in the community energy space. The role of the local and regional authority is minimal and is not as yet an enabler, despite the fact that most bottom-up structures need top-down supports.

While some local authorities are engaged more than others, depending on who the champion is, problems emerge when that person changes job or role within the authority.

Targets should be put in place for local authority areas. Given the scale of the national change required, it was suggested that these targets should be mandatory and that a single role in an agency is not enough. It was also suggested that there could be a template for how local agencies and authorities become involved in supporting community energy.

6.2 RESULTS FROM COMMUNITY ENERGY WORKSHOPS (2017/18)

25 representatives from the six community energy groups - Aran Islands Energy Co-op, Cloughjordan Ecovillage, Energy Communities Tipperary Co-op, Kerry Sustainable Energy Co-op, Templederry Community Windfarm, Terenure Sustainable Energy Community, participated in our five workshops between November 2017 and January 2018. Participants were informed in advance of the workshop format and the topics that would be covered.

The topics included the following: what/who is the ‘community’; what is ‘community energy’; the benefits of community energy; the achievements of the group, challenges and barriers faced, and disappointments experienced; the supports received so far and additional supports required; future challenges expected and plans for the future.

At the beginning of the workshop, participants were asked to fill out a short demographic questionnaire. They were each given a clip board and, as each topic was introduced, were asked

to write down their individual answers in advance of the group discussion. This was done in order to avoid groupthink and to allow quieter people to have their say in writing.

In this section, the data arising from the workshops has been categorised under the following headings: What is community; What is community energy; The benefits of community energy for participants and the wider community; capacity supports available; capacity challenges; and capacity supports required. Relevant quotes and explanatory information are included.

6.2.1 PARTICIPANT DEMOGRAPHICS

In advance of each community energy workshop, questionnaires were given to participants in order to gain an insight into the demographic nature of the group membership. The key findings include:

- The majority of the 25 participants were over the age of 50, with only 4 in the 30-39 category
- 16 participants (64%) were male and 9 (36%) were female
- Most people with specific tasks within the group (e.g. secretary, chairperson etc.) were also involved in other volunteer organisations
- The main reasons given for getting involved in a community energy initiative were 'climate change/ environment', 'community benefits' and 'the need for an energy transition'.

6.2.2 WHAT IS COMMUNITY?

While community energy groups can represent communities of place or interest, UK research (Seyfang et al., 2013) found that 89% of those surveyed identified themselves as coming from communities of place. Similarly, when participants in our study were asked who, or what, they think 'community' is, the general response was place based - for instance - the residents of the three Aran Islands, the county of Kerry, the parishes of Tipperary and, potentially, South County Dublin.

Community includes 'e*veryone living and working locally, all ages, and looking out for one another* (CE11).

It is '*the county…including all its buildings, parks, rivers, people, animals and bio-diversity in which we live* (CE16).

Community involves '*people that come together in an area/organisation who work on behalf of <u>all</u> people in that area/organisation whether they are appreciated or not* (CE13).

One participant, while being specific about how the community members lived locally, added that geographical factors alone are not sufficient to designate community. Touching on aspects of social capital, he felt that common values, interests, the giving and sharing of time and connections between people were important.

> *The more values, interests, features which residents have in common, the more the 'community' definition applies, with the opportunities for connections between residents becoming deeper and more emotionally based…we traverse the same roadways, see the same landscape, travel to the same town to shop, we are mostly the same religion, attend the same church for ceremonials, drink in same 'locals', support celebrate and participate in same sports, we wear the same 'jersey'!…A community is in the main 'our neighbours together'. Strong communities emerge from social interaction at every level and amongst all age groups - where volunteering is seen as part of the normal living outside the home. Communities do not exist in the fullest sense if [there is] no volunteering* (CE12).

A number of participants acknowledged that 'community' can be a nebulous term, and that it can refer to people who are like-minded and who have a vision for change, and also to people who are working together on a common cause or issue, regardless of geography.

'*So what is a community? It is whatever way you choose to define it* (CE25).

It '*can mean different things - connected people with something in common, be it they live in the same area, or they have a particular interest in something or a goal they want to address* (CE15).

6.2.3 WHAT IS COMMUNITY ENERGY?

There are four possible strands to community energy – renewable energy production (producing energy from wind, solar, biomass or hydro); energy efficiency (retrofitting/upgrading); energy saving (behaviour change); and creating an energy market for community owned projects.

It is important to note that while all the groups in our study aspire to creating their own renewable energy, only Templederry/CRES is actually selling RE energy to the grid. Cloughjordan Ecovillage has a biomass district heating system serving their residents. The other groups are involved in retrofitting and upgrading building infrastructures, partly it would appear, because that is where the support and funding is currently focused. Only the Energy Communities Tipperary Co-op is in a position to ensure that local jobs are created by the retrofitting work in their area. Yet, when our workshop participants were asked what community energy is, their answers focused more on renewable energy production than on energy efficiency or energy saving.

For them, community energy involves the empowering of residents to collectively change their energy supply, a can-do-will-do attitude with people and groups coming together to get things done, striving to achieve positive outcomes, finding solutions to problems, and using a bottom-up approach. It is the power required to keep the community going, the strength and resilience that a community has to respond and to gather around to address the issues that are relevant. It is free energy, a license to sell, it is owned and wanted by the community and is a way of empowering community to become energy citizens within a geographical area.

Community energy is 'd*eveloped and planned by a community of people… representative of a broad range of backgrounds. It is not elitist, is community owned,* [and there is] *buy-in from locals* (CE19).

It is '*energy that is generated within the community or bought collectively by the community where any profits go back to further investment in energy efficiency and renewables* (CE10).

It is '*energy created, stored and used locally - owned communally and with benefits, including secondary benefits, going to the community'* (CE2).

As summed up by one person, community energy involves a '*group of local people who come together to utilize whatever resources are available to us in the locality'* (CE22).

There is a general belief that involvement in a local energy initiative can increase people's understanding and acceptance of renewable energy per se (Walker and Devine-Wright, 2008), and that a degree of community ownership and gain can go a long way towards fostering approval for local renewable installations (Warren and McFadyen, 2010, Devine-Wright, 2005, Seyfang et al., 2013, Rogers et al., 2008).

This thinking was reflected by one of the participants, when they stated that '*community energy is locally produced, clean renewable energy that creates benefits for that local community…and this is what stops the resistance towards these projects'* (CE16).

However, as another participant acknowledged, '*the difficulty is that what people say is a community development…some people think is clearly not a community development and will end up benefitting the few people who have the money to invest in the beginning without any real community ownership'* (CE10).

As can be seen from the historical list of Community Energy Initiatives (1986-2015), local acceptance of community energy initiatives in Ireland is not a given, especially when it comes to wind power. It is clear that local opposition was one of the main challenges faced by the Killala Community Wind Farm, West Clare Renewable Energy (Mount Callan), Ballynagran Community Energy Plus (in relation to their wind turbine plan) and BSB Community Energy. Of the groups in our study, Templederry Community Windfarm received local objections at all stages of the planning process, and the Aran Islands Energy Co-op has been working very hard over the past four years to gain the acceptance of the Inis Mór residents for their modest wind turbine proposal. In 2016 (AIEC, 2017), the islanders agreed that any potential site must:

- Not be on a main tourist route on the island.

- Not obstruct the primary view of any resident of Inis Mór.
- Not be within 500 metres of any home.
- Not be in an area of visual beauty.

Inis Mór is a small island of 31 km², with a population of about 840, and an economy that is heavy reliant on tourism. While there are parts of the island with little housing, these are the natural landscapes frequented by visitors and enjoyed for their visual beauty. Most of the islanders see wind generators as negatively affecting their 'place' and worry about how they will be perceived by tourists. On top of this, a large part of the island is designated as a Special Area of Conservation, which will impact on planning decisions. Taking all these factors into account, without greater local acceptance and support, it is hard to see how a suitable site will be found, even for only one or two turbines.

6.2.4 THE BENEFITS OF COMMUNITY ENERGY FOR PARTICIPANTS AND THE WIDER COMMUNITY

According to our study participants, community energy gives residents a feeling of pride in being clean, green and self-sufficient, in using local fuel and energy rather than imported oil, and in raising their BER's and lowering the community's carbon footprint. People feel satisfied with works completed and good about providing practical example of climate action and showing other communities what is possible. Locally produced energy allows for security of energy supply. Community energy citizens are empowered by local energy ownership, by doing things for themselves and participating in decisions that affect them. There is a feeling of freedom. They are more resilient to weather storms and natural disasters.

> *The feeling of taking control of our local world. I think that is a powerful feeling, because I think people, it is very easy to think there are forces out there over which you have no control. And I think there is something very powerful about taking control back* (CE25).

A 'clean energy' and 'green' image encourages tourism and creates awareness of wider environmental issues. Community energy creates local jobs and encourages local investment. It

could help sustain or even boost population locally. The energy is cheaper, it helps to avert fuel poverty and money spent on local energy remains in the community. It contributes to the circular economy.

> *Rather than just a developer coming in and creating a few jobs and leaving a million euro in the community, if we can achieve this community owned, the financial rewards are there…For instance, you own a hydro-plant or something like that and you all have a share of it, you are worried about the discharge of that plant now, because not only do you own it you feel responsible, but it is in your locality, it is affecting your kids, or your fishing trip to the river or so it leads on to something else, you know…*(CE16).

Retrofitting makes houses more comfortable to live in, it gives householders a better quality of life, the extra warmth enhances health, particularly for the elderly.

> *There is greater use of the community building. Because of things as simple as the LED lights we have had painting classes which we have never had before, even in terms of the cards and things like that, it is costing less and people are commenting that it is warmer* (CE11).

Threaded through the responses is an acknowledgement of how community energy can contribute to neighbourliness, trust and social capital and cohesion. How this can occur is more obvious when talking about retrofitting and upgrading houses and community buildings. What is not referred to is how cohesion can be negatively affected if not everyone is supportive of a community energy installation, such as a wind or solar farm. Implicit in many of the answers is a sense that the benefits of community energy as seen by group members will also be appreciated by the wider community.

> [Community energy] g*ets people talking to each other, allows the peace of mind because they are working with neighbours, less money spent on energy means more*

can be put back into other amenities, it helps reduce our overall energy demand and educates people about the process of what's involved (CE23).

For group participants there are benefits such as meeting and learning from other like-minded people, making new friends and connecting with people you would not otherwise connect with. Involvement gives a sense of place, of belonging and being part of the community. There is satisfaction in working together, being part of The Meitheal and seeing tangible results locally. There are social benefits, such as improving trust and belief among people and 'growing into community'. There is a feel good factor and pride from doing the right thing, from acting positively and responsibly, being part of a whole awareness raising movement, giving back to the community, and being a front runner in greenhouse gas reduction. It is better to volunteer and to do something positive instead of moaning and ringing your hands. It is a commitment. These sentiments are outlined in the quotes below:

I think we were brought up with a sense of civic pride, to do something for your community whatever it happened to be…where I grew up, there was a sense of, you know, you join the Boy Scouts, you join the Civil Defence, you join groups all the time and you are involved in the GAA from the age of four or five…[it] was all about people and there was a very strong sense that people did stuff and they did it for their community (CE17).

I would be quite involved with this as a spiritual commitment. People don't see that, the way I live my life, people go off and say their prayers and don't realise that what they put in their stoves is part of their spirituality...a commitment (CE20).

There is no point in just giving up, somebody's got to do something and it is, bit by bit, people talking to each other and then you start, small things like upgrading your homes, and then you think, yes, that is not miles away and the PV panels and then you take the fear out of listening to someone on the TV who is just beyond your level and you are saying 'I don't understand that' and then you see it is not rocket science (CE23).

There are also the educational benefits of learning more about the problem of climate change, the solutions and available technologies, and being able to test new concepts and pilot equipment in people's homes. One group said how much they had gained from participating in international projects, from linking with other countries doing similar things, attending international meetings, and contributing as much as they are learning. Another mentioned the importance of getting to know agencies and learning how to participate as partners.

However, despite all the benefits mentioned above, there was also a hint of the downside and feelings of frustration:

'*If you actually got the community energy you could see some benefits of the work you have put in, you would feel the sense of achievement for slogging away - we have not got there yet'* (CE6).

'*There is not really much for group participants except…loads and loads of meetings*' (CE9).

6.2.5 CAPACITY SUPPORTS AVAILABLE

Capacity Support 1 SEAI BETTER ENERGY COMMUNITY (BEC) SCHEME

According to the SEAI website (SEAI, 2018a), the BEC programme 'supports new approaches to achieving high quality improvements in energy efficiency within Irish communities. By bringing together groups of buildings under the same retrofit programme, BEC projects facilitate community-wide energy improvements more efficiently and cost effectively than might otherwise be possible'. The programme improves the energy efficiency of Ireland's building stock and supports the use of renewable energy by delivering a cost effective approach, demonstrating sustainable financing mechanisms, creating innovative partnership approaches, stimulating employment, and supporting small scale renewable projects. Partnerships are encouraged and might include 'collaborations between public and private sectors, residential and non-residential sectors, commercial and not-for-profit organisations, or financing entities and energy suppliers. Projects that are part of a larger energy efficiency project or engage with other SEAI programmes are welcome' (SEAI, 2018b). Project management is an eligible expense under the programme for the employment of experienced and skilled managers, to co-ordinate, manage and deliver the BEC project. Only external management fees are eligible and they should not exceed 5% of the total eligible project costs. A project management bonus (3% of eligible project costs) is available for projects that meet the successful delivery requirements (SEAI, 2018a).

All of the groups except Templederry Community Windfarm/CRES and Claremorris & Western District Energy Co-op have been involved in BEC schemes in their areas. The Energy Communities Tipperary Co-op is the only group to take on the role of lead applicant, and to manage the BEC Scheme from start to finish themselves, working with local contractors and tradespeople. Aran Islands Energy Co-op, Cloughjordan Eco-Village, Terenure Energy Group and Kerry Sustainable Energy Co-op were the local partners with contractors who acted as lead applicants. This involved a lot of practical work as demonstrated below:

We promoted the BEC and then got all the expressions of interest, some went…via the council and she passed them on to us but we collected all the expressions of interest from people and then we got a contractor who was going to project manage it and be our lead applicant. We interviewed them and got them on board to deliver the project, help us deliver the project and then essentially to be their people on the ground liaising with the community, to help them contact people about getting quotes in, working with local contractors to get involved in the project. Then getting all that information into the big massive spread sheet. Helping them to write the proposal…being their port of call on the ground if there were issues. If there were any issues with the home owners [a group member] was out there helping to sort out those issues as well…We did a whole video to promote it (CE15).

All the groups said that they find the BEC process challenging, particularly the paperwork requirements, the strict deadlines, criteria changes, and the lack of multi-annual grant funding.

> '*It seemed to be one set of forms to be filled in after another'* (CE18).

> *...the biggest issue is your application. I mean, to look at the application and the process…and worst thing is SEAI would stand up in front of an audience and admit it is unwieldy* (CE14).

> *The* [BEC] *application process is a big barrier…If you were faced with that as a group and that was your first thing, I would be holding up a white flag* (CE11).

> *The other challenge I think we have faced as a group is the changes to the scheme midway from SEAI. One-year* [we] *stood up, gave a presentation* [locally], *and then they changed the percentages and you are looking like a right eejit then* (CE11).

One group was planning to work with the same contractors again the following year, but were told by them that the job was too big and the time span too restrictive.

> *SEAI changed the deadline, they used to open in October and close it in February. Now they opened it in November and they close it on the 26th of January. So over Christmas, essentially two weeks when you wouldn't do it. It is essentially six weeks, I guess they* [contractors] *saw how many expressions of interest we had and they looked at it and said it is too much work we are not interested* (CE15).

> *We had a group of people here the other day presuming it is going ahead in January and now we have to send them a letter that this is not going ahead* (CE20).

Nevertheless, the group is determined to keep going.

> *This comes back to that full circle of responsibility to the group now. When they are putting in work like that you feel responsible. How can you walk away from that?* (CE16)

In our workshops there was also an acknowledgment that there have been improvements in the BEC Scheme over the years, as can be seen from the following statements:

> [BEC] *is still a high pressured job because they want schemes ended so they can tie down the financial things before the year ends, they have improved immensely because they have announced it early on, previously they didn't have to give us as much time. There is still a lot of pressure involved in it but it is workable more than it used to be. Of course people would argue maybe that rather than giving it on a yearly basis they could come to some sort of two or three-year scheme to be guaranteed funds. The fact you have to repeat the whole thing every year is a bit troublesome and tiring* (CE12).

> *It has got a little bit better. I mean the first few years it was torturous….in general, it has definitely improved, but are we saying it is perfect? It is far from perfect* (CE14).

A number of group members expressed the feeling that, while it appears that SEAI is supportive of the role communities can play in the energy transition, and SEAI staff are themselves under pressure, they have little experience of working in the community and so therefore don't understand how it works, or the challenges, and they do not take it seriously enough. This can lead to a feeling by group members of being used rather than appreciated.

> *They have no experience of doing it on the ground and trying to run an energy project. Whether it is retrofitting a building or whatever it is* (CE21).

> *...remember that night at the* [SEAI] *awards? that kind of brought it home for me, this was my feeling on it. Fine, that was grand- we won the national award... but it was interesting all the others that won that were businesses or companies, they were all taken away to have their picture taken and met individually and interviewed* (CE11).

Nevertheless, BEC participants in our study proudly highlighted, in particular, the value of having trusted people from the local community on the ground to enlist and support householders through the process.

> W*hat we are doing locally in our own community is looking out for houses that need upgrading, talking to groups locally and getting them interested in the whole concept of upgrading their homes energy wise...We are interested in our own people primarily…We do leaflet drops and we have done house to house calls…community meetings…notices at mass, we use everything, local paper articles, maybe a couple of photographs…The contacts come in in various ways. For instance, I was at a funeral the day before yesterday and I was in the graveyard, there was funeral praying going on and next thing some fella came over along near me and he said to me 'aren't you involved in the energy project, I want to talk to you about that'…and I said (I have known him), 'give me your mobile number' and when the thing was over the day afterwards I rang him and said 'we can have a chat about it'…He is interested in getting his house ungraded and insulated. He is talking about getting rid of coal and getting a wood burning stove. He doesn't know whether he will do internal or external insulation. He has a lot of things to figure out but he will be going ahead on one of the fronts* (CE12).

Local group members are also around to help people.

> *We have an aging population as well and on the technology side of things, like just the simplest thing, like the control panel for the heating, I spent nearly two hours trying to get Tom showing me how to switch it on and off…He has millions of options with this and he can use it on his mobile phone, but that is totally foreign* (CE9).

Members of the Energy Communities Tipperary Co-op (ECTC) emphasized the importance of using local contractors and providing local jobs. In 2017, 2.8 million was paid to local contractors under the BEC scheme across 11 communities. Their local contractors are well trained and get SEAI approval and they do follow-up calls if anything goes wrong.

> *They get paid first right, so they are not waiting. That is a big thing. If you do government work today, you could be waiting months. But equally they are expected - we had an issue with a house done three or four years ago where somebody came up and one of our contractors had to go out four years later to check the issue was not to do with him. Email came into me, I contacted [our project manager] and so a day later he was out on the site. So that is the response. It is no use to us if someone is coming down from the North. When are they going to come?* (CE11).

ECTC took part in SEAI's BEC pilot in 2012, and since then, have expanded considerably, with a vision of spreading throughout the county of Tipperary. Group members feel that they have learnt a lot over the past six years, and that their experience and feedback has certainly helped SEAI with the development of their BEC scheme and how it works at a community level. They believe that the way they have learnt to do it should be offered as a blueprint by SEAI, and replicated in other areas.

Capacity Support 2 SEAI SUSTAINABLE ENERGY COMMUNITY (SEC) SCHEME

In April 2016, SEAI launched its SEC Scheme and the SEC Network. As explained in Chapter 2, a Sustainable Energy Community (SEC) is a 'community in which everyone works together to

develop a sustainable energy system for the benefit of their community. To do so, they aim as far as possible to be energy efficient, to use renewable energy where feasible and to develop decentralised energy supplies. An SEC can include all the different energy users in the community including homes, sports clubs, community centres, churches and businesses.' The SEC Network is a *'*support framework designed to enable a better understanding of how communities use energy and to save energy across all sectors. The Network's core purpose is to catalyse and support a national movement of SECs operating in every part of the country. There are now SECs operational across all regions of Ireland. Being a member of the Network enables SECs to engage and learn from project site visits, seminars, events, and case studies*'* (SEAI, 2018c).

SECs who have joined the SEC Network are being encouraged to enter into a three-year Partnership Agreement with SEAI (SEAI, 2018d). There are two stages to the Partnership Agreement:

1. Partnership Foundation – 'making a formal commitment to the programme, establishing your SEC's baseline energy use and identifying year one opportunities'.
2. Partnership Implementation – 'follows a 12-month cycle of planning projects, implementing the work and reviewing progress'.

Funding under the SEC Partnership Agreement is split into two stages.

Stage 1 – 'the completion of an Energy Master Plan and Register of Opportunities'.

Stage 2 – 'utilising a Technical Panel and other financial supports for developing your SEC's core competencies in order to implement your Work Plan'.

'Only external labour costs (e.g. consultant costs) are funded under the programme. Internal labour costs, i.e. employees, are not an eligible cost.' SEC Network members who are intending to enter into a Partnership Agreement, are assigned a regional mentor to work with them for a maximum of four days to assist in the preparation of their Stage-1 application.

The groups in our study had different things to say about their experience within the SEC programme. Two participants are very appreciative of the help they are receiving from their SEC mentors:

They have been very active and they have been ready to meet us at regular intervals and they said 'you need a business plan' so I prepared a business plan. 'We want some projections', so we did some projections and in filling in the two requests for quotations from three consultants they helped us (CE24).

They have been good they have also referred us to other people and they run a community networking event which could be very good in terms of building [capacity] (CE25).

Another group is hopeful:

It is getting better every year but it is very, very slow (CE9).

*There are supports now being put in place to help communities and that is going to be very good…meeting other groups is helping…the SEC is only starting***,** *we were the first signed up member and that is only a year ago so it is very, very new* (CE2).

I would be very optimistic (CE3).

However, the following responses are not so positive:

We have had only the few dealings with [SEAI] *and it has been very disappointing…We have made a small application…for 15,000 - we have everything ready all planned ready to go - last April, and we were told that it is being processed and we are still waiting* [Jan 2018] (CE22).

I see this SEC being a complete drain on us more than lending us anything…getting dragged to all these meetings and most of the people at the meetings have no idea what they are doing and then [our mentor] *is saying that we are the most advanced co-op and I am thinking bloody hell if we are the most advanced co-op God help us all…We are certainly doing a lot, I am not putting us down. But at these SEAI things*

this is all [about] *what SEAI want. So we went to these meetings and we kept saying what we wanted. But after two or three times you kind of say 'I am fed up to my teeth with saying it'* (CE17).

SEAI are trying to channel us down a particular route and whether it is appropriate or not based on the effort people can give to it. It should be more individualised packages (CE15).

I personally don't feel it has helped us, we have met a lot of other people but we all seem to be on very different paths. Some people are concentrating on particular issues. Just to give an example, there was an awful lot of conversation about renewable energy. And now the convergence between people who were supporters of PV and the people who are supporters of wind, they are off like this [gestures with hands] *and now they are starting to argue over it. The wind people say wind is 30% efficient and PV is 13% efficient, and PV will give a counter argument and it was weird to watch this going on...Let us put it to you this way, the bottom line is nobody is doing anything. And then you have people with total pie in the sky schemes. You know the ones you say will never fly. And I think a lot of people are wasting time on things...we could be doing far more practical things which have a proven payback with proven technologies, rather than taking off into left field…The thing is…the growth over the last 18 months, so you have so many brand new groups in there that are feeling their way around. They don't know what they are at. They want to be involved they want to do things. That was very manifest when *** and myself sat down with this group of people. They hadn't a clue where to start. They wanted to, they were all very enthusiastic…there is no question there is an awful lot of enthusiasm and commitment out there, but somebody needs to help these groups* (CE14).

There is frustration that the grants available through the SEC programme can only be used to pay outside consultants and cannot be used by the groups themselves, as demonstrated below:

This year we have got 15,000 to do an energy plan, now we won't, that money will come through our accounts to go to a consultant. It will come in one door and out the other (CE2).

SEAI will pay for us to get consultants in to do the work for us but there is no money that we can apply for to pay ourselves to do that work…and I don't know if they actually have money for training for us, is there any money in their pot for training? ...We started the process [of doing the Master Plan] *and then we decided not to. But*

now we are actually being forced down that route because the only way to do a BEC is to do the energy masterplan as an SEC, so they have got us…I think because we are [county] *wide we can get €20,000 but it won't be for us it will be for consultants* (CE15).

We got an approval for €15,000 but then VAT, we have no way of reclaiming the VAT…. we just lose the VAT. Our 15k becomes 12k instead (CE24).

6.2.6 CAPACITY CHALLENGES

Capacity building is crucial for the overall success of participatory processes. Individuals and groups have very different starting points in terms of the knowledge and experience that contribute to effective participation (Head, 2007). Different communities will have differing skills, and different access to funding and other resources. It is important to understand the structural obstacles which get in the way of low carbon action – for instance, people in marginalized, deprived areas, even if they have a high level of concern about climate change, are limited in what they can do by lack of money and not owning their own homes (Catney et al., 2014), or because they lack social cohesion, confidence and organisational resources (Catney et al., 2013). The question of who participates, and who chooses not to also needs to be asked (Cornwall, 2008).

When there is a limited recognition of the uneven capacities and complex nature of "community", then untargeted, generic and reactive policies can result. 'We need to understand not just the factors which lead community energy projects to get off the ground but also, and perhaps more fundamentally, why they do not' – if the focus is only about the 'exemplars', and the success stories, it will be difficult to develop fair policies which allow for equal access to local RE schemes (Catney et al., 2014, p. 726).

The following capacity challenges were identified by our workshop participants – the institutional barriers to creating community renewable energy; the level of voluntary input and personal time required; managing group dynamics and conflict; the complexities of the SEAI BEC scheme; and the difficulties in engaging members of the public.

Capacity Challenge 1 ***INSTITUTIONAL BARRIERS TO CREATING COMMUNITY ENERGY***

Some of the frustration expressed by participants is caused by the fact that so few of the groups have been able to move down the road of creating their own renewable energy. And for those that have, it has been a slow and arduous process. It took the Templederry Community Windfarm ten years to begin generating electricity from their two wind generators. Cloughjordan Ecovillage is creating energy through its biomass DHS system but they have a large solar thermal array which has never worked and which they are having difficulties bringing back into production. The other four groups are very keen to move down the road of producing their own energy, through wind, solar, hydro or biomass power. But, as the following quote indicates, they know that the barriers are many, not least of all the financial risk that has to be taken.

> *There is no point in encouraging community groups to get involved if there are huge expenses they have to incur if they are to achieve anything...We can't afford to take a risk with 50 or 100 thousand euros when there is no guarantee of making that money back* (CE2).

As already outlined, local opposition can also be a disabling factor, as is currently being experienced by the Aran Islands Energy Co-op. But the most pressing barriers mentioned by the groups are government regulation, and the apparent lack of government leadership on community energy. The chances of community energy practitioners creating their own renewable energy are severely hampered by *planning complexities, difficulties accessing the grid* (which they say would be solved if groups were offered a dedicated access route) and *the lack of a feed-in tariff*. It has to be strongly noted that these barriers are the same as those pinpointed by the various policy reports, and experienced by previous community energy groups since the year 1989, as outlined in Chapter 2. Despite the fact that there appears to be some progress, as exemplified by the 2015 Energy White Paper, the report *Assessment of Models to Support Community Ownership of Renewable Energy in Ireland* prepared for SEAI in 2017 (Morris et al., 2017), and the emphasis on community involvement in the new Renewable Electricity Support Scheme

(RESS) (Irish Government, 2018) the very slow policy response is causing cynicism and a lack of trust that promises will actually be delivered on, as demonstrated below:

> *…the way the government seem to want to do it with the last consultation and the renewable support scheme is that they want big business to do it and the way they think they can get big projects through is some community ownership, is 20% or whatever, they are not helping any people who actually want to do it themselves* (CE15).

> *… they have removed the incentive for micro-generation. If you are generating electricity and you have surplus electricity...there is no feed-in tariff. The fact that wind generators, 1-2kW have definitely come down in price to the point where they are affordable but if you are not able to use the power then it is a wasted, it is wasted. I can't understand why they have pulled the plug on that one* (CE14).

If each community owned its own generation and supply, then it changes the whole aspect of our balance of payments. If we import 6 billion of oil and gas each year. If you can work from the bottom up and eradicate the biggest part of that it is a huge thing. Ireland has the potential to be an exporter of green electricity. It has just gotten such bad press and been handled so badly. I don't think any government minister should make any public appearance without saying we are in favour of renewable energy. I think that mind-set has to start from the top down. In many cases it is there from the bottom up. Many groups working away as best they can. If you had a Taoiseach who said 'of course we are in favour', keep getting that mind-set across. You take the fear out of it for planners and local counsellors (CE22).

Capacity Challenge 2 LEVEL OF VOLUNTARY INPUT AND TIME REQUIRED

The UN proposed to run an International Year of Volunteers in 2001 (UNV, 1997), because it was felt that the need for the spirit which mobilises volunteers had never been greater.

In advance of the Year, the Irish government produced a White Paper on a *'Framework for Supporting Voluntary Activity and for Developing the Relationship between the State and the Community and Voluntary Sector*' (Govt, 2000). In the Foreward, Taoiseach Bertie Ahern TD stated that 'voluntary activity forms the very core of all vibrant and inclusive societies'. Active

citizenship was explained as 'the active role of people, communities and voluntary organisations in decision-making which directly affects them. This extends the concept of formal citizenship and democratic society from one of basic civil, political and social and economic rights to one of direct democratic participation and responsibility'. The government's vision for the community and voluntary sector is described as being one where citizens and communities are encouraged to look after their own needs, often in partnership with government agencies, but without expecting the state to meet all its needs (Gaynor, 2011). It could be concluded that such active citizenship covers for infrastructural deficits and poor state services, and 'substitutes self-help for redistribution, self-reliance for state accountability*'* (Gaynor, 2009, p. 2).

Implicit in the concept of volunteering and active citizenship is the availability of people's free time. Fast forward to 2018, and SEAI's SEC Programme brochure *Change The Way Your Community Thinks About Energy*, which states that: 'The Partnership Approach at the core of the Sustainable Energy Communities Programme is a two-way exchange between the SEC and SEAI'. The SEC provides 'local knowledge, time and people'. SEAI provides a 'technical panel, funding & mentoring' and 'skills development'.

However, a very clear message from all the groups in my study is that they do not have enough time to fulfill the tasks required of them. When asked to list the challenges they face, time constraints and the limits to volunteering were stressed repeatedly, as noted below:

To give the necessary time (CE2)
Time involvement (CE13)
As a volunteer the process is time consuming (CE14)
Very time consuming – there is a limit to volunteering (CE12)
Not having enough time to inform the committee what's going on (CE15)
Time constraints, substituting time with the family for time with the co-op (CE16)
Not enough time to do anything you want to do (CE15)
We are volunteers –and its time consuming (CE25)
Organising meetings and bringing people together, that takes a lot of time and energy (CE10)
Filling in complicated forms – very time consuming (CE25)
Time - work versus volunteering (CE23)
We are spending now more time on red tape (CE14)

It is the infringement on your personal time. So, my door, people calling. Because we live in the community, that is the thing, so you find people calling in. You are available (CE11).

[SEAI] *put up the time bank to recognise your time and they give you a monetary value, so that is just rubbing salt into the wounds* (CE16).
Yes, it was. When we read that, we thought we could claim the money (CE15).

Capacity Challenge 3 MANAGING GROUP DYNAMICS AND CONFLICT

Volunteers in grassroots initiatives can face challenges, which include hostility from local people, difficulties securing funding, and 'burn out', 'as the strain of volunteering with limited support takes its toll' (Middlemiss and Parrish, 2010, p. 7559).

An often hidden aspect of voluntary group activity is the time, effort and skill required to manage internal group dynamics, to keep people involved and enthused and to prevent any internal conflict from having a destructive effect. This is particularly difficult to manage if group members feel frustrated and stymied by outside challenges and barriers which prevent action on the ground. Burn out, friction and resignations can result. This challenge was reflected by a number of our participants.

And for new members, at our AGM we encourage people, if they want, to step into the committee (CE18).
And that has led to issues with them parachuting into the group and causing some kind of upset, or that they don't turn up……it is something we have learned as we are going along. (CE16)
Commitment isn't always there (CE18).
There is a certain amount of us of an age here and we have all been involved in different communities. And we have seen how groups can go very wrong and they can go very wrong by too many people coming on board first of all, then the wrong kind of people, the single issue guys, guys who create havoc just giving out about stuff. We have had enough of that…We found as a group what works and you try to keep with what works and we are hoping to build something over a couple of years (CE17).

> *The challenges are to get commitment, to be committed as a group, to give the necessary time, the energy necessary for all of us to pull together. All those things are big challenges. To get along with each other. To resolve disagreements so we don't fall apart. They say in Ireland the first topic on the agenda is the split. Delegating jobs so that everybody has something they can do. And finding the right people to be on the committee. All those things are challenges, to me anyway* (CE2).

But when a group works well together there is a great sense of solidarity.

> *I actually become responsible to the group, you know, we have been together for so long that, no, I feel I have to do this, I don't want to let these other people down because they are so good and they are giving so much. Again it becomes a rolling responsibility… there are so many other good people trying to do their bit. One you are insignificant, but as part of a group...*(CE16).
> *The Meitheal* (CE20).
> *The Meitheal - that is the feel good factor, but again yes, I feel responsible to these guys to keep up the work* (CE16).
> *Thank God* (CE18).

Capacity Challenge 4 ENGAGING THE PUBLIC

Involving people in climate action is difficult, and many are hopeful that community energy will engage people more easily. However, this is certainly not a given. Research exploring one rural community's response to a proposed sustainable energy project in the UK found widespread support for local generation and use of renewable energy, with respondents expecting social and environmental benefits. However, desire for active involvement was lower and residents saw themselves as 'consultees', rather than project leaders. It was concluded that renewable energy projects are unlikely to become widespread without greater institutional support (Rogers et al., 2008). In further qualitative research on the social impacts of a community wood-fuel project as experienced by participants and local stakeholders, there was some evidence of increased engagement with sustainability issues amongst direct participants, but not amongst the wider public. This suggests that local projects 'need to be supported by wider systemic change to maximise impacts' (Rogers et al., 2012, p. 239).

Group members in my research voiced how they are also having difficulties engaging and involving members of the public in what they are doing.

> *The uptake from the individual communities is sometimes disappointing considering the commitment of the directors. Knocking on the doors and you don't get a lot back in return for it* (CE14).

> [There's a] l*ack of awareness amongst the public around community energy…after the first couple of years* [there is] *a drop off from the local volunteers, once they have had their houses done, and then we have a tiny group to build support* (CE13).

And why are more people not getting involved?

Distractions, life is full of options and distractions, I think (CE18).
Convenience (CE19).
The big one is television. Television came in to this country in 1963 and it changed everything. (CE17).
And now it is not TV, it is the smartphones (CE19).

Maybe people feel they are doing something by forwarding on a tweet or replying to an email. You know there are campaigns. Community campaigns online and they can sit at home and retweet and donate money…. that is why they are not here…. I have done my bit, I have got my endorphin (CE15).

I think there are also people who - that is not even on their radar, they are not even thinking about this…I hear a lot of people saying that; 'ah sure everything is bad for you now'. These kind of comments, I don't know what it is. Is it too big a challenge, is it too much? It is a lot of consciousness; you could say the same thing about plastic. For any of us to change our habits around plastic it requires enormous moment to moment consciousness to not, you go in and you buy something, and do you buy it in a carton or do you go to a shop where you can pick up your oranges and stuff? But then I was looking at this last week, it was cheaper to buy it in the net than buy it loose. You start to weigh up whether the plastic bag, which is light, is less bad for the environment that these nets. And it gets wearisome…and there are times when you want to go put on the television, give me a bottle of wine and... (CE19)

6.2.7 CAPACITY SUPPORTS REQUIRED

The capacity supports required by the research participants are:

1. The removal of barriers to the creation of community renewable energy and the provision of appropriate supports
2. The availability of assistance from skilled people
3. Access to core funding for administration and employment

Capacity Support 1 REMOVAL OF BARRIERS AND PROVISION OF APPROPRIATE SUPPORTS

The community energy groups in my study say that they cannot create community energy until they have dedicated access to the grid, assistance with funding, a feed-in tariff and an easing of planning restrictions. The spokesperson for Templederry Community Windfarm quite clearly states in public forums that until these barriers are addressed, he would not recommend new groups to even try to replicate what his group has achieved. Government needs to remove the barriers and to introduce the appropriate supports.

A number of references were made by workshop participants to the enviable services available in Scotland, especially through Community Energy Scotland (CES, 2018), a non-profit, membership based, organization, which provides independent and ongoing advice and support for all aspects of community energy project developmen, and brings communities and policy makers together to address problems or difficulties. Scottish groups are also assisted by Local Energy Scotland (LES, 2018), a government funded consortium made up of five agencies, including the Energy Saving Trust and the Energy Agency, which provides advice and support, and manages and administers the Scottish Government's Community and Renewable Energy Scheme (CARES), offering grants and loans to community energy groups.

There is clear support amongst the community energy sector for the setting up of similar organizations here in Ireland and, in particular, for the provision of a ‘one-stop shop’ where groups could go for help, whether this is within an existing agency or a separate body.

I think SEAI should have a dedicated department, they are a very broad umbrella group, they have so many parts it's very hard to know exactly...but I think there should be a dedicated department to encourage local community groups, community based organisations to generate and show them the planning, legal, and other hurdles (CE9).

Capacity Support 2 ASSISTANCE FROM SKILLED PEOPLE

When asked about their achievements, two groups were very clear that the fact that they were still operational was an accomplishment.

Two years old now! (CE17)

Yes, one of the achievements that stands out to me is that we are still here. I constantly remind myself of that and look I'm repeating it again but it is worth repeating (CE16).

They attributed their survival to the help provided by outside people with relevant experience, skills and time.

So they nurtured us and you know, they continue to do so…keeping us together, getting cohesion, organising meetings, the room, so we could actually sit down and discuss stuff instead of all that. She is a great facilitator she broke things down for us. Years of experience with these guys (CE16).

*An achievement of our group is that we lasted this long in spite of all the hurdles - that is an achievement in itself... if we had not had *** in the first couple of years we would have become a cropper, absolutely, there is no way we would be here* (CE11).

*Who was a big help to us along the way was the agencies and *** who…worked with LEADER as the development officer and he helped us in facilitation sessions early on…He was paid by LEADER and energy became part of his job, LEADER accepted that energy was a developmental issue within the community and they said OK we are paying you to work and if you work on energy that is fine because that is aligned with our thinking…*** would go in to new communities and call some sort of a meeting and try and pull a number of people together and then he would ask for presenters from our community to go out with him some night and have a chat with a new community about what we did and to tell him about our experiences and what is there to be gained as far as we are concerned. To say, 'you might consider something like that?' That is the best selling process…*** is a brilliant guy on the job. To go in to a new community to settle people down and get them talking about what their needs are without any hassle. A good communicator on the ground. Then he would try to put a step process in place…I am talking about a huge effort because *** used to come out to our community at 8 o'clock and it could be half ten when he is going home. It is very hard to get someone from the council to show that level of commitment. You can't ask them to do it because it is way beyond their remit…The support we get from the agencies has been essential to grow and you need the agencies to be supported money wise, financial wise and staff wise. Need that. That is not there at the moment it has got worse. It has got worse* (CE12).

If advising another group on how to replicate, and how to expand the number of local communities involved in their BEC scheme, and their co-operative, ECTC members were clear that the role of project manager was crucial.

> *Clone* *** (CE13).
>
> *That is exactly what we have said to them many, many, times. You have to find a competent person* (CE14).
>
> *But a project manager, who is also I would say has some sort of construction, BER background who understands the technology, a technician something like that* (CE11).

This was echoed by people in two of the other groups.

*…basically, the woman who does the Energy Tipperary Communities*** she is the lynchpin of the thing* (CE10).

*We want to have a ***. And we want to get to that position where we have a *** who is doing the stuff…we as a group went down to visit with her at the end of December, just before Christmas, they were very kind, they got in a bunch of people from the various groups so we said that is where we need to be* (CE24).

A number of our workshop participants suggested that local people could be trained up with BER qualifications to provide objective energy audits, follow up support and energy coaching for householders on behalf of the community energy groups.

*One night me and *** went out to see how people were getting on having done the job. To see were they happy with all aspects of it. We went in to one house and this lady and the place was real warm and we had a good chat and she said the place was lovely real comfortable. *** looked at me and said it is awful warm. I'd say it must have been 25 or 26 degrees. I said to her 'you have it turned up too high you are spending a lot of money'. And she said 'ah sure my son in Dublin he pays the bill'…she was not concerned with energy, she was concerned with being comfortable. That is an example now. We ended up by making some adjustments on the house. We said 'why don't you change it up and down?' She said that she was told to leave it fixed. You need someone to call to someone like that fairly regularly and update her on it……I think it is a job and it is not being done* (CE12).

Capacity Support 3 CORE FUNDING

One of the stereotypes applied to voluntary organisations is that they are 'flexible, idealistic, rambling groups of enthusiasts who carry out good works on a wing and a prayer' (O'Donovan and Varley, 1992, p. 20). But even the best-resourced communities require support if they are to mobilise local resources towards sustainable ends (Robbins and Rowe, 2002). There is general agreement that community energy groups can have tangible benefits if given the appropriate supports (Hargreaves et al., 2013a, Seyfang and Haxeltine, 2012, Seyfang et al., 2013), and that their efforts need to be supported by wider policy and infrastructural changes, aimed at addressing the structural and social barriers, which cannot be overcome by a group's eagerness to 'make a difference' (Hielscher, 2013, p. 18).

Agencies and local authorities should be more proactive in supporting the development of local energy infrastructure. Community energy must feature across policy agendas and a co-ordinated support programme, which recognises the importance of building local community-led partnerships is central to opening up energy production and supply (Catney et al., 2014). National policy must adopt an enabling role, which allows and empowers communities to act freely as 'producers, owners and partners in energy ventures…to broker local communities into national energy market reform' (Julian and Dobson, 2012, p. 5).

This call for core funding for community-based activities is nothing new. The argument around proper funding of the community development sector in Ireland has been on-going since the 1980s, when it was accepted that community development groups, especially those in areas of extreme poverty and social exclusion, should receive a reasonable amount of core funding. In the absence of such resourcing, it was felt that the goal of broad community participation would be difficult, if not impossible, to achieve. State funding bodies, such as the Combat Poverty Agency (CPA) and the Community Development Programme (CDP), were established. In 1989, the CPA claimed that secure funding was one of the key criteria for an adequate and comprehensive state policy for community development (O'Donovan and Varley, 1992).

In 2009, the CPA was abolished and, in 2015, the CDP scheme was replaced by the more commercialized Social Inclusion Community Activation Programme (SICAP) which, while having a limited scope for funding community activity in disadvantaged areas, is more focused on the delivery of services with numerical targets. 'The consensus that the state should fund community development appears to have broken down'. There appears to be a line of thinking that 'if voluntary and community organizations wished to contribute to participation, policy and practice, they were welcome to do so, but entirely at their own expense' (Harvey, 2015b, p. 31).

Similarly, but to a much greater degree, the environmental sector in Ireland has always been struggling for money. A recent study carried out for the Irish Environmental Network (IEN) (Harvey, 2015a) has shown that between 2011 and 2015 funding for Irish environmental non-governmental organizations (NGOs) fell from €8.2m to €5.5m, down by 32.3%. The Irish

environmental sector is very small compared to the equivalent in Europe. Overall, Irish government funding, comprising grants and contracted work, was €3.1m in 2015 and hasn't increased since. In 2011, government funding for core operations, provided annually through the IEN, totalled €420,000 and by 2015 had decreased slightly to €415,000. This amount was spread between IEN's 31 members, leaving an average of about €11,000 per group. These figures are 'remarkably low' compared to Northern Ireland and the UK. Additionally, in Ireland, neither lottery funding or philanthropic bodies, apart from the National Toll Roads (NTR) Foundation are interested in supporting environmental groups.

Environmental groups are advised to apply to the Local Agenda 21 Environmental Partnership Fund (LA21 EPF), which promotes sustainable development by assisting small-scale environmental projects at local level. The projects involve partnership arrangements between local authorities and various local groups including community groups, schools and environmental NGOs, but grant amounts are very low. 'The value of the scheme is enhanced by the voluntary effort that it facilitates' (DCCAE, 2018a). Just over €450,000 was provided in 2017 to 834 projects around the country. The lowest grant was €60, the highest was €3,500 and most were under €500.

It can be concluded that there is little scope for funding community energy groups from either the community development or environmental sectors. Some think that the LEADER programme is a likely source of funding. However, the programme for 2014-2020 focuses on social inclusion, poverty reduction and economic development in rural areas, and so resources are targeted at economic development, enterprise development and job creation; social inclusion; and the rural environment. Renewable energy is a subsection of the latter category but, in 2017, only €30,000 was available in this section for the South East Cork area, from Midleton to Skibbereen.

As already outlined, SEAI provides a limited mentoring service to Sustainable Energy Community (SEC) groups and funding is available for the development of a Community Energy Master Plan. However, its guidelines state that 'only external labour costs (e.g. consultant costs) are funded under the programme. Internal labour costs i.e. employees are not an eligible cost'. Applicants are also told that 'it is essential that the SEC is fully involved in the Energy Master

Plan process. Applications for funding to outsource the entirety of the Energy Master Plan will not be successful' (SEAI, 2018d), which means that core funding is not available but voluntary input is essential.

It is important to state that, while a lack of core funding is a big problem, it is not necessarily a panacea for small voluntary organisations. There have been heated debates about the change that occurred as community development moved from being a largely voluntary activity in the 1980s to providing widespread well-paid employment in the 1990s. On the one hand, there is concern that the process has caused de-radicalisation, a co-option of voices that would have challenged the status quo, the de-politicising and neutering of paid 'qualified' workers at the expense of voluntary activists, and the relegation of volunteers to more subservient roles because of lack of skills. On the other hand, it is recognized that professionalisation has been central to the development of identity and status, which allows a group to be seen as a 'partner' and gives it a greater say in decision making (Powell and Geoghegan, 2004).

Funding gives rise to concerns about governmentality (Foucault, 2007), whereby civil society groups are shaped to fit the needs of the governing body. To be good partners, 'voluntary bodies or user groups must be able to demonstrate measurable outcomes from their work, they must have performance indicators, a vision, a mission statement, a business plan and so on'. They can receive funding and support to develop the skills necessary to take part in the new partnership, but along the way they will have been transformed into 'compliant collaborators' (Ling, 2000, p. 89).

Taking on paid workers also requires good governance. The transition from being a self-help group to one with paid staff, can create tensions between the volunteers and employees and working relationships between volunteers and paid 'professionals' can become strained. Poor pay and conditions, a lack of job security and career development opportunities and the absence of career structures can all lead to staff turn-over (O'Donovan and Varley, 1992).

Nevertheless, small voluntary groups find it very hard to survive, and to develop their work in the absence of any funding at all. Lack of money for administration, expenses and running costs was a challenge common to all eight groups in our study.

> *The big difference when you are a volunteer co-op, you don't have anyone paid to do a, b or c. That poses huge challenges and then, in other groups I have been in, there is usually someone managing a lot of the day to day stuff and then the Board or Management Committee or whatever, we come in and make decisions around all of that but there is somebody there five days a week doing something, doing all that* (CE17).
>
> *What community groups like us need is a regular guaranteed income, a very small amount, to cover the administrative costs to run a regulatory body where you need to have accounts audited every year and you might have to pay other basic costs like…to go to a conference in Galway or Athlone of wherever. You need to have 1000 euros guaranteed to you to cover all those costs from somewhere* (CE2).
>
> *Money has to be made available for basic project management because organising meetings and bringing people together, that takes a lot of time and energy and if that can be supported and basic admin tasks without onerous funding criteria and applications, I think that would make a huge difference* (CE10).
>
> *There is also this sense that we have to find a way whereby we are not every year chasing after funding, even €5,000 for an administrator. I understand if it is a new project and you have to put the leg work in. But there is a basic housekeeping that I think there should be somewhere where we know for the next three or even five years we don't have to go chasing somebody* (CE18).
>
> *A pick and mix funding option…even* [for] *paper, or a banner, or our own stand so we can promote ourselves to people - that is where all the money goes* (CE15).

While some of the groups were thankful for the help they were receiving from the SEC mentors, this was not seen as being nearly enough, and they found it very difficult when money for

consultants moved in and out of their bank accounts and nothing was available to cover their own costs. There was a consensus that funding needed to be guaranteed over a specific time for financial security and to allow for forward planning.

There were differing views as to whether any potential funding should include the payment of staff or just cover administrative, travel and other 'out of pocket' expenses. There is a recognition that employing someone brings new responsibilities for small groups and subsequent activities may be determined by the requirements of the funding body.

> *Last year I spent probably 50% of my time on this volunteerism and my business started to go south…So the point is it is volunteer work but it has to be done, you start paying people…it is not an easy transition* (CE25).

> *You are in to a whole other discussion there once you no longer have a voluntary committee…it is a bit like the GAA wondering whether they should pay their players. It changes the dynamic. You look at Galway County Council - who has the real power? The employed staff like the manager or the elected counsellor? - you know, and in our community development cooperative here it is the same. Who has the real power, the elected representative or the staff*? (CE2).

A number of participants hoped that their co-operative would make money so that they could remain independent financially.

> *The idea of setting up the co-op originally for me was because I worked for community groups before and they are always stifled by way of funding and they can't implement this, but with the co-op we can generate money so you are not always waiting for the next hand out, you are self-fulfilling…We are allowed to generate money for projects or for paid workers, so we can get away from this hand out* (CE16).
>
> *…getting tied into funding and then it sorts of snarles you up so that you are hemmed in by having to tick boxes and do things in particular ways…I think there is a great clú*

> *[honour] in putting our shoulders to the wheel and really working together without some agency requiring you to really be doing it to tick their box* (CE19).

Other participants proposed the idea that a suitably skilled person could be employed on a full-time basis by another agency in the area, and that that person could then assist them in their work.

> *We are not looking for someone at €100,000 a year. If there was somebody coordinating within [the county], my vision of it is very straightforward. Every county has a co-op umbrella and then one co-ordinator inside there at the very minimum. Paid to manage things within that county. That could be the same for Clare, for Galway and so on* (CE17).

> *I suppose if* [the worker] *was employed by ourselves we would have more direct influence in what he is doing. But I wouldn't see a big difference if you had the right person in the job it would not matter too much who is paying them. You first of all decide what the job is and if he is somebody who likes that sort of work and has the skills to do it he will become interested. It doesn't matter who is paying him at the end of the day* (CE12).

Ultimately, there needs to be a recognition and value for the 'soft stuff'.

> *Even when we were developing the eco-village concept, we went and we identified the key influencers in the village, the local politician and we had community consultation, we did monthly newsletters, we delivered them to every house, 'this is where we are at, this is what we are doing'…it is the soft stuff that is not seen but has to be done* (CE21).

CONCLUSION

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) reported that the coming years are critical if we are to stabilise temperatures below 1.5°C (IPCC, 2018). However, Ireland is only likely to achieve a 1% reduction in greenhouse gas emissions by 2020 compared to the target of 20% (EPA, 2018), and it has, more recently been stated that we are falling further behind in decarbonising our economy, and that this trend shows no sign of reversal (European Commission, 2019).

This thesis is the culmination of research carried out as part of the interdisciplinary and transdisciplinary research project '*Responding to Climate Change and the Energy Transition: The Experience and Capacity of Communities in Ireland',* which ran from January 2015 until March 2018. As outlined in Chapter 4, the research has drawn from the methodological approach of grounded theory, and has been influenced by the principles of second order transformational, participatory and engaged research. An adaptive and reflexive approach was taken throughout. The research methods were qualitative and included the building of trusted relationships with key people in the policy and community energy areas. Extensive fieldwork was carried out during the research period, involving a series of informal discussions, and the attendance at, and participation in, a range of meetings, seminars and workshops. A workshop was organised with community energy practitioners and policy makers in 2015, a series of semi-structured interviews followed and, towards the end of the project, five workshops were held with representatives of six community energy groups.

Much of the policy focus on climate action to date, whether in Ireland or internationally, has presumed that individuals act rationally, and that, once they know the facts, they will act in their own self-interest.

This research has moved the attention away from the individual and has endeavored to:

- examine the potential for community action on climate change and the energy transition
- identify existing social, institutional and infrastructural barriers to such collective action, and

- pinpoint the supports required to develop effective community capacity, in particular, for community energy projects.

The following key questions have been used as an overarching guide:

1. What are the challenges affecting people's response to climate change and the energy transition?
2. What are the theories and principles which help to explain effective citizen and community engagement?
3. What is the Irish experience of community energy?
4. How do we support the development of community capacity to engage in the energy transition?

In an effort to fully understand the issues and theoretical background pertaining to community engagement and climate action, and to provide a full contextual picture for my qualitative research, I read widely into the research literature and carried out desk research.

Chapter 1 explored the challenge of responding to climate change, and highlighted the fundamental problem - most people are not making the required changes to curb their own greenhouse emissions, and many are resisting renewable energy developments in their area. The chapter highlighted that there are many infrastructural, institutional and social barriers to climate action. Citizens are likely to react negatively to renewable energy developments in their area if they are excluded from decision making and feel they are being treated unfairly, or if they receive no obvious benefits. Moreover, behaviour is affected by social influences, and people are 'locked into' unsustainable social practices, which explains why focusing on the individual 'rational actor' has, to date, proven ineffective. I concluded that engaging people in climate action collectively - in communities – is likely to be more successful than trying to work with individuals in isolation. Involving people in decisions that affect them, and which provide tangible benefits, is more likely to engender support than opposition. Community energy is one such avenue.

Chapter 2 explains 'grassroots' initiatives, and gives an overview of community energy and its benefits and challenges. Desk research was carried out to understand the historical context of

community energy in Ireland. This chapter demonstrated that policy support for the sector has been inconsistent over the years, and has not translated into effective practical or financial support for groups on the ground. In 1999, the Green Paper on Sustainable Energy strongly endorsed the production of renewable energy 'to meet one's own needs' and the development of projects by local cooperatives and other representative organisations. Yet, in 2011, the Sustainable Development Council, *Comhar*, released a report which reiterated the four main barriers to community renewable energy in Ireland – insufficient policy framework; inadequate support structures; lack of access to finance; and grid and planning delays. The message I received during my early fieldwork outings was that the same barriers and challenges were present and, while participants and groups displayed enthusiasm and resilience, it was obvious that the Irish community energy sector was still struggling with capacity issues, which affected their ability to function and survive.

Chapter 3 outlined four key concepts which have provided a theoretical basis for this thesis: Energy Transition; Participation; Social Capital; and Capacity. An energy transition, away from fossil fuels and towards renewable alternatives, is underway and depends on the active engagement of citizens and communities. This will require a new kind of energy democracy and energy citizenship whereby citizens become 'prosumers', who are simultaneously producers and consumers of energy. Active citizenship entails active citizen participation. Effective participation involves power in decision making, rather than just consultation, placation, or the provision of information. It requires good governance, skill, focused resources, and participatory processes, which ensure that decisions are not made in the interests of some citizens over others. Participation fosters trust and empowerment. Community often relates to culture and identity and community boundaries, whether physical, legal, religious or ethnic are important as they mark one community from the other. While the forces that push communities together can also drive them apart leaving them inward looking, exclusionary and reactionary, when it works, a 'sense of community' adds to people's well-being and to their feeling of belonging. Positive notions of community are often aligned with the concept of social capital. Social capital refers to connections among individuals, to social networks and the norms of reciprocity and trustworthiness that arise from them. It can bond homogenous groups together or provide the bridge between more diverse groups. It can link people at different levels of power or provide the

bracing between, and across, scales and sectors. Too much bonding and too little bridging can be destructive, and can smother creativity and innovation. Too much bridging and too little bonding can be isolating. While the theory of social capital certainly has its merits, there is a lack of clarity on how to measure it, and how to create it within a community setting. It is proposed in this thesis that the focus needs to be shifted from social capital and onto the 'level of agency' that actors possess which will determine whether they are able to benefit from 'good', and withstand 'bad', social capital. The emphasis needs to be on the capacity they have to take control of their circumstances, exercise power, achieve their goals, and enhance their lives, whereby leading to their empowerment and feelings of self-efficacy. The capacity of community based initiatives on sustainability depends on the resources and supports available, and on the opportunities and challenges arising locally, or from the wider cultural and political context. Drawing on the work of Middlemiss and Parrish (Middlemiss and Parrish, 2010), I developed a framework for energy communities called *Community Response Capacity* which includes cultural, organizational, institutional, personal and practical capacities, each of which needs to be developed for a group or community to thrive.

The research findings have been divided into two chapters. Chapter 6 used graphical illustrations to exemplify the fieldwork – the informal discussions, seminars, workshops and presentations – undertaken as part of the research process. The chapter culminated in a series of questions, observations and themes which arose from these engagements and experiences and which subsequently influenced the design of the community energy workshops.

Chapter 7 outlined the findings from the *Community Engagement on Energy* workshop organized with community energy practitioners and policy makers in 2015. The participants gave a very clear overview of what was required from policy to support the development of the community energy sector and raised crucially important issues around social capital, energy citizenship, capacity building and the need for support and core funding for grass-roots groups, that helped to shape my subsequent research.

Chapter 7 also outlined the results from the five workshops held with representatives of six community energy groups in late 2017 and early 2018 and showed that, while all groups aspire

to creating their own renewable energy, only Templederry/CRES is currently selling energy to the grid. Cloughjordan Ecovillage has a biomass district heating system serving its residents. The other groups are involved in retrofitting and upgrading building infrastructures, largely because this is the only source of state sponsored support. The feedback received from participants at these workshops confirmed the existence of, and elaborated upon, the restrictive barriers and capacity challenges outlined in the initial workshop.

In summary, the key findings of this research are as follows: There is considerable policy and community interest in community energy; significant barriers to community-owned production of RE exist, including planning complexities, difficulties accessing the grid, lack of feed-in tariff, and financial risks; groups have difficulty engaging members of the public, and local opposition can be a disabling factor; volunteers can only do so much; capacity supports are urgently required, including the removal of barriers to the community-owned production of RE, access to on-going core funding, assistance from skilled people, and the availability of a 'one-stop shop' where groups can go for help.

A distillation of the research findings has also led to a number of recommendations which I hope will contribute to the development of policy and the practice of community energy in Ireland over the coming years: Strong, continual and visible national leadership on climate action is critical; a range of approaches to support and encourage community energy should be developed in response to the varying capacities of different communities; mentoring in community development and community engagement is essential; reliable, multi-annual sources of core funding should be made available; and existing barriers to community energy should be addressed.

A full list of 'Implications for Policy' and 'Recommendations' is included in Appendix 4.

Policy Impact

During the course of my research and the writing of this thesis I was able to contribute, both directly and indirectly, to a number of significant policy developments, including the 2015 Energy White Paper, the 2018 Renewable Electricity Support Scheme (RESS) and the release in

April 2019 of the ambitious Joint Committee on Climate Action (JCCA)[2] report *Climate Change: a Cross-Party Consensus for Action* (JCCA, 2019). In the case of the 2015 Energy White Paper, I assisted with the drafting of the Citizen Engagement chapter and invited one of the authors of the report to our 2015 *Community Engagement on Energy* workshop. In the case of RESS, I participated in an influential SEAI research workshop on community energy support models (Morris et al., 2017). Most recently, as part of a MaREI delegation, I participated in a JCCA hearing where the key findings of this research were presented. The JCCA report clearly reflects and acknowledges my contribution, particularly in relation to the call for more financial, capacity and intermediary supports for community energy groups and SEC's and the removal of barriers, as is evident from the following quote:

'*…the committee heard about how energy communities are struggling, and require resources and core funding from Government…and many practical barriers to community energy exist, barriers which can be removed through policy changes. Specifically,*

1. Core funding is lacking and needs to be addressed. Reliable, multi-annual sources of core funding for administrative costs and for staffing of community energy groups is essential for groups to expand and to function effectively.

2. *Mentoring in community development is currently lacking and should be provided as essential complements to technical and financial support. There is an urgent need for the provision of trusted intermediaries who can provide funding, finance and information supports for initial stages of development and support with planning and construction*' (JCCA, 2019, p. 51).

The Unique Contribution of this Thesis

This thesis is unique from an Irish policy and climate action perspective, in that it provides a comprehensive analysis of the community energy sector in Ireland, both past and present.

In the UK and other European countries, a substantial amount of academic research has been carried out into community energy but, here in Ireland, it has been quite limited. Reports of significance include *To Catch the Wind* (REP, 2004); *Community Renewable Energy in Ireland: Status, Barriers and Potential Options* (Comhar, 2011), and the NESC report *Wind Energy in*

[2] JCCA comprised members of the Dáil (Lower House of the Irish Parliament) and the Seanad (Upper House). The cross party Committee was established to consider the report and recommendations of the recent Citizens' Assembly entitled *How the State can make Ireland a Leader in tackling Climate Change*. The report will contribute to an All of Government Plan, due to be released in May/June 2019.

Ireland: Building Community Engagement and Social Support (NESC, 2014). More recently, qualitative research (Cogan, 2017) was carried out on two Irish community energy projects – Erris Sustainable Energy, and the Energy Communities Tipperary Co-operative. My research draws from, and builds on, these excellent pieces of work and, owing to its greater scope and depth, adds considerably to the current level of knowledge on community energy in Ireland.

This thesis is unique from a research perspective because it has identified, explained, and refined four key concepts: Energy Transition; Participation; Social Capital; and Capacity. It has demonstrated how these concepts link to each other - the *energy transition* relies on community *participation*, which in turn can both develop, and benefit from, *social capital*. However, social capital is not enough. What is required is a focus on the level of *capacity* the energy communities possess, which will determine whether they are able to thrive and to benefit from 'good', and to withstand 'bad', social capital. Following on from this, I developed a *Framework for Community Response Capacity* using the following categories: cultural, organisational, institutional, personal and practical. The results of this research have been presented in Chapter 6 as *Capacity Challenges* and *Capacity Supports Required*. These have been illustrated through the two tables below across the five aforementioned capacity typologies in the capacity framework. Through fitting the research results to the capacity framework, insights can be drawn from where capacity is, and is not present, in relation to challenges experienced, and supports required, across the different capacity classifications.

Capacity Challenges	Cultural Capacity	Organisational Capacity	Institutional Capacity	Individual capacity	Technical / Practical Capacity
Institutional barriers to creating community renewable energy	**Diminishing of local community capacity due to emigration and rural depopulation (e.g. can we field a hurling team next year?)**	**Structural obstacles (gaps in social cohesion, confidence and organisational resources)**	**Very slow policy response to enable community energy. Externally imposed administrative burdens**		
Level of voluntary input and personal time required			**Active citizenship expected to compensate for infrastructural deficits, and poor state services**	**Time constraints and the limits to volunteering were stressed repeatedly**	**Grants available through the SEC programme can only be used to pay outside consultants and cannot be used by the groups themselves**
Managing group dynamics and conflict		**Significant voluntary time, effort and skill are required to prevent internal conflict which is difficult to manage if group members feel stymied. Burn out, friction and resignations can result.**			
Lack of experienced, supportive intermediary agencies across the country		**Need for diversified network of middle actors providing functions along different capacity classifications**	**Need for policy support for development of intermediary expertise**		**Developed projects, such as Cloughjordan Eco-Village, can act as intermediaries with regards to knowledge exchange and capacity building through hands on experience**
Difficulties in engaging members of the public	**Volunteers in grassroots initiatives can face challenges, which include hostility from local people**		**Need wider systemic change to increase social learning and public support for community energy projects**	**Changing habits requires significant moment to moment consciousness**	

Table 3: Mapping results of *Capacity Challenges* to capacity framework

Capacity Supports Required	Cultural Capacity	Organisational Capacity	Institutional Capacity	Individual capacity	Technical / Practical Capacity
Removal of barriers to the creation of community renewable energy and the provision of appropriate supports			**The community energy groups in this study say that they cannot create community energy until they have dedicated access to the grid, assistance with funding, a feed-in tariff and an easing of planning restrictions.**		
Availability of assistance from skilled people and intermediaries		**The role of project manager is crucial, as is the community development role (positioning energy as a developmental issue within the community)**	**There is clear support amongst the community energy sector for the setting up of similar organizations here in Ireland to those in Scotland, in particular Community Energy Scotland, Local Energy Scotland and CARES.**		**Community groups recommend that SEAI should have a dedicated department to encourage local community groups and community based organisations to encourage and support them in overcoming planning, legal, and other hurdles.**
Access to core funding for administration and employment		**While a lack of core funding is a big problem, it is not necessarily a panacea for small voluntary organisations**	**While community energy groups can have tangible benefits if given the appropriate supports through wider policy and infrastructural changes, aimed at addressing the structural and social barriers – a group's eagerness to 'make a difference' is not enough**		**Recognising that employing someone brings new responsibilities for small groups, in addition to the SEC mentors, a suitably skilled person could be employed on a full-time basis by another agency in the area, and that person could then assist them in their work**

Table 4: Mapping results of *Capacity Supports Required* to capacity framework

POSTSCRIPT - October 2020

My PhD research began in January 2015 and ended in March 2018, in the middle of a very interesting period in Irish political, social and environmental history. It occurred after the most challenging global economic recession in decades, and before the unprecedented impact of the COVID 19 pandemic and the installation of our current government which has made very strong climate change commitments. The following is an outline of the key events which took place during this tumultuous time.

Towards the end of Ireland's Celtic Tiger years (1995-2007) - an extraordinary period dominated by profligate spending and credit card consumerism - climate campaigners, advocates and environmentalists were relieved to see an apparent rise in public concern for climate change and a strengthening call for an appropriate policy response. Internationally, Al Gore's 'An Inconvenient Truth' (2006) was a box office success and the world took note when the renowned British economist, Nicholas Stern, recommended that it would be better to act sooner rather than too late. In the run up to the 2007 Irish General Election, hopes were high for a 'Green Wave' and, while this never materialized and the Green Party again only won six seats (Rau, 2010), expectations mounted when they entered government for the first time as part of the Fianna Fáil-led coalition. Soon after, the Party received its highest poll ratings (at that time) of 8 per cent. 'Then the economic bubble popped. By February 2011 it had zero TDs, zero senators, zero MEPs, three councillors and no State funding' (McGee, 2020).

Effectively, the global financial crash of 2007-8 completely destabilised the Irish economy, the banks collapsed, the public deficit ran out of control and the IMF was called in. Austerity measures were opposed by the Greens and they collapsed the government in January 2011. The Party was blamed for propping up a reckless Fianna Fail, they lost all their seats in the February election and were cast into the political wilderness to begin the long process of re-building.

While the recession ushered in a long period of belt tightening and new car sales plummeted, climate change fell off the public, policy and media agendas. Austerity had life changing negative impacts on many Irish citizens. As the 'finite pool of worry' theory posits, when concern about one type of risk increases, concern about other risks go down (Weber, 2006). When the worst of the recession had passed, climate emissions began to rise again.

Nevertheless, in May 2014, Minister Alex White, as part of the Fine Gael/Labour Coalition (2011-2016), shone a ray of hope when he launched The Green Paper on Energy Policy in Ireland and commenced a public consultation process. Priority 1 for the Green Paper was *Empowering Energy Citizens*. Approximately 1,240 responses were made in writing, with just under 800 submissions addressing the questions relating to Priority 1. As part of the process, ten consultation seminars were also held, with six in Dublin and one in Cork, Moate, New Ross and Sligo which together attracted about 660 participants (DCCAE, 2014).

My PhD research for this thesis began in January 2015, in the middle of this consultation process.

The Energy White Paper was launched in December 2015 and the excitement within the environmental and community energy sectors was palpable, particularly as it reflected the input made by so many when it proclaimed that the energy transition 'will see the energy system change from one that is almost exclusively Government and utility led, to one where citizens and communities will increasingly be participants in renewable energy generation, distribution and energy efficiency' (DCENR, 2015a, p. 9). 'Community-level energy efficiency and renewable energy projects, using a range of technologies, will play an important role in the energy transition…There will be opportunities for communities to collaborate, including with local government and energy agencies, to develop community energy efficiency and renewable energy projects' (*ibid* Chapter 4).

In the same month, in an unprecedented move, 195 countries came together to support The Paris Agreement within the United Nations Framework Convention on Climate Change (UNFCCC). Commitments were made to keep climate change "well below" the 2°C

temperature threshold, and to work towards a target of 1.5°C. Under the agreement, climate action is now anchored within the context of international law (UNFCCC, 2018). Ireland ratified the Paris agreement on 4 November 2016, the day the deal came into force, whereby giving 'a strong signal to the people of Ireland and to the international community of our continued support for the Paris Agreement and our own commitment to climate action' (DCCAE, 2016).

In April 2016, the SEAI launched their Sustainable Energy Community (SEC) programme at a seminar at the SEAI Energy Show in the RDS, Dublin. To coincide with it, Friends of the Earth held a workshop in an adjoining room entitled *Community Energy – What, Where and How Much?* Both events were very well attended and enthusiasm levels were high.

The 2015 Energy White Paper proposed that a National Energy Forum (NEF) be established. In early 2017, Denis Naughten, Minister for Communications, Climate Action and the Environment, launched the National Dialogue on Climate Action, which subsumed the role envisaged for the NEF. One of the aims of the National Dialogue was to 'create awareness, engagement and motivation to act (locally, regionally and nationally) in relation to the challenges presented by climate change' (DCCAE, 2018b).

In mid-2016, the Irish government established a Citizen's Assembly (Citizens Assembly, 2018) to focus on a number of important issues, including climate change, which has proven to be a very effective exercise in deliberative democracy (Devaney et al., 2020). The module on 'How the State Can Make Ireland a Leader in Tackling Climate Change' ran over two week-ends in September and November 2017 and resulted in an ambitious list of final recommendations.

My research ended in March 2018, but I continued to feed its findings into the policy process.

A cross-party Joint Oireachtas Committee on Climate Action (JCCA) was set up in July 2018 to consider the recommendations of the Citizens' Assembly and it held a series of hearings with invited speakers from key sectors. At the end of March 2019, the Committee published

its report, entitled *Climate Change: A Cross-Party Consensus for Action* (JCCA, 2019). In June 2019, the then Minister for Energy, Communications and Climate Action Richard Bruton produced the Climate Action Plan 2019, which recognized that 'Ireland must significantly step up its commitments to tackle climate disruption' and set out 'an ambitious course of action over the coming years' (DCCAE, 2019).

Following on from commitments made in the Climate Action Plan and the 2015 Energy White Paper to support energy citizenship, it was hoped that Ireland's first Renewable Electricity Support Scheme (RESS 1), a competitive auction process to determine which generators receive support over 15 years, would include a community component. Between December 2019 and February 2020, in an encouraging example of how a government department and the community can work together, a series of well attended workshops were led by Enda Gallagher of DCCAE, in collaboration with leaders of the community energy sector, to deliberate on how to ensure that citizens and community owned energy projects would benefit from RESS.

In February 2020, a general election delivered a shock result, with Fianna Fail winning 38 seats, Sinn Fein 37, and Fine Gael 35. The Green Party won 12 seats, with Labour, Social Democrats and Solidarity-People Before Profit each winning 6. Difficult negotiations to form a government then began.

On 12 March 2020, the COVID 19 pandemic hit Ireland when a nationwide lockdown was introduced, followed by a series of stop-start restrictions in an effort to save lives and stave off the worst effects of the virus. While not wanting to minimize the hardship experienced by many, the dramatic decline in activity and travel during the initial lockdown resulted in greenhouse emissions reductions. 'The demand for electricity was down by about 15%, diesel consumption was reduced by 20% and petrol sales fell by 30%' (Lee, 2020).

However, as outlined in the introduction to this thesis, we have a lot of ground to cover. In 2018, projections indicated that 'at best, Ireland will only achieve a 1% reduction by 2020 compared to a target of 20%' and is 'not on the right trajectory towards decarbonisation in the

longer term' (EPA, 2018). In 2019, the European Commission stated that Ireland was falling further behind in decarbonising our economy and engaging on a path of sustainable development, and that there were no signs yet of a reversal in trend, which could become costly (European Commission, 2019). In July 2020, the EPA projected that Irish emissions, with full implementation of the Climate Action Plan, will decrease by an annual average reduction of 3% between 2021 and 2030. However, in order to remain below the 1.5°C limit required by the Paris Agreement, systemic change is required. Short term emissions reductions due to Covid 19 will not negate the need for long term, targeted action across all sectors (EPA, 2020).

On 26 June 2020, nearly 140 days after the General Election, and in the midst of the COVID pandemic, Fianna Fáil, Fine Gael and the Green Party approved a deal to go into an historic coalition. In the *Programme for Government – Our Shared Future 2020*, the parties committed to an average 7 per cent per annum reduction in overall greenhouse gas emissions from 2021 to 2030, which is a 51 per cent reduction over the decade. 'As we set our society on a trajectory towards net zero emissions by 2050, it is vital that there is adequate time and effort devoted to working with communities and sectors in designing and delivering the pathway to achieve the goal in a fair way'. Commitments were made to increase the target for the number of Sustainable Energy Communities (in the Climate Action Plan the target is 1,500 by 2030); to prioritise microgeneration and allow the sale of excess power back to the grid by June 2021; to ensure that community energy can play a role in reaching at least 70% renewable electricity, including a community benefit fund and a community category within the auction; to establish the Climate Action Fund in law within 100 days and 'quickly' launch a second call under the Climate Action Fund' and also 'a call under a Local Environmental Innovation Fund to enhance community participation' (Irish Government, 2020b, pp. 35-39).

In September 2020, Minister Eamon Ryan announced that eighty-two new renewable energy projects were successful under RESS, of which seven were community owned, and he added: 'We expect that our next auction will have a higher share of community-based renewables.' Additional community policies and supports are specified in the State Aid including: financial support for community-led projects, mandatory community benefit funds, investment

opportunities for communities and citizens, and additional community categories for future RESS auctions (DCCAE, 2020).

And finally, in another example of joined-up policy implementation, on 7 October 2020 the Government published the Climate Action Bill which commits Ireland to net-zero carbon emissions by 2050, and 'draws on recommendations of the cross section of Irish people who took part in the Citizens Assembly on Climate, as well as those of a Joint Oireachtas committee on Climate Action. It is also a cornerstone of the Programme for Government and was identified as a priority for legislation' (Irish Government, 2020a).

While it has taken Ireland a long time to come to this stage, and some still feel the pace of change is too slow, the signs are certainly very promising that we will now make realistic progress in cutting our greenhouse emissions. While the development and impact of the National Climate Dialogue has not met initial expectations, the collaborative discussions around RESS 1 and the outcome have been very encouraging, and the future of community energy is certainly on a more secure footing. However, time will tell as to whether the government will manage the difficult task of engaging and supporting communities in climate action in a comprehensive way, or whether this will continue to be piecemeal and reactive at the local level.

1. BIBLIOGRAPHY

Abbey, E. (1975) *The Monkey Wrench Gang.* USA: Lippincott Williams & Wilkins.

Adams, R. (1990) *Self-help, social work and empowerment.* Springer.

AIEC (2017) *Criteria For the Ideal Location of Wind Turbines on Inis Mór*. Available at: http://www.aranislandsenergycoop.ie/agm-2016-2/.

Aitken, M. (2010) 'Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature', *Energy Policy,* 38(4), pp. 1834-1841.

Ajzen, I. (1991) 'The theory of planned behavior', *Organizational behavior and human decision processes,* 50(2), pp. 179-211.

Ajzen, I. and Fishbein, M. (1980) 'Understanding attitudes and predicting social behaviour'.

ALLEA (2017) *The European Code of Conduct for Research Integrity*, All European Academies, Berlin: Brandenburg Academy of Sciences and Humanities. Available at: https://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf.

Alvesson, M. (2003) 'Beyond neopositivists, romantics, and localists: A reflexive approach to interviews in organizational research', *Academy of management review,* 28(1), pp. 13-33.

Anton, C. E. and Lawrence, C. (2016) 'The relationship between place attachment, the theory of planned behaviour and residents' response to place change', *Journal of Environmental Psychology,* 47, pp. 145-154.

Ariely, D. (2008) *Predictably irrational.* HarperCollins New York.

Arkes, H. R. and Blumer, C. (1985) 'The psychology of sunk cost', *Organizational behavior and human decision processes,* 35(1), pp. 124-140.

Arnstein, S. R. (1969) 'A ladder of citizen participation', *Journal of the American Planning Association,* 35(4), pp. 216-224.

Attride-Stirling, J. (2001) 'Thematic networks: an analytic tool for qualitative research', *Qualitative research,* 1(3), pp. 385-405.

Avelino, F. and Wittmayer, J. M. (2015) 'Shifting power relations in sustainability transitions: a multi-actor perspective', *Journal of Environmental Policy & Planning,* 18(5), pp. 628-649.

Aylett, A. (2010) 'Participatory planning, justice, and climate change in Durban, South Africa', *Environment and Planning A,* 42(1), pp. 99-115.

Bailey, N., Kearns, A. and Livingston, M. (2012) 'Place attachment in deprived neighbourhoods: The impacts of population turnover and social mix', *Housing Studies,* 27 (2), pp. 208-231.

Balta-Ozkan, N., Davidson, R., Bicket, M. and Whitmarsh, L. (2013) 'Social barriers to the adoption of smart homes', *Energy Policy,* 63, pp. 363-374.

Bandura, A. 1971. Social learning theory. Morristown. NJ: General Learning Press.

Bandura, A. (1977) 'Self-efficacy: toward a unifying theory of behavioral change', *Psychological review,* 84(2), pp. 191.

Barry, J., Ellis, G. and Robinson, C. (2008) 'Cool rationalities and hot air: a rhetorical approach to understanding debates on renewable energy', *Global environmental politics,* 8(2), pp. 67-98.

Bartiaux, F. (2008) 'Does environmental information overcome practice compartmentalisation and change consumers' behaviours?', *Journal of Cleaner Production,* 16(11), pp. 1170-1180.
Batel, S., Devine-Wright, P. and Tangeland, T. (2013) 'Social acceptance of low carbon energy and associated infrastructures: A critical discussion', *Energy Policy,* 58, pp. 1-5.
Batel, S., Devine-Wright, P., Wold, L., Egeland, H., Jacobsen, G. and Aas, O. (2015) 'The role of (de-) essentialisation within siting conflicts: An interdisciplinary approach', *Journal of Environmental Psychology,* 44, pp. 149-159.
Bauman, Z. (2004) 'Wasted Lives (London', *Polity,* 132, pp. 133.
Bauwens, T. (2016) 'Explaining the diversity of motivations behind community renewable energy', *Energy Policy,* 93, pp. 278-290.
BBC News (2002) *Would YOU live next to a Nimby?* Available at: http://news.bbc.co.uk/2/hi/uk/2000000.stm (Accessed: 17th Feb 2019).
Becker, S. and Naumann, M. (2017) 'Energy democracy: Mapping the debate on energy alternatives', *Geography Compass,* 11(8), pp. e12321.
Bell, D., Gray, T. and Haggett, C. (2005) 'The 'social gap'in wind farm siting decisions: explanations and policy responses', *Environmental politics,* 14(4), pp. 460-477.
Bell, D., Gray, T., Haggett, C. and Swaffield, J. (2013) 'Re-visiting the 'social gap': public opinion and relations of power in the local politics of wind energy', *Environmental Politics,* 22(1), pp. 115-135.
Belmont Report (1979) *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research* USA: National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research; US Department of Health, Education, and Welfare.
Bender, D. E. and Ewbank, D. (1994) 'The focus group as a tool for health research: issues in design and analysis', *Health transition review*, pp. 63-80.
Berger-Schmitt, R. (2002) 'Considering social cohesion in quality of life assessments: Concept and measurement', *Assessing Quality of Life and Living Conditions to Guide National Policy*: Springer, pp. 403-428.
Bernauer, T. and Betzold, C. (2012) 'Civil society in global environmental governance', *The Journal of Environment & Development,* 21(1), pp. 62-66.
Birt, L., Scott, S., Cavers, D., Campbell, C. and Walter, F. (2016) 'Member checking: a tool to enhance trustworthiness or merely a nod to validation?', *Qualitative health research,* 26(13), pp. 1802-1811.
Blake, J. (1999) 'Overcoming the 'value-action gap'in environmental policy: Tensions between national policy and local experience', *Local environment,* 4(3), pp. 257-278.
Bourdieu, P. (1986) 'The forms of Capital', in Richardson, J.G. (ed.) *Handbook of Theory and Research for Education*. New York Greenwood, pp. 241–258.
Boykoff, M. T. (2011) *Who speaks for the climate?: Making sense of media reporting on climate change.* Cambridge University Press.
Breen, R. L. (2006) 'A practical guide to focus-group research', *Journal of Geography in Higher Education,* 30(3), pp. 463-475.
Brehm, J. and Rahn, W. (1997) 'Individual-level evidence for the causes and consequences of social capital', *American journal of political science*, pp. 999-1023.

Brent, J. (2004) 'The desire for community: Illusion, confusion and paradox', *Community development journal,* 39(3), pp. 213-223.
Brown, B. and Perkins, D. (1992) 'Disruptions in Place Attachment', in Altman, I. & Low , S. (eds.) *Place Attachment*. New York: Plenum Press.
Brown, B., Perkins, D. D. and Brown, G. (2003) 'Place attachment in a revitalizing neighborhood: Individual and block levels of analysis', *Journal of environmental psychology,* 23(3), pp. 259-271.
Burch, S. (2010) 'In pursuit of resilient, low carbon communities: an examination of barriers to action in three Canadian cities', *Energy Policy,* 38(12), pp. 7575-7585.
Burch, S. (2011) 'Sustainable development paths: investigating the roots of local policy responses to climate change', *Sustainable Development,* 19(3), pp. 176-188.
Burch, S. and Robinson, J. (2007) 'A framework for explaining the links between capacity and action in response to global climate change', *Climate Policy,* 7(4), pp. 304-316.
Burch, S., Shaw, A., Dale, A. and Robinson, J. (2014) 'Triggering transformative change: a development path approach to climate change response in communities', *Climate Policy,* 14(4), pp. 467-487.
Burchell, K., Rettie, R. and Roberts, T. (2014) 'Community, the very idea!: perspectives of participants in a demand-side community energy project', *People, Place and Policy,* 8(3), pp. 168-179.
Burke, M. J. and Stephens, J. C. (2018) 'Political power and renewable energy futures: A critical review', *Energy Research & Social Science,* 35, pp. 78-93.
Burningham, K., Barnett, J. and Thrush, D. (2006) *The limitations of the NIMBY concept for understanding public engagement with renewable energy technologies: a literature review*, Manchester: School of Environment and Development, University of Manchester. Available at: http://geography.exeter.ac.uk/beyond_nimbyism/deliverables/bn_wp1_3.pdf.
Campus Engage (2016) *Engaged Research: Society & Higher Education Addressing Grand Societal Challeges Together*, Dublin Ireland: Irish Universities Assoc & Irish Research Council.
Cao, B. (2015) *Environment and citizenship.* UK & US: Routledge.
Capstick, S., Whitmarsh, L., Poortinga, W., Pidgeon, N. and Upham, P. (2015) 'International trends in public perceptions of climate change over the past quarter century', *Wiley Interdisciplinary Reviews: Climate Change,* 6(1), pp. 35-61.
Carlsen, B. and Glenton, C. (2011) 'What about N? A methodological study of sample-size reporting in focus group studies', *BMC medical research methodology,* 11(1), pp. 1-10.
Carvalho, A., Pinto-Coelho, Z. and Seixas, E. (2016) 'Listening to the public–enacting power: Citizen access, standing and influence in public participation discourses', *Journal of Environmental Policy & Planning*, pp. 1-19.
Cass, N., Walker, G. and Devine-Wright, P. (2010) 'Good neighbours, public relations and bribes: the politics and perceptions of community benefit provision in renewable energy development in the UK', *Journal of environmental policy & planning,* 12(3), pp. 255-275.

Catney, P., Dobson, A., Hall, S. M., Hards, S., MacGregor, S., Robinson, Z., Ormerod, M. and Ross, S. (2013) 'Community knowledge networks: an action-orientated approach to energy research', *Local Environment,* 18(4), pp. 506-520.

Catney, P., MacGregor, S., Dobson, A., Hall, S. M., Royston, S., Robinson, Z., Ormerod, M. and Ross, S. (2014) 'Big society, little justice? Community renewable energy and the politics of localism', *Local Environment,* 19(7), pp. 715-730.

CCAC (2016) *First Report; Climate Change Advisory Council*, http://www.climatecouncil.ie/media/CCAC_FIRSTREPORT.pdf.

CES (2018) *Community Energy Scotland*. Available at: http://www.communityenergyscotland.org.uk/index.asp.

Chambers, R. (1997) *Whose reality counts.* London: Intermediate technology publications.

Chaskin, R. J. (1999) *Defining Community Capacity: A Framework and Implications from a Comprehensive Community Initiative*, Chicago: The Chapin Hall Center for Children at the University of Chicago.

Chaskin, R. J. (2001) 'Building community capacity: A definitional framework and case studies from a comprehensive community initiative', *Urban affairs review,* 36(3), pp. 291-323.

Chinn, D. (2007) 'Reflection and reflexivity', *British Psychological Society - Clinical Psychology Forum,* 178.

Choguill, M. B. G. (1996) 'A ladder of community participation for underdeveloped countries', *Habitat international,* 20(3), pp. 431-444.

Cialdini, R. B. (2007) 'Descriptive social norms as underappreciated sources of social control', *Psychometrika,* 72(2), pp. 263-268.

Cialdini, R. B. and Goldstein, N. J. (2004) 'Social influence: Compliance and conformity', *Annu. Rev. Psychol.,* 55, pp. 591-621.

Cialdini, R. B., Reno, R. R. and Kallgren, C. A. (1990) 'A focus theory of normative conduct: recycling the concept of norms to reduce littering in public places', *Journal of personality and social psychology,* 58(6), pp. 1015.

Citizens Assembly (2018) *How the State can Make Ireland a Leader in Tackling Climate Change*: The Citizen's Assembly. Available at: https://www.citizensassembly.ie/en/How-the-State-can-make-Ireland-a-leader-in-tackling-climate-change/

Clarke, D., Murphy, C. and Lorenzoni, I. (2018) 'Place attachment, disruption and transformative adaptation', *Journal of Environmental Psychology,* 55, pp. 81-89.

Cleary, M., Horsfall, J. and Hayter, M. (2014) 'Data collection and sampling in qualitative research: does size matter?', *Journal of advanced nursing*, pp. 473-475.

Cleaver, F. (2001) 'Chapter 3', in Cooke, B. & Kothari, U. (eds.) *The case for participation as tyranny*. UK: Zed Books.

Cogan, S. (2017) 'Community-led Energy Initiatives in Ireland: Accelerating the Energy Transition? Reflections on the Impact and Outcomes of Two Case Studies.', *Irish Journal of Social, Economic and Environmental Sustainability,* 1(1).

Cohen, A. P. (1985) *The Symbolic Construction of Community.* Psychology Press.

Cohen, J. M. and Uphoff, N. T. (1980) 'Participation's place in rural development: seeking clarity through specificity', *World development,* 8(3), pp. 213-235.

Cohen, S. (2001) *States of Denial: Knowing about Atrocities and Suffering.* Polity Press.

Coleman, J. S. (1988) 'Social capital in the creation of human capital', *American Journal of Sociology 94*, pp. 95-120.
Comhar (2011) *Community Renewable Energy in Ireland: Status, barriers and potential options* Comhar Sustainable Development Council. Available at: http://files.nesc.ie/comhar_archive/Comhar%20Papers/Comhar_Paper_11_2011.pdf.
Conger, J. A. and Kanungo, R. N. (1988) 'The empowerment process: Integrating theory and practice', *Academy of management review,* 13(3), pp. 471-482.
Cooke, B. and Kothari, U. (2001) *The case for participation as tyranny.* Zed Books.
Corbin, J. and Strauss, A. (2014) *Basics of qualitative research: Techniques and procedures for developing grounded theory.* London: Sage Publications.
Cornwall, A. (2008) 'Unpacking 'Participation': models, meanings and practices', *Community Development Journal,* 43(3), pp. 269-283.
Couto, R. A. (1998) 'Community coalitions and grassroots policies of empowerment', *Administration & Society,* 30(5), pp. 569-594.
Craig, S. (1995) *Community Participation: a handbook for individuals and groups in Local Development Partnerships*, Dublin Ireland: Combat Poverty Agency (1871643430.
Crawley, H. (1998) 'Living up to the Empowerment Claim? The potential of PRA', in Guijt, I. & Kaul Shah, M. (eds.) *The Myth of Community: gender relations and participatory development*. London: Intermediate Technology Publications.
Cunliffe, A. L. (2003) 'Reflexive inquiry in organizational research: Questions and possibilities', *Human relations,* 56(8), pp. 983-1003.
Curtis, S., Gesler, W., Smith, G. and Washburn, S. (2000) 'Approaches to sampling and case selection in qualitative research: examples in the geography of health', *Social science & medicine,* 50(7-8), pp. 1001-1014.
Dalby, S. and Mackenzie, F. (1997) 'Reconceptualising local community: environment, identity and threat', *Area,* 29(2), pp. 99-108.
Dale, A. and Sparkes, J. (2010) 'The 'agency'of sustainable community development', *Community Development Journal,* 46(4), pp. 476-492.
Darley, J. M. and Latane, B. (1968) 'Bystander intervention in emergencies: diffusion of responsibility', *Journal of personality and social psychology,* 8(4p1), pp. 377.
Davidson, W. B. and Cotte, P. R. (1989) 'Sense of community and political participation', *Journal of community psychology,* 17(2), pp. 119-125.
Davies, A. R., Fahy, F. and Rau, H. (2014) *Challenging consumption: Pathways to a more sustainable future.* Routledge.
DCCAE (2014) *Green Paper on Energy Policy in Ireland*. Available at: https://www.dccae.gov.ie/en-ie/energy/consultations/Pages/Green-Paper-on-Energy-Policy-in-Ireland.aspx.
DCCAE (2016) *Naughten secures Government approval to begin Ireland's ratification of the Paris Agreement on Climate Change*. Available at: https://www.dccae.gov.ie/en-ie/news-and-media/press-releases/pages/Naughten-secures-Government-approval-to-begin-Ireland%E2%80%99s-ratification-of-the-Paris-Agreement-on-Climate-Change-.aspx.
DCCAE (2018a) *Local Agenda 21 Partnership Fund*: Dept of Communications, Climate Action and the Environment. Available at: https://www.dccae.gov.ie/en-

ie/environment/topics/environmental-protection-and-awareness/local-agenda-21-partnership-fund/Pages/default.aspx.
DCCAE (2018b) *National Dialogue on Climate Action*. Available at: https://www.dccae.gov.ie/en-ie/climate-action/topics/climate-action-at-a-national-level/national-dialogue-on-climate-action/Pages/default.aspx
DCCAE (2019) 'Climate Action Plan to Tackle Climate Breakdown'.
DCCAE 2020. Solar, wind and community energy projects set to deliver €1.4 billion in investment and 1,000 jobs after Government approves renewable energy auction results.
DCENR (2014) *Green Paper on Energy Policy in Ireland*: Department of Communications Energy and Natural Resources, Dublin. Available at: https://www.dccae.gov.ie/documents/DCENRGreenPaperonEnergyPolicyinIreland.pdf.
DCENR (2015a) *Ireland's Transition to a Low Carbon Energy Future 2015-2030*: Department of Communications, Energy and Natural Resources, Dublin. Available at: https://www.dccae.gov.ie/documents/Energy%20White%20Paper%20-%20Dec%202015.pdf.
DCENR (2015b) 'Ireland's Transition to a Low Carbon Energy Future 2015-2030'.
DCMNR, Department of Communications, M.a.N.R. (2007) *Energy White Paper - Delivering a Sustainable Energy Future for Ireland.* Dublin.
de Berker, A. O., Rutledge, R. B., Mathys, C., Marshall, L., Cross, G. F., Dolan, R. J. and Bestmann, S. (2016) 'Computations of uncertainty mediate acute stress responses in humans', *Nature communications,* 7.
Dear, M. (1992) 'Understanding and overcoming the NIMBY syndrome', *Journal of the American Planning Association,* 58(3), pp. 288-300.
DECC (2014) *Community Energy Strategy: Full Report*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/275163/20140126Community_Energy_Strategy.pdf.
Deci, E. L. and Ryan, R. M. (1975) *Intrinsic motivation.* Wiley Online Library.
Denzin, N. (1989) *The Research Act.* New York: Prentince Hall.
Devaney, L., Torney, D., Brereton, P. and Coleman, M. (2020) 'Ireland's Citizens' Assembly on Climate Change: Lessons for Deliberative Public Engagement and Communication', *Environmental Communication,* 14(2), pp. 141-146.
Devers, K. and Frankel, R. (2000) 'Study design in qualitative research—2: Sampling and data collection strategies', *Education for health,* 13(2), pp. 263-271.
Devine-Wright, P. (2003) *Public participation, social influence and the shaping of support for wind energy in the UK*: Working paper on Renewable Energy, Institute of Energy and Sustainable Development, De Montfort University, Leicester.
Devine-Wright, P. 'Towards zero-carbon: Citizenship, responsibility and the public acceptability of sustainable energy technologies'. *Proceedings of Conference C81 of the Solar Energy Society, UK section of the International Solar Energy Society*, 51-62.
Devine-Wright, P. (2012) 'Fostering public engagement in wind energy development: the role of intermediaries and community benefits', in Szarka, J., Cowell, R., Ellis, G., Strachan, P. & Warren, C. (eds.) *Learning from Wind Power:*

Governance, Societal and Policy Perspectives on Sustainable Energy. UK: Springer, pp. 194-214.
Devine-Wright, P. and Batel, S. (2013) 'Explaining public preferences for high voltage pylon designs: An empirical study of perceived fit in a rural landscape', *Land Use Policy,* 31, pp. 640-649.
Devine-Wright, P. and Howes, Y. (2010) 'Disruption to place attachment and the protection of restorative environments: A wind energy case study', *Journal of environmental psychology,* 30(3), pp. 271-280.
Devine-Wright, P. and Wiersma, B. (2013) 'Opening up the "local" to analysis: exploring the spatiality of UK urban decentralised energy initiatives', *A Report on Community Renewable Energy in Scotland: SCENE Connect* pp. 37-41.
Devine-Wright, P. (2005) 'Beyond NIMBYism: towards an integrated framework for understanding public perceptions of wind energy', *Wind energy,* 8(2), pp. 125-139.
Devine-Wright, P. (2009) 'Rethinking NIMBYism: The role of place attachment and place identity in explaining place-protective action', *Journal of community & applied social psychology,* 19(6), pp. 426-441.
Diekmann, A. and Preisendörfer, P. (2003) 'Green and greenback the behavioral effects of environmental attitudes in low-cost and high-cost situations', *Rationality and Society,* 15(4), pp. 441-472.
Dietz, T., Ostrom, E. and Stern, P. C. (2003) 'The struggle to govern the commons', *science,* 302(5652), pp. 1907-1912.
Diffney, S., Lyons, S. and Valeri, L. M. (2013) 'Evaluation of the effect of the Power of One campaign on natural gas consumption', *Energy policy,* 62, pp. 978-988.
Dowling, R. (2000) 'Cultures of mothering and car use in suburban Sydney: a preliminary investigation', *Geoforum,* 31(3), pp. 345-353.
Doyle, R. and Davies, A. R. (2013) 'Towards sustainable household consumption: exploring a practice oriented, participatory backcasting approach for sustainable home heating practices in Ireland', *Journal of Cleaner Production,* 48, pp. 260-271.
Doyle, S. (2007) 'Member checking with older women: A framework for negotiating meaning', *Health care for women international,* 28(10), pp. 888-908.
Ebi, K. L. and Semenza, J. C. (2008) 'Community-based adaptation to the health impacts of climate change', *American journal of preventive medicine,* 35(5), pp. 501-507.
Edenhofer, O. (2014) *Working Group 111; IPCC*. Available at: http://www.un.org/climatechange/blog/2014/04/ipcc-greenhouse-gas-emissions-accelerate-despite-reduction-efforts-many-pathways-to-substantial-emissions-reductions-are-available/.
Edwards, B. and Foley, M. W. (1999) 'Social Capital and Civic Capacity: Volume 21, Number 4 Review of the Symposium on Community Capacity, Social Trust and Public Administration', *Administrative Theory & Praxis,* 21(4), pp. 523-531.
Edwards, M. and Onyx, J. (2007) 'Social Capital and Sustainability in a Community under Threat', *Local Environment,* 12(1), pp. 17-30.
Elliott, H. (2011) 'Interviewing mothers: reflections on closeness and reflexivity in research encounters', *Studies in the Maternal,* 3(1).
Ellis, G., Barry, J. and Robinson, C. (2007) 'Many ways to say 'no', different ways to say 'yes': applying Q-methodology to understand public acceptance of wind farm

proposals', *Journal of environmental planning and management,* 50(4), pp. 517-551.
EPA (2018) *Ireland's 2018 Greenhouse Gas Emissions Projections; 31st May 2018*. Available at: http://epa.ie/pubs/reports/air/airemissions/ghgprojections2017-2035/2018_Seminar_GHG_Projections_to_2035.pdf
EPA 2020. Targeted climate and environmental actions needed for long term improvement says EPA.
Ereaut, G. and Segnit, N. (2006) 'Warm Words: How we are Telling the Climate Story and can we Tell it Better'.
Etherington, K. (2004) *Becoming a reflexive researcher: Using our selves in research.* Jessica Kingsley Publishers.
Etherington, K. (2007) 'Ethical research in reflexive relationships', *Qualitative inquiry,* 13(5), pp. 599-616.
European Commission (2019) *European Semester: Country Report - Ireland*. Available at: https://ec.europa.eu/info/publications/2019-european-semester-country-reports_en
Eyben, R. (2003) 'The rise of rights: rights-based approaches to international development'.
Farrimond, H. (2012) *Doing ethical research.* Macmillan International Higher Education.
Fazey, I., Schäpke, N., Caniglia, G., Patterson, J., Hultman, J., Van Mierlo, B., Säwe, F., Wiek, A., Wittmayer, J. and Aldunce, P. (2018) 'Ten essentials for action-oriented and second order energy transitions, transformations and climate change research', *Energy Research & Social Science,* 40, pp. 54-70.
Fehr, E. and Fischbacher, U. (2004) 'Social norms and human cooperation', *Trends in cognitive sciences,* 8(4), pp. 185-190.
Feola, G. and Nunes, R. (2014) 'Success and failure of grassroots innovations for addressing climate change: The case of the Transition Movement', *Global Environmental Change,* 24, pp. 232-250.
Ferreira, M. P. and Gendron, F. (2011) 'Community-based participatory research with traditional and indigenous communities of the Americas: Historical context and future directions'.
Finlay, L. (2002a) 'Negotiating the swamp: the opportunity and challenge of reflexivity in research practice', *Qualitative research,* 2(2), pp. 209-230.
Finlay, L. (2002b) '"Outing" the researcher: The provenance, process, and practice of reflexivity', *Qualitative health research,* 12(4), pp. 531-545.
Fishbein, M. and Ajzen, I. (1975) *Belief, attitude, intention and behavior: An introduction to theory and research.*
Fitzgerald, J. (2000) 'Strategy for Intensifying Wind Energy Deployment', *Government of Ireland, Dublin*.
Flick, U. (2013) *The SAGE handbook of qualitative data analysis.* Sage.
Fontana, F. and Frey, J. 1994. Interviewing, the Art of Science, w: Denzin N., Lincoln Y.(red.), Handbook of Qualitative Research. Thousand Oaks: Sage Publications.
Foucault, M. (2007) *Security, territory, population: lectures at the Collège de France, 1977-78.* Hampshire: Palgrave MacMillan UK.

Frey, B. S. and Jegen, R. (2001) 'Motivation crowding theory', *Journal of economic surveys,* 15(5), pp. 589-611.
Frey, B. S. and Oberholzer-Gee, F. (1997) 'The cost of price incentives: An empirical analysis of motivation crowding-out', *The American economic review,* 87(4), pp. 746-755.
Fried, M. (1966) 'Grieving for a Lost Home: Psychological Costs of Relocation', in Wilson, J.Q. (ed.) *Urban Renewal: The Record and the Controversy*. Massachusetts, USA: MIT Press, pp. 359-379.
Friends of the Earth et al (2014) *Community Energy Policy Position Paper*. Available at: https://www.foe.ie/download/pdf/community_energy_policy_position_paper.pdf.
Friends of the Highland Mountains (2019). Available at: http://highlandmts.org/nimby/ (Accessed: 17th Feb 2019).
Fukuyama, F. (2001) 'Social capital, civil society and development', *Third world quarterly,* 22(1), pp. 7-20.
Gaffney, M. (2011) *Flourishing.* Penguin UK.
Gallagher, V., Johnson, M. T., O'Dowd, S., Barret, D. and Richardson, J. (2016) 'A Guide for Communities Working with Academics on Participatory Research Projects'.
Gardner, D. (2009) *Risk: The science and politics of fear.* Random House.
Gaynor, N. (2009) 'In-Active citizenship and the depoliticization of community development in Ireland', *Community Development Journal,* 46(1), pp. 27-41.
Gaynor, N. (2011) 'In-Active citizenship and the depoliticization of community development in Ireland', *Community Development Journal,* 46(1), pp. 27-41.
Geels, F. W. (2002) 'Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study', *Research policy,* 31(8-9), pp. 1257-1274.
Geels, F. W. (2005) 'Processes and patterns in transitions and system innovations: refining the co-evolutionary multi-level perspective', *Technological forecasting and social change,* 72(6), pp. 681-696.
Geels, F. W. (2011) 'The multi-level perspective on sustainability transitions: Responses to seven criticisms', *Environmental innovation and societal transitions,* 1(1), pp. 24-40.
Geels, F. W., Kern, F., Fuchs, G., Hinderer, N., Kungl, G. and Mylan, J. (2016) 'The enactment of socio-technical transition pathways: a reformulated typology and a comparative multi-level analysis of theGerman and UK low-carbon electricity transitions (1990–2014)', *Research Policy,* 45, pp. 896-913.
Geels, F. W. and Schot, J. (2007) 'Typology of sociotechnical transition pathways', *Research Policy,* 36, pp. 399-417.
Geels, F. W. and Smit, W. A. (2000) 'Failed technology futures: pitfalls and lessons from a historical survey', *Futures,* 32(9-10), pp. 867-885.
Gibson, C., Waitt, G., Head, L. and Gill, N. (2011) 'Is it easy being green? On the dilemmas of material cultures of household sustainability', *Material geographies of household sustainability*, pp. 19-33.
Giddens, A. (1984) *The constitution of society: Outline of the theory of structuration.* Univ of California Press.
Giddens, A. (2009) 'The politics of climate change', *Cambridge, UK*.
Gieryn, T. F. (2000) 'A space for place in sociology', *Annual review of sociology,* 26(1), pp. 463-496.

Gifford, R. (2011) 'The dragons of inaction: psychological barriers that limit climate change mitigation and adaptation', *American Psychologist,* 66(4), pp. 290.
Giuliani, M. V. (2003) 'Theory of Attachment and Place Attachment', in Bonnes, M., Lee, T. & Bonaiuto, M. (eds.) *Psychological Theories for Environmental Issues*. Aldershot: Ashgate Publishing.
Goedkoop, F. and Devine-Wright, P. (2016) 'Partnership or placation? The role of trust and justice in the shared ownership of renewable energy projects', *Energy Research & Social Science,* 17, pp. 135-146.
Govt (2000) *Foreward to White Paper on a Framework for Supporting Voluntary Activity and for Developing the Relationship between the State and the Community and Voluntary Sector*. Available at: https://www.pobal.ie/Publications/Documents/Framework%20for%20Supporting%20Voluntary%20Activity%20and%20Developing%20the%20Relationship%20between%20the%20State%20and%20the%20Community%20White%20Paper.pdf.
Granderson, A. A. (2014) 'Making sense of climate change risks and responses at the community level: A cultural-political lens', *Climate Risk Management,* 3, pp. 55-64.
Granovetter, M. S. (1977) 'The strength of weak ties', *Social networks*: Elsevier, pp. 347-367.
Graugaard, J. D. (2012) 'A tool for building community resilience? A case study of the Lewes Pound', *Local Environment,* 17(2), pp. 243-260.
Grootaert, C. and Van Bastelaer, T. (2002) *Understanding and measuring social capital: a Synthesis of Findings and Recommendations from the Social Capital Initiative*: Word Bank Working Paper No. 24.
Gubbins, N. (2010) 'The role of community energy schemes in supporting community resilience', *JRF briefing paper on Community Assets, JRF, York*.
An Inconvenient Truth, 2013. Directed by Guggenheim, D. United States: Paramount Classics.
Guijt, I. and Kaul Shah, M. 1998. The Myth of Community: gender relations and participatory development. Londres: Intermediate Technology Publications.
Guillemin, M. and Gillam, L. (2004) 'Ethics, reflexivity, and "ethically important moments" in research', *Qualitative inquiry,* 10(2), pp. 261-280.
Hardin, G. (1968) 'The Tragedy of the Commons'(1968) 162', *Science,* 1243.
Hares, A., Dickinson, J. and Wilkes, K. (2010) 'Climate change and the air travel decisions of UK tourists', *Journal of Transport Geography,* 18(3), pp. 466-473.
Hargreaves, T., Haxeltine, A., Longhurst, N. and Seyfang, G. (2011) *Sustainability transitions from the bottom-up: Civil society, the multi-level perspective and practice theory*, University of East Anglia, The Centre for Social and Economic Research on the Global Environment (CSERGE), Norwich.
Hargreaves, T., Hielscher, S., Seyfang, G. and Smith, A. (2013a) 'Grassroots innovations in community energy: The role of intermediaries in niche development', *Global Environmental Change,* 23(5), pp. 868-880.
Hargreaves, T., Nye, M. and Burgess, J. (2010) 'Making energy visible: A qualitative field study of how householders interact with feedback from smart energy monitors', *Energy policy,* 38(10), pp. 6111-6119.

Hargreaves, T., Nye, M. and Burgess, J. (2013b) 'Keeping energy visible? Exploring how householders interact with feedback from smart energy monitors in the longer term', *Energy Policy,* 52, pp. 126-134.
Harris, C. (2010) 'Active democratic citizenship and service-learning in the postgraduate classroom', *Journal of Political Science Education,* 6(3), pp. 227-243.
Hartley, T. W. (2006) 'Public perception and participation in water reuse', *Desalination,* 187(1-3), pp. 115-126.
Harvey, B. (2015a) *Funding Environmental Non-Governmental Organizations in Ireland*: Irish Environmental Network (IEN).
Harvey, B. (2015b) *So You're Either In Or You're Out – Community Participation in South Dublin – The Experience of the South Dublin Community Platform*: South Dublin Community Platform.
Harvey, J. B. (1988) 'The Abilene paradox: The management of agreement', *Organizational Dynamics,* 17(1), pp. 17-43.
Hayward, C., Simpson, L. and Wood, L. (2004) 'Still left out in the cold: problematising participatory research and development', *Sociologia Ruralis,* 44(1), pp. 95-108.
Head, B. W. (2007) 'Community engagement: participation on whose terms?', *Australian Journal of Political Science,* 42(3), pp. 441-454.
Healy, T. (2004) 'Social capital: Old hat or new insight?', *Irish Journal of Sociology,* 13(1), pp. 5-28.
Henkel, H. and Stirrat, R. (2001) 'Chapter 11', in Cooke, B.a.K., U. (ed.) *The case for participation as tyranny*. UK: Zed Books.
Hertz, R. 1997. Reflexivity and voice. Thousand Oaks, CA: Sage.
Hess, D. J. (2018) 'Energy democracy and social movements: A multi-coalition perspective on the politics of sustainability transitions', *Energy research & social science,* 40, pp. 177-189.
Hession, B. (2013) *Better Energy Financing: Barriers to the Uptake of a National Retrofit Scheme (Working Document)*, Better Energy Financing (BEF): DCENR.
Hewitt, J. (2007) 'Ethical components of researcher—researched relationships in qualitative interviewing', *Qualitative health research,* 17(8), pp. 1149-1159.
Hidalgo, M. C. and Hernandez, B. (2001) 'Place attachment: Conceptual and empirical questions', *Journal of environmental psychology,* 21(3), pp. 273-281.
Hielscher, S. (2013) *Carbon rationing action groups: an innovation history*, UK: University of Sussex & University of East Anglia.
Higham, J. E., Cohen, S. A. and Cavaliere, C. T. (2014) 'Climate change, discretionary air travel, and the "Flyers' Dilemma"', *Journal of Travel Research,* 53(4), pp. 462-475.
Hinchliffe, S. (1996) 'Helping the earth begins at home The social construction of socio-environmental responsibilities', *Global Environmental Change,* 6(1), pp. 53-62.
Hitchings, R. (2013) 'Sharing conventions: communities of practice and thermal comfort ', in Spurling, E.S.a.N. (ed.) *Sustainable practices: Social theory and climate change*: Routledge, pp. 103-114.
Holling, C. S. (1973) 'Resilience and stability of ecological systems', *Annual review of ecology and systematics,* 4(1), pp. 1-23.

Honohan, I. (2005) 'Active Citizenship in Contemporary Democracy', in Harris, C. (ed.) *The Report of the Democracy Commission: Engaging Citizens, the case for democratic renewal in Ireland*. Dublin: TASC at New Island pp. 169-80.
Hopkins, R. (2008a) 'The transition handbook', *From Oil Dependency to Local Resilience, Cambridge*.
Hopkins, R. (2008b) *The Transition Handbook: From Oil Dependency to Local Resilience.* Totnes, UK: Green Books.
Hoppe, T., van der Vegt, A. and Stegmaier, P. (2016) 'Presenting a framework to analyze local climate policy and action in small and medium-sized cities', *Sustainability,* 8(9), pp. 847.
Höppner, C., Frick, J. and Buchecker, M. (2008) 'What drives people's willingness to discuss local landscape development?', *Landscape Research,* 33(5), pp. 605-622.
Howaldt, J. and Schwarz, M. (2010) *Social innovation: Concepts, Research Fields, and International Trends.* Dortmund: Sozialforschungstelle Dortmund.
Hulme, M. (2007) 'Newspaper scare headlines can be counter-productive', *Nature,* 445(7130), pp. 818-818.
Hunter, S. and Leyden, K. M. (1995) 'Beyond NIMBY: explaining opposition to hazardous waste facilities', *Policy studies journal,* 23(4), pp. 601-619.
IPCC (2013) *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]*, Cambridge University Press, Cambridge, United Kingdom and New York.
IPCC (2018) *Global Warming of 1.5 ºC*. Geneva, Switzerland: IPCC. Available at: https://www.ipcc.ch/sr15/.
IPPC (2018) *IPCC Intergovernmental Panel on Climate Change*. Available at: http://www.ipcc.ch/organization/organization.shtml.
Irish Government (2018) *Renewable Electricity Support Scheme (RESS)*, Dublin, Ireland.
Irish Government 2020a. Government publishes new climate law which commits Ireland to net-zero carbon emissions by 2050.
Irish Government (2020b) *Programme for Government – Our Shared Future 2020*. Available at: https://www.greenparty.ie/wp-content/uploads/2020/06/ProgrammeforGovernment_June2020_Final_accessible.pdf
Jackson, T. (2005) *Motivating sustainable consumption: a review of evidence on consumer behaviour and behavioural change: a report to the Sustainable Development Research Network.* Centre for Environmental Strategy, University of Surrey.
Jaffe, A. B. and Stavins, R. N. (1994) 'The energy-efficiency gap What does it mean?', *Energy policy,* 22(10), pp. 804-810.
Jänicke, M. (2006) *The 'Rio Model' of Environmental Governance - a General Evaluation* Available at: : https://ssrn.com/abstract=926968 or http://dx.doi.org/10.2139/ssrn.926968.
Jänicke, M. and Quitzow, R. (2017) 'Multi-level Reinforcement in European Climate and Energy Governance: Mobilizing economic interests at the sub-national levels', *Environmental Policy and Governance,* 27(2), pp. 122-136.

Janis, I. L. (1972) 'Victims of groupthink: a psychological study of foreign-policy decisions and fiascoes'.
JCCA (2019) *Climate Change: A Cross-Party Consensus for Action*, Dublin: Ireland: Joint Committee on Climate Action: Houses of the Oireachtas Available at: https://www.oireachtas.ie/en/press-centre/press-releases/20190329-oireachtas-joint-committee-on-climate-action-publishes-final-report/.
Jones, C. R. and Eiser, J. R. (2010) 'Understanding 'local'opposition to wind development in the UK: How big is a backyard?', *Energy Policy,* 38(6), pp. 3106-3117.
Julian, C. and Dobson, J. (2012) *Re-energising our communities: transforming the energy market through local energy production*. ResPublica Green Paper. Available at: https://www.respublica.org.uk/wp-content/uploads/2012/02/rya_ResPublica-Re-energising-Our-Communities-FINAL.pdf.
Juvan, E. and Dolnicar, S. (2014) 'The attitude–behaviour gap in sustainable tourism', *Annals of Tourism Research,* 48, pp. 76-95.
Kahan, D. M. (2003) 'The logic of reciprocity: trust, collective action, and law', *Michigan Law Review,* 102(1), pp. 71-103.
Kahneman, D., Knetsch, J. L. and Thaler, R. H. (1991) 'Anomalies: The endowment effect, loss aversion, and status quo bias', *The journal of economic perspectives,* 5(1), pp. 193-206.
Kahneman, D. and Tversky, A. (1979) 'Prospect theory: An analysis of decision under risk', *Econometrica: Journal of the econometric society*, pp. 263-291.
Kalkbrenner, B. J. and Roosen, J. (2016) 'Citizens' willingness to participate in local renewable energy projects: The role of community and trust in Germany', *Energy Research & Social Science,* 13, pp. 60-70.
Kaplan, S. (2000) 'New ways to promote proenvironmental behavior: Human nature and environmentally responsible behavior', *Journal of social issues,* 56(3), pp. 491-508.
Kasperson, R. E., Renn, O., Slovic, P., Brown, H. S., Emel, J., Goble, R., Kasperson, J. X. and Ratick, S. (1988) 'The social amplification of risk: A conceptual framework', *Risk analysis,* 8(2), pp. 177-187.
Keeling, C. (1986) *Atmospheric CO2 Concentrations-Mauna Loa Observatory, Hawaii 1958-1986.* Tennessee: Oak Ridge National Laboratory.
Kellstedt, P. M., Zahran, S. and Vedlitz, A. (2008) 'Personal efficacy, the information environment, and attitudes toward global warming and climate change in the United States', *Risk Analysis,* 28(1), pp. 113-126.
Kennedy, E. H., Beckley, T. M., McFarlane, B. L. and Nadeau, S. (2009) 'Why We Don't "Walk the Talk": Understanding the Environmental Values/Behaviour Gap in Canada', *Human Ecology Review,* 16(2), pp. 151.
Kitzinger, J. (1995) 'Qualitative research: introducing focus groups', *Bmj,* 311(7000), pp. 299-302.
Klein, S. J. and Coffey, S. (2016) 'Building a sustainable energy future, one community at a time', *Renewable and Sustainable Energy Reviews,* 60, pp. 867-880.
Kontogianni, A., Tourkolias, C., Skourtos, M. and Damigos, D. (2014) 'Planning globally, protesting locally: Patterns in community perceptions towards the installation of wind farms', *Renewable Energy,* 66, pp. 170-177.

Korpela, K. M., Ylén, M., Tyrväinen, L. and Silvennoinen, H. (2009) 'Stability of self-reported favourite places and place attachment over a 10-month period', *Journal of Environmental Psychology,* 29(1), pp. 95-100.
Krosnick, J. A., Holbrook, A. L., Lowe, L. and Visser, P. S. (2006) 'The origins and consequences of democratic citizens' policy agendas: A study of popular concern about global warming', *Climatic change,* 77(1-2), pp. 7-43.
Kubler-Ross, E. 1969. MD On Death and dying. New York: Macmillan.
Lagarde, C. (2013) *World Economic Forum, Davos; 2013*. Available at: https://www.weforum.org/agenda/2013/01/top-ten-quotes-of-the-day-from-davos/.
Laird, F. N. (2013) 'Against transitions? Uncovering conflicts in changing energy systems', *Science as Culture,* 22(2), pp. 149-156.
Lang, D. J., Wiek, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Swilling, M. and Thomas, C. J. (2012) 'Transdisciplinary research in sustainability science: practice, principles, and challenges', *Sustainability science,* 7(1), pp. 25-43.
Lee, G. (2020) 'We must implement Climate Action Plan to achieve emissions target - EPA', *RTE*. Available at: https://www.rte.ie/news/2020/0708/1152164-epa-ireland-emissions-report/.
Lertzman, R. (2008) *The myth of apathy*. Ecologist. Available at: http://www.theecologist.org/blogs_and_comments/commentators/other_comments/269433/the_myth_of_apathy.html (Accessed: 10 Oct 2016.
LES (2018) *Local Energy Scotland*. Available at: https://www.localenergy.scot/.
Ling, T. (2000) 'Unpacking Partnership: The Case of Health Care', in Clarke, J., Gewirtz, S. & McLaughlin, E. (eds.) *New Managerialism, New Welfare?* UK: SAGE Publications Ltd.
Livezey, E. T. (1980) *Hazardous Waste*: The Christian Sceince Monitor. Available at: https://www.csmonitor.com/1980/1106/110653.html (Accessed: 17th Feb 2019).
Lockwood, M. (2007) *Positive Energy: Harnessing People Power to Prevent Climate: Change.* Institute for Public Policy Research.
Lockwood, M., Kuzemko, C., Mitchell, C. and Hoggett, R. (2016) 'Historical institutionalism and the politics of sustainable energy transitions: A research agenda', *Environment and Planning C: Politics and Space,* 35(2), pp. 312-333.
Lorenzoni, I., Nicholson-Cole, S. and Whitmarsh, L. (2007) 'Barriers perceived to engaging with climate change among the UK public and their policy implications', *Global environmental change,* 17(3), pp. 445-459.
Lovins, A. B. (1976) 'Energy strategy: the road not taken', *Foreign Aff.,* 55, pp. 65.
Maio, G. R., Verplanken, B., Manstead, A. S., Stroebe, W., Abraham, C., Sheeran, P. and Conner, M. (2007) 'Social psychological factors in lifestyle change and their relevance to policy', *Social Issues and Policy Review,* 1(1), pp. 99-137.
Mallaband, B., Haines, V. and Mitchell, V. (2013) 'Barriers to domestic retrofit: Learning from past home improvement experiences': Wiley-Blackwell.
Manzo, L. C. and Perkins, D. D. (2006) 'Finding common ground: The importance of place attachment to community participation and planning', *Journal of planning literature,* 20(4), pp. 335-350.
Marinakis, V., Papadopoulou, A. G. and Psarras, J. (2017) 'Local communities towards a sustainable energy future: needs and priorities', *International Journal of Sustainable Energy,* 36(3), pp. 296-312.

Markantoni, M. and Aitken, M. (2016) 'Getting low-carbon governance right: learning from actors involved in Community Benefits', *Local Environment,* 21(8), pp. 969-990.
Marsh, P. E. and Collett, P. (1986) 'Driving passion: The psychology of the car'.
Marshall, G. (2015) *Don't even think about it: Why our brains are wired to ignore climate change.* New York: Bloomsbury Publishing USA.
Marshall, T. H. (1950) *Citizenship and social class.* Cambridge.
Martiskainen, M. (2017) 'The role of community leadership in the development of grassroots innovations', *Environmental Innovation and Societal Transitions,* 22, pp. 78-89.
Martiskainen, M. and Heiskanen, E. (2016) 'Politics of grassroots innovations'.
Mauthner, N. S. and Doucet, A. (2003) 'Reflexive accounts and accounts of reflexivity in qualitative data analysis', *Sociology,* 37(3), pp. 413-431.
McDonald, F. (2014) 'Over 200 pressure groups join to resist Coalition's pylon and wind agenda', *Irish Times*, 17th Jan 2014.
McDonald, S., Oates, C. J., Thyne, M., Timmis, A. J. and Carlile, C. (2015) 'Flying in the face of environmental concern: why green consumers continue to fly', *Journal of Marketing Management,* 31(13-14), pp. 1503-1528.
McGee, H. (2020) ''Senior hurling': How Green Party fared in government last time', *The Irish Times*. Available at: https://www.irishtimes.com/news/politics/senior-hurling-how-green-party-fared-in-government-last-time-1.4253215
McKenzie-Mohr, D. (2000) 'Fostering sustainable behavior through community-based social marketing', *American psychologist,* 55(5), pp. 531.
McMillan, D. W. and Chavis, D. M. (1986) 'Sense of community: A definition and theory', *Journal of community psychology,* 14(1), pp. 6-23.
Melia, P. (2014) 'ESB ends scheme for homeowners who want to sell power', *Irish Independent*. Available at: https://www.independent.ie/irish-news/news/esb-ends-scheme-for-homeowners-who-want-to-sell-power-30706655.html.
Middlemiss, L. (2011) 'The effects of community-based action for sustainability on participants' lifestyles', *Local Environment,* 16(3), pp. 265-280.
Middlemiss, L. and Parrish, B. D. (2010) 'Building capacity for low-carbon communities: The role of grassroots initiatives', *Energy Policy,* 38(12), pp. 7559-7566.
Miller, G. (2009) *Spent: Sex, evolution, and consumer behavior.* Penguin.
Mittelstrass, J. (2011) 'On transdisciplinarity', *Trames,* (4), pp. 329-338.
Moore, J. (2012) *Social and Behavioural Aspects of Climate Change* National Economic & Social Council, Dublin. Available at: http://files.nesc.ie/nesc_secretariat_papers/ccbg_No3_Social_and_Behavioural_Aspects_of_Climate_%20Change.pdf.
Morris, S., Harvey, J., Bruton, T. and Vaughan-Morris, G. (2017) *Assessment of Models to Support Community Ownership of Renewable Energy in Ireland*, Report for SEAI: Ricardo Energy & Environment, UK.
Morton, T. A., Rabinovich, A., Marshall, D. and Bretschneider, P. (2011) 'The future that may (or may not) come: How framing changes responses to uncertainty in climate change communications', *Global Environmental Change,* 21(1), pp. 103-109.

Moser, A. and Korstjens, I. (2018) 'Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis', *European Journal of General Practice,* 24(1), pp. 9-18.
Moser, S. C. and Dilling, L. (2007) 'Toward the social tipping point: creating a climate for change', *Creating a climate for change: Communicating climate change and facilitating social change*, pp. 491-516.
Moulaert, F., Martinelli, F., Swyngedouw, E. and Gonzalez, S. (2005) 'Towards alternative model (s) of local innovation', *Urban studies,* 42(11), pp. 1969-1990.
Mulgan, G., Tucker, S., Ali, R. and Sanders, B. (2007) 'Social innovation: what it is, why it matters and how it can be accelerated'.
Mullally, G., Dunphy, N. and O'Connor, P. (2018) 'Participative environmental policy integration in the Irish energy sector', *Environmental Science & Policy,* 83, pp. 71-78.
Myers, M. D. and Newman, M. (2007) 'The qualitative interview in IS research: Examining the craft', *Information and organization,* 17(1), pp. 2-26.
Neal, D. T., Wood, W. and Quinn, J. M. (2006) 'Habits—A repeat performance', *Current Directions in Psychological Science,* 15(4), pp. 198-202.
NESC (2012) *Ireland and the Climate Change Challenge: Connecting 'How Much' with 'How To'; Final Report of the NESC Secretariat to the Department of Environment, Community and Local Government* National Economic & Social Council, Dublin. Available at: http://www.nesc.ie/assets/files/Ireland%20and%20the%20Climate%20Change%20Challenge_Connecting%20How%20Much%20with%20How%20To_Main_Report.pdf.
NESC (2014) *Wind Energy in Ireland: Building Community Engagement and Social Support*: National Economic & Social Council, Dublin. Available at: http://files.nesc.ie/nesc_reports/en/139_Wind_Energy_Main_Report.pdf.
NESF (2003) *The Policy Implications of Social Capital*, Dublin: National Economic and Social Forum. Available at: http://files.nesc.ie/nesf_archive/nesf_reports/NESF_28.pdf.
Neufeld, S. D., Chapman, J., Crier, N., Marsh, S., McLeod, J. and Deane, L. A. (2019) 'Research 101: A process for developing local guidelines for ethical research in heavily researched communities', *Harm reduction journal,* 16(1), pp. 41.
Newell, P., Bulkeley, H., Turner, K., Shaw, C., Caney, S., Shove, E. and Pidgeon, N. (2015) 'Governance traps in climate change politics: re-framing the debate in terms of responsibilities and rights', *Wiley interdisciplinary reviews: climate change,* 6(6), pp. 535-540.
Newman, L. and Dale, A. (2005) 'The role of agency in sustainable local community development', *Local environment,* 10(5), pp. 477-486.
Norgaard, K. M. (2011) *Living in denial: Climate change, emotions, and everyday life*. MIT Press.
Noy, C. (2008) 'Sampling knowledge: The hermeneutics of snowball sampling in qualitative research', *International Journal of social research methodology,* 11(4), pp. 327-344.
O'Drisceoil, S. (2000) 'Energy From Wind Turbines', *The Irish Times*. Available at: https://www.irishtimes.com/opinion/letters/energy-from-wind-turbines-1.252984.

O'Neill, S. and Nicholson-Cole, S. (2009) '"Fear Won't Do It" Promoting Positive Engagement With Climate Change Through Visual and Iconic Representations', *Science Communication,* 30(3), pp. 355-379.

O'Donovan, O. and Varley, T. (1992) *Paid Employment in the Voluntary Sector: a Review of the Literature*: Combat Poverty Report 1992. Available at: http://www.combatpoverty.ie/publications/PaidEmploymentInTheVoluntarySector_1992.pdf.

Olitsky, S. and Weathers, J. 'Working with students as researchers: Ethical issues of a participatory process'. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*.

Olson, M. (1965) *The Logic of Collective Action.* Cambridge, MA: Harvard University Press.

Oltra, C., Boso, A., Espluga, J. and Prades, A. (2013) 'A qualitative study of users' engagement with real-time feedback from in-house energy consumption displays', *Energy Policy,* 61, pp. 788-792.

Onyx, J. and Dovey, K. (1999) 'Cohabitation in the time of cholera: praxis in the community sector in the era of corporate capitalism', *Community Development Journal,* 34(3), pp. 179-190.

Ostrom, E. (2005) *Policies that crowd out reciprocity and collective action.* Cambridge: The MIT Press.

Oteman, M., Wiering, M. and Helderman, J.-K. (2014) 'The institutional space of community initiatives for renewable energy: a comparative case study of the Netherlands, Germany and Denmark', *Energy, sustainability and society,* 4(1), pp. 11.

Pain, R. and Francis, P. (2003) 'Reflections on participatory research', *Area,* 35(1), pp. 46-54.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N. and Hoagwood, K. (2015) 'Purposeful sampling for qualitative data collection and analysis in mixed method implementation research', *Administration and policy in mental health and mental health services research,* 42(5), pp. 533-544.

Papaoikonomou, E., Ryan, G. and Ginieis, M. (2011) 'Towards a holistic approach of the attitude behaviour gap in ethical consumer behaviours: Empirical evidence from Spain', *International Advances in Economic Research,* 17(1), pp. 77-88.

Park, J. J. (2012) 'Fostering community energy and equal opportunities between communities', *Local Environment,* 17(4), pp. 387-408.

Pasqualetti, M. J. (2000) 'Morality, space, and the power of wind-energy landscapes', *Geographical Review,* 90(3), pp. 381-394.

Peel, M. (1998) 'Trusting disadvantaged citizens', *Trust and Governance. New York: Russell Sage Foundation*, pp. 315-342.

Pelenur, M. J. and Cruickshank, H. J. (2012) 'Closing the energy efficiency gap: a study linking demographics with barriers to adopting energy efficiency measures in the home', *Energy,* 47(1), pp. 348-357.

Peter, C. and Swilling, M. (2014) 'Linking complexity and sustainability theories: Implications for modeling sustainability transitions', *Sustainability,* 6(3), pp. 1594-1622.

Peters, M., Fudge, S. and Sinclair, P. (2010) 'Mobilising community action towards a low-carbon future: Opportunities and challenges for local government in the UK', *Energy Policy,* 38(12), pp. 7596-7603.
Peters, M. and Jackson, T. (2008) 'Community action a force for social change? Some conceptual observations. Resolve Working Paper Series, 01-08, University of Surrey', *RESOLVE Working Paper Series,* (01-08).
Piccolo, L. S. and Alani, H. (2016) 'Strategies and Tools to Raise Energy Awareness Collectively'.
Pitt, D. and Congreve, A. (2016) 'Collaborative approaches to local climate change and clean energy initiatives in the USA and England', *Local Environment*, pp. 1-18.
Plant, R. (1974) *Community and ideology.*
Portes, A. and Landolt, P. (2000) 'Social capital: promise and pitfalls of its role in development', *Journal of Latin American Studies,* 32(2), pp. 529-547.
Powell, F. W. and Geoghegan, M. (2004) *The Politics of Community Development: Reclaiming Civil Society or Reinventing Governance?* Dublin: A and A Farmer.
Pretty, J. and Ward, H. (2001) 'Social capital and the environment', *World development,* 29(2), pp. 209-227.
Pretty, J. N. (1995) 'Participatory Learning For Sustainable Agriculture', *World Development, 23(8)* pp. 1247-1263.
Proshansky, H. M., Fabian, A. K. and Kaminoff, R. (1983) 'Place-identity: Physical world socialization of the self', *Journal of environmental psychology,* 3(1), pp. 57-83.
Putnam, R. D. (1993) 'The prosperous community', *The american prospect,* 4(13), pp. 35-42.
Putnam, R. D. (2001) *Bowling alone: The collapse and revival of American community.* New York: Simon and Schuster.
Putnam, R. D. (2002) *Democracies in flux: The evolution of social capital in contemporary society.* Oxford University Press.
Rabiee, F. (2004) 'Focus-group interview and data analysis', *Proceedings of the nutrition society,* 63(4), pp. 655-660.
Raihani, N. J. and Hart, T. (2010) 'Free-riders promote free-riding in a real-world setting', *Oikos,* 119(9), pp. 1391-1393.
Rappaport, J. (1987) 'Terms of empowerment/exemplars of prevention: Toward a theory for community psychology', *American journal of community psychology,* 15(2), pp. 121-148.
Rau, H. (2010) 'The “Green Wave” That Never Happened: The General Election in 2007', in Share, P. & Corcoran, M.P. (eds.) *Ireland of the Illusions: A Sociological Chronicle 2007-8*. Dublin: IPA, pp. 163-175.
Raven, R., Kern, F., Verhees, B. and Smith, A. (2016) 'Niche construction and empowerment through socio-political work. A meta-analysis of six low-carbon technology cases', *Environmental Innovation and Societal Transitions,* 18, pp. 164-180.
Rayner, S. (2010) 'Trust and the transformation of energy systems', *Energy Policy,* 38(6), pp. 2617-2623.
Reckwitz, A. (2002) 'Toward a theory of social practices a development in culturalist theorizing', *European journal of social theory,* 5(2), pp. 243-263.
Reed, M. G. and Peters, E. J. (2004) 'Using an Ecological Metaphor to Build Adaptive and Resilient Research Practices1'.

REP (2004) *Renewable Energy Partnership: To Catch the Wind: The Potential for Community Ownership of Wind Farms in Ireland*. Available at: https://www.wdc.ie/wp-content/uploads/reports_To-Catch-the-Wind.pdf.

Retallack, S. (2006) *The Problem With Climate Porn*. The Guardian. UK. Available at: https://www.theguardian.com/commentisfree/2006/aug/03/theproblemwithclimateporn.

Rittel, H. W. and Webber, M. M. (1973) 'Dilemmas in a general theory of planning', *Policy sciences,* 4(2), pp. 155-169.

Robbins, C. and Rowe, J. (2002) 'Unresolved responsibilities: exploring local democratisation and sustainable development through a community-based waste reduction initiative', *Local Government Studies,* 28(1), pp. 37-58.

Roberts, N. (2004) 'Public deliberation in an age of direct citizen participation', *The American review of public administration,* 34(4), pp. 315-353.

Rogers, E. M. (2010) *Diffusion of innovations.* Simon and Schuster.

Rogers, J. C., Simmons, E. A., Convery, I. and Weatherall, A. (2008) 'Public perceptions of opportunities for community-based renewable energy projects', *Energy Policy,* 36(11), pp. 4217-4226.

Rogers, J. C., Simmons, E. A., Convery, I. and Weatherall, A. (2012) 'Social impacts of community renewable energy projects: findings from a woodfuel case study', *Energy Policy,* 42, pp. 239-247.

Ruggiero, S., Onkila, T. and Kuittinen, V. (2014) 'Realizing the social acceptance of community renewable energy: A process-outcome analysis of stakeholder influence', *Energy Research & Social Science,* 4, pp. 53-63.

Ryan, T. (2005) 'When you reflect are you also being reflexive', *Ontario Action Researcher,* 8(1), pp. 1-5.

Rydin, Y. and Holman, N. (2004) 'Re-evaluating the Contribution of Social Capital in Achieving Sustainable Development', *Local Environment,* 9(2), pp. 117-133.

Saegert, S. (2004) '‘Community Building and Civic Capacity’', *Aspen Institute Roundtable on Community Change, pp. 1–42.*

Samuelson, W. and Zeckhauser, R. (1988) 'Status quo bias in decision making', *Journal of risk and uncertainty,* 1(1), pp. 7-59.

Scannell, L. and Gifford, R. (2013) 'Personally relevant climate change: The role of place attachment and local versus global message framing in engagement', *Environment and Behavior,* 45(1), pp. 60-85.

Schatzki, T. R., Knorr-Cetina, K. and Von Savigny, E. (2001) *The Practice Turn in Contemporary Theory.* London: Routledge.

Scheer, C., Gaffney (2016) *Ireland’s Energy Targets Progress, Ambition & Impacts; Summary for Policy Makers*: SEAI.

Schein, E. H. (1999) 'Empowerment, coercive persuasion and organizational learning: do they connect?', *The Learning Organization,* 6(4), pp. 163-172.

Schoorman, F. D., Mayer, R. C. and Davis, J. H. (2007) 'An integrative model of organizational trust: Past, present, and future', *Academy of Management review,* 32(2), pp. 344-354.

Schutt, R. K. (2012) 'Qualitative Data Analysis', *Investigating the Social World: The Process and Practice of Research 7*. USA: Sage Publications.

Scruton, R. (2014) *Green philosophy: how to think seriously about the planet.* Atlantic Books Ltd.

SEAI 2011. New Sustainable Energy Communities Commit to Energy Saving Projects. http://www.seai.ie/News_Events/Press_Releases/2011/New_Sustainable_Energy_Communities_Commit_to_Energy_Saving_Projects.html Downloaded May 2016.
SEAI (2018a) *BEC Programme 2019 Application Guide*: Sustainable Energy Authority of Ireland. Available at: https://www.seai.ie/resources/publications/BEC-Application-Guide-2018.pdf
SEAI (2018b) *Community Grants*: Sustainable Energy Authority of Ireland. Available at: https://www.seai.ie/grants/community-grants/.
SEAI (2018c) *Energy Master Plan - Funding Application Guidelines*. Available at: https://www.seai.ie/sustainable-solutions/community-projects/community-partnerships/Energy-Master-Plan-Funding-Application-guidelines.pdf
SEAI (2018d) *Sustainable Energy Communities (SEC) Partnership Agreement Application Guidelines*: Sustainable Energy Authority of Ireland. Available at: https://www.seai.ie/resources/publications/SEC-Partnership-Application-Guidelines.pdf.
Seligman, M. E. (1972) 'Learned helplessness', *Annual review of medicine,* 23(1), pp. 407-412.
Selman, P. (2001) 'Social Capital, Sustainability and Environmental Planning', *Planning Theory & Practice,* 2(1), pp. 13-30.
Seyfang, G. and Haxeltine, A. (2012) 'Growing grassroots innovations: exploring the role of community-based initiatives in governing sustainable energy transitions', *Environment and Planning C: Government and Policy,* 30(3), pp. 381-400.
Seyfang, G., Haxeltine, A., Hargreaves, T. and Longhurst, N. (2010) 'Energy and communities in transition–towards a new research agenda on agency and civil society in sustainability transitions', *University of East Anglia, Centre for Social and Economic Research on the Global Environment (CSERGE) Working Paper EDM F,* 10, pp. 13.
Seyfang, G., Park, J. J. and Smith, A. (2013) 'A thousand flowers blooming? An examination of community energy in the UK', *Energy Policy,* 61, pp. 977-989.
Seyfang, G. and Smith, A. (2007) 'Grassroots innovations for sustainable development: Towards a new research and policy agenda', *Environmental politics,* 16(4), pp. 584-603.
Shah, D. V., McLeod, J. M. and Yoon, S.-H. (2001) 'Communication, context, and community: An exploration of print, broadcast, and Internet influences', *Communication research,* 28(4), pp. 464-506.
Sheeran, P. (2002) 'Intention—behavior relations: a conceptual and empirical review', *European review of social psychology,* 12(1), pp. 1-36.
Shellenberger, M. and Nordhaus, T. 2005. The death of environmentalism: global warming politics in a post-environmental world. Grist Magazine.
Shove, E. (2003) 'Converging conventions of comfort, cleanliness and convenience', *Journal of Consumer policy,* 26(4), pp. 395-418.
Shove, E. (2010) 'Beyond the ABC: climate change policy and theories of social change', *Environment and planning A,* 42(6), pp. 1273-1285.
Shove, E. (2014) 'Putting practice into policy: reconfiguring questions of consumption and climate change', *Contemporary Social Science,* 9(4), pp. 415-429.

Shove, E., Pantzar, M. and Watson, M. (2012) *The dynamics of social practice: Everyday life and how it changes.* Sage.
Shove, E. and Spurling, N. (2013) *Sustainable practices: Social theory and climate change.* Routledge.
Shove, E. and Walker, G. (2007) 'CAUTION! Transitions ahead: politics, practice, and sustainable transition management', *Environment and Planning A,* 39(4), pp. 763-770.
Shove, E. and Walker, G. (2010) 'Governing transitions in the sustainability of everyday life', *Research policy,* 39(4), pp. 471-476.
Singer, P. (2009) *The life you can save: Acting now to end world poverty.* Random House.
Sirianni, C. and Friedland, L. (2009) *Social Capital*: Civic Practices Network. Available at: http://srdc.msstate.edu/fop/levelthree/trainarc/socialcapital/socialcapital-sirianni&friedland.pdf
Smedby, N. and Quitzau, M. B. (2016) 'Municipal governance and sustainability: The role of local governments in promoting transitions', *Environmental Policy and Governance,* 26(5), pp. 323-336.
Smith, A., Hargreaves, T., Hielscher, S., Martiskainen, M. and Seyfang, G. (2016) 'Making the most of community energies: Three perspectives on grassroots innovation', *Environment and Planning A,* 48(2), pp. 407-432.
Smith, A. and Raven, R. (2012) 'What is protective space? Reconsidering niches in transitions to sustainability', *Research policy,* 41(6), pp. 1025-1036.
Smith, J. and Firth, J. (2011) 'Qualitative data analysis: the framework approach', *Nurse researcher,* 18(2), pp. 52-62.
Sobal, J. (2001) 'Sample extensiveness in qualitative nutrition education research', *Journal of Nutrition Education,* 33(4), pp. 184-192.
Somers, M. R. (2005) 'Let them Eat Social Capital: Socializing the Market versus Marketizing the Social', *Thesis Eleven,* 81(1), pp. 5-19.
Soutar, I. and Mitchell, C. (2018) 'Towards pragmatic narratives of societal engagement in the UK energy system', *Energy research & social science,* 35, pp. 132-139.
Sovacool, B. K. (2009) 'The cultural barriers to renewable energy and energy efficiency in the United States', *Technology in Society,* 31(4), pp. 365-373.
Sovacool, B. K. (2011) 'Seven suppositions about energy security in the United States', *Journal of Cleaner Production,* 19(11), pp. 1147-1157.
Sovacool, B. K. and Dworkin, M. H. (2015) 'Energy justice: Conceptual insights and practical applications', *Applied Energy,* 142, pp. 435-444.
Spence, A., Demski, C., Butler, C., Parkhill, K. and Pidgeon, N. (2015) 'Public perceptions of demand-side management and a smarter energy future', *Nature Climate Change,* 5(6), pp. 550-554.
Stake, R. E. (1995) *The art of case study research.* Sage.
Stern, N. (2007) *The Economics of Climate Change: the Stern Report*, Cambridge, UK.
Stirling, A. (2006) 'Precaution, foresight and sustainability. Reflection and reflexivity in the governance of science and technology', *Reflexive governance for sustainable development. Cheltenham: Elgar*, pp. 225-272.
Stoner, J. A. F. (1961) *A comparison of individual and group decisions involving risk.* Massachusetts Institute of Technology.

Strengers, Y. (2011) 'Negotiating everyday life: The role of energy and water consumption feedback', *Journal of Consumer Culture,* 11(3), pp. 319-338.
Sunstein, C. R. (2009) *Going to extremes: How like minds unite and divide.* Oxford University Press.
Süsser, D., Döring, M. and Ratter, B. M. (2017) 'Harvesting energy: Place and local entrepreneurship in community-based renewable energy transition', *Energy Policy,* 101, pp. 332-341.
Szreter, S. (2001) 'A new political economy: The importance of social capital', *The global third way debate*, pp. 290-299.
Szulecki, K. (2018) 'Conceptualizing energy democracy', *Environmental Politics,* 27(1), pp. 21-41.
Tanimoto, K. (2012) 'The emergent process of social innovation: multi-stakeholders perspective', *International Journal of Innovation and Regional Development 5,* 4(3-4), pp. 267-280.
Taoiseach Leo Varadkar (2018) *Speech of An Taoiseach, Leo Varadkar T.D., Project Ireland 2040 - Climate Action Thematic Event Smock Alley Theatre Wednesday, 20 June 2018*. Available at: https://www.taoiseach.gov.ie/eng/News/Taoiseach's_Speeches/Speech_of_An_Taoiseach_Leo_Varadkar_T_D_Project_Ireland_2040_-_Climate_Action_Thematic_Event_Smock_Alley_Theatre_Wednesday_20_June_2018.html.
Thaler, R. and Sunstein, C. (2008) 'Nudge: The gentle power of choice architecture', *New Haven, Conn.: Yale*.
Thaler, R. H. (1988) 'Anomalies: The ultimatum game', *The Journal of Economic Perspectives,* 2(4), pp. 195-206.
Thomas, C. W. (1998) 'Maintaining and restoring public trust in government agencies and their employees', *Administration & society,* 30(2), pp. 166-193.
Titmuss, R. M. (1970) 'The gift relationship', *London,* 19, pp. 70.
Toffler, A. (1980) *The third wave.* Bantam books New York.
Toke, D. (2002) 'Wind power in UK and Denmark: can rational choice help explain different outcomes?', *Environmental politics,* 11(4), pp. 83-100.
Tompkins, E. L. and Adger, W. N. (2005) 'Defining response capacity to enhance climate change policy', *Environmental Science & Policy,* 8(6), pp. 562-571.
Torney, D. (2017) 'If at first you don't succeed: the development of climate change legislation in Ireland', *Irish Political Studies,* 32(2), pp. 247-267.
Tritter, J. Q. and McCallum, A. (2006) 'The snakes and ladders of user involvement: moving beyond Arnstein', *Health policy,* 76(2), pp. 156-168.
Trotter II, R. T. (2012) 'Qualitative research sample design and sample size: Resolving and unresolved issues and inferential imperatives', *Preventive medicine,* 55(5), pp. 398-400.
Tversky, A. and Kahneman, D. (1973) 'Availability: A heuristic for judging frequency and probability', *Cognitive psychology,* 5(2), pp. 207-232.
Tversky, A. and Kahneman, D. (1985) 'The framing of decisions and the psychology of choice', *Environmental Impact Assessment, Technology Assessment, and Risk Analysis*: Springer, pp. 107-129.
Tweed, C. (2013) 'Socio-technical issues in dwelling retrofit', *Building Research & Information,* 41(5), pp. 551-562.

Twohig, P. L. and Putnam, W. (2002) 'Group interviews in primary care research: advancing the state of the art or ritualized research?', *Family practice,* 19(3), pp. 278-284.
UCC (2016) *Research Ethics at University College Cork*. Available at: https://www.ucc.ie/en/media/research/researchatucc/documents/IntroductiontoResearchEthicsatUCC.pdf.
UCC (2018) *Code of Research Conduct*. Available at: https://www.ucc.ie/en/media/research/researchatucc/policiesdocuments/UCCCodeofResearchConductV2.2FINAL141218.pdf.
UKCEC (2019) *Start Your Own Community Project*. Available at: https://www.ukcec.org/start-your-own-community-energy-project
UNFCCC (2018) *The Paris Agreement*. Available at: http://unfccc.int/paris_agreement/items/9485.php.
UNV (1997) *Proposed International Year of Volunteers, 2001 - Background Note*: United Nations Volunteers, Bonn. Available at: https://www.gdrc.org/ngo/iyv/bg-note.html
Upadhyaya, M., May, M. and Highfield, L. (2015) 'Integrating classroom, community, mixed-methods research, and community-based participatory research to teach public health practice', *Public Health Reports,* 130(3), pp. 286-292.
Upham, P. (2009) 'Applying environmental-behaviour concepts to renewable energy siting controversy: Reflections on a longitudinal bioenergy case study', *Energy Policy,* 37(11), pp. 4273-4283.
Upreti, B. R. and van der Horst, D. (2004) 'National renewable energy policy and local opposition in the UK: the failed development of a biomass electricity plant', *Biomass and bioenergy,* 26(1), pp. 61-69.
Valkenburg, G. and Cotella, G. (2016a) 'Governance of energy transitions: about inclusion and closure in complex sociotechnical problems'.
Valkenburg, G. and Cotella, G. (2016b) 'Governance of energy transitions: about inclusion and closure in complex sociotechnical problems', *Energy, Sustainability and Society,* 6(1), pp. 20.
van Bavel R., Herrmann B., Esposito G. and A., P. (2013) *Applying Behavioural Sciences to EU Policymaking: JRC Working Papers JRC83284*, Seville: Joint Research Centre
Van der Schoor, T. and Scholtens, B. (2014) 'Power to the people: Local community initiatives and the transition to sustainable energy', *Renewable and Sustainable Energy Reviews,* 43(March (2015)), pp. 657-666.
Veenstra, G. and Lomas, J. (1999) 'Home is where the governing is: social capital and regional health governance', *Health & Place,* 5(1), pp. 1-12.
Verplanken, B. (2012) 'Old habits and new routes to sustainable behaviour', in Whitmarsh, L., Lorenzoni, I. & O'Neill, S. (ed.) *Engaging the public with climate change: Behaviour change and communication*: Routledge, pp. pp.17-31.
Verweij, M. and Thompson, M. (2006) *Clumsy solutions for a complex world: Governance, politics and plural perceptions.* New York: Palgrave Macmillan.
Vohs, K. D., Mead, N. L. and Goode, M. R. (2006) 'The psychological consequences of money', *science,* 314(5802), pp. 1154-1156.
Waitt, G. and Harada, T. (2012) 'Driving, cities and changing climates', *Urban studies,* 49(15), pp. 3307-3325.

Walker, B., Holling, C. S., Carpenter, S. R. and Kinzig, A. (2004) 'Resilience, adaptability and transformability in social–ecological systems', *Ecology and society,* 9(2).
Walker, G. (2008) 'What are the barriers and incentives for community-owned means of energy production and use?', *Energy Policy,* 36(12), pp. 4401-4405.
Walker, G. and Cass, N. (2007) 'Carbon reduction,'the public'and renewable energy: engaging with socio-technical configurations', *Area,* 39(4), pp. 458-469.
Walker, G. and Devine-Wright, P. (2008) 'Community renewable energy: What should it mean?', *Energy policy,* 36(2), pp. 497-500.
Walker, G., Devine-Wright, P., Hunter, S., High, H. and Evans, B. (2010) 'Trust and community: Exploring the meanings, contexts and dynamics of community renewable energy', *Energy Policy,* 38(6), pp. 2655-2663.
Walker, G., Hunter, S., Devine-Wright, P., Evans, B. and Fay, H. (2007) 'Harnessing community energies: explaining and evaluating community-based localism in renewable energy policy in the UK', *Global Environmental Politics,* 7(2), pp. 64-82.
Warde, A. (2014) 'After taste: Culture, consumption and theories of practice', *Journal of Consumer Culture,* 14(3), pp. 279-303.
Warren, C. R. and McFadyen, M. (2010) 'Does community ownership affect public attitudes to wind energy? A case study from south-west Scotland', *Land use policy,* 27(2), pp. 204-213.
Watson, C. (2013) *Chasing Hubcaps: Climate Change and Human Behaviour*. Available at: www.chasinghubcaps.com.
Watson, C., Boyle, E., Mullally, G. and Gallachóir, B. Ó. (2020) 'Responding to the Energy Transition in Ireland: The Experience and Capacity of Communities'.
Watson, C., Mullally, G. and Ó Gallachóir, B. (2015) *'Community Engagement on Energy' Workshop Report*: ERI/MaREI/UCC.
Weber, E. U. (2006) 'Experience-based and description-based perceptions of long-term risk: Why global warming does not scare us (yet)', *Climatic change,* 77(1-2), pp. 103-120.
Weisbach, D. and Sunstein, C. R. (2009) 'Climate change and discounting the future: a guide for the perplexed', *Yale Law & Policy Review,* 27(2), pp. 433-457.
Wester, K. L. (2011) 'Publishing ethical research: A step-by-step overview', *Journal of Counseling & Development,* 89(3), pp. 301-307.
White, S. C. (1996) 'Depoliticising development: the uses and abuses of participation', *Development in practice,* 6(1), pp. 6-15.
Whitmarsh, L. (2008) 'Are flood victims more concerned about climate change than other people? The role of direct experience in risk perception and behavioural response', *Journal of Risk Research,* 11(3), pp. 351-374.
Whitmarsh, L., O'Neill, S. and Lorenzoni, I. (2011) 'Climate change or social change? Debate within, amongst, and beyond disciplines', *Environment and Planning A,* 43(2), pp. 258-261.
Whitmarsh, L. and O'Neill, S. (2012) 'Opportunities for and barriers to engaging individuals with climate change', in Whitmarsh, L., Lorenzoni, I. & O'Neill, S. (eds.) *Engaging the public with climate change: Behaviour change and communication*: Routledge, pp. 10-14.
Wiersma, B. and Devine-Wright, P. (2014) 'Decentralising energy: comparing the drivers and influencers of projects led by public, private, community and third sector actors', *Contemporary Social Science,* 9(4), pp. 456-470.

Wilcox, D. (1994) *The Guide to Effective Participation*, Brighton: Partnership Available at: http://partnerships.org.uk/guide/ (Accessed: 12th Feb 2019).
Wilson, C. and Chatterton, T. (2011a) 'Multiple Models to Inform Climate Change Policy: A Pragmatic Response to the 'Beyond the ABC' Debate', *Environment and Planning A: Economy and Space,* 43(12), pp. 2781-2787.
Wilson, C. and Chatterton, T. (2011b) 'Multiple models to inform climate change policy: a pragmatic response to the 'beyond the ABC'debate', *Environment and Planning A,* 43(12), pp. 2781-2787.
Wittmayer, J. M. and Schäpke, N. (2014) 'Action, research and participation: roles of researchers in sustainability transitions', *Sustainability science,* 9(4), pp. 483-496.
WMO (1979) *Proceedings of the World Climate Conference* World Meterological Organisation, Geneva. Available at: https://library.wmo.int/pmb_ged/wmo_537_en.pdf.
Wolsink, M. (1989) 'Attitudes and expectancies about wind turbines and wind farms', *Wind engineering*, pp. 196-206.
Wolsink, M. (1994) 'Entanglement of interests and motives: assumptions behind the NIMBY-theory on facility siting', *Urban studies,* 31(6), pp. 851-866.
Wolsink, M. (2000) 'Wind power and the NIMBY-myth: institutional capacity and the limited significance of public support', *Renewable energy,* 21(1), pp. 49-64.
Woolcock, M. and Narayan, D. (2000) 'Social Capital: Implications for Development Theory, Research, and Policy', *The World Bank Research Observer,* 15(2), pp. 225-249.
Woolcock, M. and Sweetser, A. (2002) *Social Capital - The Bonds that Connect*. Review. Available at: https://www.academia.edu/19993363/Bright_ideas_social_capital_the_bonds_that_connect.
World Bank (1996) *The World Bank Participation Sourcebook*, Washington D.C.: The World Bank. Available at: http://documents.worldbank.org/curated/en/289471468741587739/pdf/multi-page.pdf.
Yang, K. (2005) 'Public administrators' trust in citizens: A missing link in citizen involvement efforts', *Public Administration Review,* 65(3), pp. 273-285.
Yang, K. (2006) 'Trust and citizen involvement decisions: Trust in citizens, trust in institutions, and propensity to trust', *Administration & Society,* 38(5), pp. 573-595.
Yohe, G. W. (2001) 'Mitigative Capacity – the Mirror Image of Adaptive Capacity on the Emissions Side', *Climatic Change,* 49(3), pp. 247-262.
York, R. (2006) 'Ecological paradoxes: William Stanley Jevons and the paperless office', *Human Ecology Review,* 13(2), pp. 143.
Zetter, R., Griffiths, D., Sigona, O., Flynn, D., Pasha, T. and Beynon, R. 'Immigration, Social Cohesion and Social Capital: What are the Links?, Joseph Rowntree Foundation'. *Reconsidering the Role of Conflict in the Lives of Refugees: The Case of Somalis in Europe. MICROCON Research Working Paper*: Citeseer.
Zimmerman, M. A. (1995) 'Psychological empowerment: Issues and illustrations', *American journal of community psychology,* 23(5), pp. 581-599.

APPENDIX 1 COMMUNITY ENERGY GROUPS IN STUDY (as of Aug 2018)

	Group Structure	Objectives	Main Focus of Work
ARAN ISLANDS ENERGY CO-OP	Set up in 2012; community owned energy co-operative and a sub-committee of Aran Development Company; 12 elected Board members; 80 members (for life on the purchase of €100 shares); Annual General Meeting held each year; all volunteers; SEAI SEC	Eliminate fossil fuels; produce renewable electricity retrofit all the buildings and install renewable energy technologies; promote electric transport; participate in research, development and education; provide sustainable employment; preserve local culture; be an international example of best practice.	Retrofitting through the SEAI BEC scheme; promotion of electric cars and other RE technologies; progressing a community-owned wind turbine project; involvement in 6 research projects, including 2 international studies.
CLAREMORRIS & WESTERN DISTRICT ENERGY CO-OP, CO MAYO	Set up in March 2015; community owned energy co-operative; 15 people in group (April 2016) with another 20 to join in following 3 months; profits expected to go back into the Co-op; all volunteers; SEAI SEC	To promote and demonstrate all types of renewable energy systems; to set up a wood chip (backed up by bio-methane) district heating system in Claremorris, which is already on the gas grid; to network with local groups and get their support	Demonstrating how a bio-digester works; setting up a woodchip district heating system in Claremorris town; investing in solar power; buying and selling local power
CLOUGHJORDAN ECO-VILLAGE, CO TIPPERARY	Project began in 1997; Company Ltd. by Guarantee (Sustainable Projects Irl., trading as The Village), with Members' Agreement & Ecological Charter; 130 members; charity status; consensus decision-making; full-time paid general manager, part time sales manager & part time administrator (2007-2012) – now only volunteers; SEAI SEC	To be a centre of excellence for awareness raising and education on: energy conservation and production; reduction and recycling of resources; sustainable livelihoods; sustainable, local, food production; community understanding of challenges and resilience.	The establishment of Ireland's first eco-village; awareness raising, education and training; currently trying to bring the defunct 500sqm of solar thermal panels back into production for the eco-village's district heating system.
ENERGY COMMUNITIES TIPPERARY CO-OP, CO TIPPERARY	Drombane/Upperchurch Energy Group formed in 2010; 4 communities (2014); 8 communities (2015); 14 communities (2017); community owned energy co-operative; 13 Directors on Board; monthly Board meetings which group members can attend; decisions made by consensus; Project Manager & part-time Financial Controller funded through the BEC grant and energy credits.	To save energy, save money, create warm homes and develop sustainable local jobs; to create local energy, either through hydro, wind, or solar power, or from local biomass.	Retrofitting of homes and community buildings under SEAI's BEC programme.
KERRY SUSTAINABLE ENERGY CO-OP	Initially a sub-group of Transition Kerry; community owned energy co-operative with Board of Directors and steering committee set up in Oct 2015; Annual General Meeting; 107 members (€10 p/year for 10 life-time shares) - largest community co-op in Irl; had part-time administrator on work scheme for 6 mths, now all volunteers; SEAI SEC	Energy conservation and production; implementation of Transition Kerry's Sustainable Energy Community Road Map 2030.	Retrofitting; sale of locally sourced firewood to members; education; public information events; networking and lobbying; piloting energy allotments.
SUSTAINABLE CLONAKILTY, CO CORK	Set up in 2007; Company Ltd. by Guarantee; registered charity; voluntary part-time administrator (2006 - mid-2012); until 2012, 16 people actively involved in committee; over 230 people on email contact list; over 70 paid up members; 25-80 people attended public meetings; Facebook page had 900+ members	To understand how much energy Clonakilty uses; to conserve as much energy as possible; to identify local sources of RE, & encourage people to produce their own RE; to encourage local public/private partnerships to establish small renewable energy power stations close to the town.	Awareness raising and activities around local food production, sustainable transport and energy, and energy saving; local energy audit and preparation of local energy roadmap; retrofitting under SEAI BEC 2015.
TEMPLEDERRY COMMUNITY WINDFARM	Project began in 1999; Templederry Energy Resources Ltd. (2003) to manage the project; 8 Directors, with working group of 4; 30 shareholders - 27 owned by indivs., 1 by the TEA (in lieu of services rendered), 2 for the benefit of the local community (administered by a co-operative); Templederry Windfarm Ltd (2010), to oversee financing & power purchase agreement; Community Renewable Energy Supply (CRES) (2015) as subsidiary of Templederry Wind Farm Ltd - Irelands first Community Owned Licenced Supply Company; CRES employs 1 person; Templederry Windfarm, all volunteers	Windfarm - to provide local energy; stimulate local economy; decrease the environmental impact of energy; reinvest the profits in further investment in energy efficiency and renewable energy. CRES – to transform the electricity market; to empower local communities to create local grids; to pilot the software platform, simplify the process and make it available to communities.	Windfarm - development and operation of community owned windfarm (two 2.3MW turbines). CRES – development of software and battery technology to facilitate community grids; helping 4 community sub-partners (Aran Islands Energy Co-op, Claremorris & Western District Energy Co-op, Limerick Food Co-op and ECTC) to develop community energy solutions; participating in a 3-year Interreg project with a focus on moving from being a small supplier (limited to 200 customers) to a large utility
TERENURE ENERGY GROUP	Set up in 2013 under the auspices of 'I Love Terenure', a local non-profit membership based organisation for local traders; is in the process of setting up separate administrative and legal structure; 7 people on the steering committee	Project manage their own BEC scheme, following the ECTC model; be the 'marketing arm' for local contractors; complete a GIS analysis on house types in the area and produce marketing document; possibly set up South Dublin Energy Co-operative; produce their own energy	BEC Retrofitting

	Achievements	National Recognition	Funding Received
ARAN ISLANDS ENERGY CO-OP CO GALWAY	24% reduction in imported heating fuel; 250 homes/ community buildings retrofitted; introduction of new technologies-Tesla battery, LED lighting, energy monitoring, 50+ heat pumps, PV on 35+ houses, 9 electric cars; local awareness, more community involvement; networking & participating in groups/conferences in Irl & Europe; education; investigating wind/solar generation; potential suitable site for two, possibly three, small wind turbines, 900KW each.	Featured in Eco-Eye TV programme (2014); 2014 SEAI Ambition Award; 2015 visit by Minister Alex White (DCENR); case study in Energy White Paper (2015)	€3,000 from Galway Co. Co.; €8,000 from 80 shareholders; SEAI BEC finance through EnergyWise Construction (2013-2017); €15,000 from SEAI SEC (Energy Master Plan); €48,000 from EU RESPOND programme (2017). Inis Oírr Community Devt Co-op, EnergyWise Consultants & NUIG partnership secured SEAI grant to study implementation of smart grid on Inis Oirr (2017)
CLAREMORRIS & WESTERN DISTRICT ENERGY CO-OP, CO MAYO	Members attended 3-day course on district heating in Cloughjordan; built working demonstration model of anaerobic digester, demonstration events facilitated; working with Mayo Co Council to find suitable site for district heating system, interest garnered from a number of local businesses; partnered with Templederry Community Windfarm group to submit grid application for 3MW solar system for Claremorris; partnered with Templederry's CRES to buy / trade local power.	N/A	Grant for demonstration model of anaerobic digester from Gas Network Ireland (2015)
CLOUGHJORDAN ECO-VILLAGE, CO TIPPERARY	Site secured (2003); fully owned (2005); all 130 sites sold/booked (2007); Community Farm operational (2008); 1MW wood-chip district heating system installed; first residents moved in (2009); 17,000 trees, 600 apple trees planted (2011); partner in Sustainable Energy for the Rural Village Environment (SERVE) Project (2007-2012); 55 homes built (2015); installation of 14KW solar PV; tours organised for visitors; eco-footprint lowest measured in Ireland.	Gold Medal at LivCom (2013); IPB Co-operation Ireland Pride of Place Awards-Eco Initiative Category (2014); One of 23 successful EU 'anticipatory experiences' of transition to low-energy society (2014)selected by Milesecure; represented Ireland at European Ace Energy Awards (2014); Young Foundation acknowledgement as one of most interesting social innovation projects in Europe (2016)	€750,000 from EU CONCERTO Framework Programme/SERVE-2 full-time positions, €350,000 grant for district heating system, & support for house builders to achieve B3 & higher ratings); 2017 BEC grant for PV installation
ENERGY COMMUNITIES TIPPERARY CO-OP, CO TIPPERARY	BEC (2012-2017) - est. €7 million/ 800 buildings upgraded. (€2.9 million/ 200 homes in 2017); carbon credits have funded local projects- solar lighting in parks, upgrading boilers, LED lighting in church; 2013- case study on Retrofitting the Local Economy & two-way communication developed with SEAI leading to practical changes in BEC scheme, both at SEAI & community level; more communities added each year; new technology in practice & on display in the communities; co-operative approach; local employment with local contractors; improved co-operation between local parties.	Featured in Eco-Eye TV (2015); winner of 'Best Community Renewable Energy Project' at ACE Awards for Sustainable Energy (2014); finalist in Community category SEAI Energy Awards (2014); shortlisted in 'Get Involved' competition (2014); winner of 'Best Community RE Project' award at Community & Council Awards (2014); winner of SEAI Community Award (2017)	SEAI BEC finance (2012-2017); €4,000/5,000 from NTLP (Drombane/Upperchurch energy survey); Clann Credo (bridging finance); supplier sponsorship - Boru Stoves, Sola (Solaregy), Climote & Grant Engineering (2015); waiting for an SEC €15,000 grant to be drawn for feasibility study into potential generation scheme on micro-hydro, PV, wind or bio-mass (anaerobic digester)
KERRY SUSTAINABLE ENERGY CO-OP, CO KERRY	SEAI BEC scheme (2017) €450k (of €850k) – retrofitting projects; acted as intermediary in securing SEAI Smart Lighting grant (€5k) for SME; Door to door Heat Mapping Survey in 2 estates; sale/ delivery of locally grown wood to members; public awareness info. nights; presence at events/exhibitions; successful spin-off from Transition Kerry; development of co-op structure & good co-operative working relationships; auditing & revenue registration; group marketing & branding; 2 newsletters a year.	N/A	In 2016, the group had part-time administrator, funded by Kerry County Council & administered through Transition Kerry - paid six hours per week, for six months, then worked voluntarily for second six months; SEAI BEC (via contractor); profit from firewood sales; membership fees
SUSTAINABLE CLONAKILTY, CO CORK	Special interest group set up to target specific goals; a wide range of events organized, leading to shifts of thinking, spin-off actions and behaviour changes; Study trip to Güssing, after which 'Clonenergy 2020' was born (2008); Energy Week (2010); Renewable Energy Roadmap (2011); one of SEAI's five new Sustainable Energy Communities (2011); partnered with NCE Insulation to carry out BEC upgrades to Fernhill House Hotel, Richy's Bistro, Clon Rugby Club and the Clonakilty Bike Scheme (2015)	Eco Eye (2011); press launch of Clonakilty BEC 2015 attended by SEAI CEO & other representatives	Members' fees, donations & local fund-raisers; €10k from Failte Ireland/ Clonakilty Chamber of Tourism & €4k from Clonakilty Town Council for energy audit (2008); €27k from West Cork Devt Partnership (WCDP) under Rural Dev.Plan (2007 – 2013) for Renewable Energy Study & Roadmap to Energy Neutrality by 2020 (2010); €4k from Clonakilty Town Co. Community Funds (2010-2012); €4,750 from Cork Co. Co. LA 21 Funds (2008-2011)
TEMPLEDERRY COMMUNITY WINDFARM CO TIPPERARY	Project development plan (1999); feasibility studies on fuel options (2001); 4 members certified in RE; public meetings & PR; planning permission granted, (then lost) for three 1.3MW turbines (2003); grid connection (2007); planning granted for two 2.3MW turbines (2010); joined Business Expansion Scheme (2011); project producing enough electricity to power 3,000 homes (2012); Community Renewable Energy Supply Company (CRES) set up (2015); grid applications lodged for 4 solar farms (one with Claremorris and Western District Energy Co-op). CRES - completed the process of becoming a licensed supply company; successful in applying for Interreg funding; pilot project for supplying electricity both domestically & commercially	Windfarm officially opened in Sept. 2013 by Minister for Communications, Energy & Natural Resources, Pat Rabbitte, alongside Environment Minister, Alan Kelly, and Brian Motherway, CEO of SEAI; featured on Eco-Eye TV programme (2014); local media coverage, The Irish Times (2013), Irish Independent (2014)	Windfarm – North Tipperary LEADER partnership (€10,000 for initial development plan, and €15,000 for wind measuring ananometer); Tipperary North County Enterprise Board (€15,000 for 3 feasibility studies); Enercon (bridging loan); De Lage Landen (project finance); Business Expansion Scheme (investors); CRES - Enterprise Ireland (€10,000 for feasibility study/ mentoring); funding as part of a 3-year Interreg project looking at the concept of community grids and how supply can be generated locally using batteries and software

TERENURE ENERGY GROUP CO DUBLIN	BEC 2016: lead applicant working through contractor (project manager) €1 million retrofitting project - upgraded 48 buildings; BEC 2017: though contractor carried out €½ million retrofitting project, which included solar PVs on St. Marys College; in process of building internal capacity to be more directly involved, e.g. as marketing lead partner for contractor; organized series of community meetings – the last one in Feb 2017 attracted 180 people; completed a business plan (2018).		SEAI SEC Approval for €15,000 (less VAT) for GIS Analysis & House-Type measuring and marketing (2017)

	Other Supports received	Challenges	Disappointments
ARAN ISLANDS ENERGY CO-OP CO GALWAY	SEC mentors - Energy Co-Ops Ireland; SEAI (seminars & networking); Tipperary Energy Agency (technical expertise); NUIG (EU RESPOND & hydrogen projects); Udarás na Gaeltachta; Galway Co. Co.; GMIT; Tyndall Research Instit, UCC; Marine Institute of Ireland	Siting of wind turbine site hampered by local opposition & Special Area of Conservation designation; financial difficulties; bureaucracy; group conflict; burn-out; slow progress	Slow progress; not succeeding yet with a wind turbine; disappointment with government; very little progress on producing local energy; unable to attract sea salt company due to lack of RE
CLAREMORRIS AND WESTERN DISTRICT ENERGY CO-OP, CO MAYO	Mayo Co Council and local businesses; Templederry Community Windfarm and CRES; Tipperary Energy Agency (feasibility study on district heating system); Renewable Gas Forum; GMIT and NUIG (2 students working on digester and emissions from chimneys); IRBEA	The group's efforts to engage with the ESB & bring an electric car and van to Claremorris ultimately failed	
CLOUGHJORDAN ECO-VILLAGE, CO TIPPERARY	Tipperary Energy Agency (TEA) with 2017 BEC grant application for PV installation	Economic crash meant that 47 sites still up for re-sale; unable to get discharge license for reed bed treatment system; lack of funding has prevented the building of a number of planned community facilities; solar thermal collectors inoperative.	Change of planning personnel; higher than expected cost of land; National Roads Authority Standards (affected internal road design); no feed-in tariffs
ENERGY COMMUNITIES TIPPERARY CO-OP, CO TIPPERARY	North Tipperary LEADER Partnership (NTLP) community; Tipperary Energy Agency (TEA)-technical advice, training workshops, assistance with BEC process; NTLP 9-month internship for a Community Energy Officer, became ECTC Project Manager (2012); TEA/Grundivig Life Long Learning Partnership organized trip to Belgium for two group members to learn about sustainability projects (2013); Limerick Institute of Technology (LIT) (advice & student to assist with survey); Tidy Towns support to ECTC members	Time pressures; interpersonal issues & disagreements; limits to volunteering; being able to say no; changes to scheme midway from SEAI; intransigence of SEAI at times; on-going challenge meeting formal requirements; lack of technical knowledge; managing, operating and scaling up from being one community group to a co-operative; data protection; selling the idea of deeper retrofit; no contingency plan if Project Manager leaves.	Level of support from SEAI in early years; drop off of volunteers once their houses are retrofitted, leaving only a small group to build up support; SEAI asking for a holistic approach & not accepting that many householders will only want, or be able to afford, to make the changes one by one
KERRY SUSTAINABLE ENERGY CO-OP, CO KERRY	Transition Kerry provides invaluable mentorship & support; SEAI SEC mentor; SEAI SEC; Energy Officers in Kerry County Council; North and East Kerry Development Company (NEKD); voluntary efforts; free room for meetings; EU SmartReFlex project (2014-2017)	Commitment/ voluntary time required; lack of funding; knowledge gap; trying to show leadership; government policy not coherent enough; difficulties in understanding how SEAI works; administration required for SEC; completion of BEC 2017; BEC set back due to loss of bonus payment; committee members' non-attendance or not finding a role for themselves, drop outs and some angst; public disinterest and lack of political will; level of technical and administrative upskilling required; no example to follow.	People pulling out of projects, and changing the goal posts; lack of government progress on EU 2020 targets; gas pipeline into Listowel (3 people listed this); lack of support from SEAI on co-ordinator role; how to develop a project that generates income; how to get message across and people involved; low turn-out at some meetings
SUSTAINABLE CLONAKILTY, CO CORK	Clonakilty Town Council, West Cork Development Partnership, Clonakilty Tidy Towns & Clonakilty Chamber of Tourism have all been supportive of the group's work; Airtricity Coomatallin Wind Farm Community Fund donated a Sustainable Clonakilty two-sided banner & a generous number of home energy meters.	Managing multiple actors in SEAI BEC; SEAI finances were 'a nightmare'; needed solicitor/ accountant on their team; regret not setting up through SusClon as a private trading company with suitable insurance to run the project; not being set up as an energy service company; loan from financier was an expense - the Pay as You Save model, 10% annual percentage rate of charge (APR), would be more palatable, rather than paying interest; an outside contractor visited while the work was ongoing, but no site visits from SEAI until press launch in Oct 2015; two of the main projects pulled out at the last minute	Failed bid to be one of SEAI's three SECs (2011); no follow up to GAA/ SEAI BER scheme (2011); SusClon went into temporary recess due to recession, retirement of voluntary administrator, burn-out, lack of tangible Cork Co. Co. support, lack of core funding for group (Dec 2012). occasional Sustainable Clonakilty meetings resumed in 2013/2014, and new members sought, BEC 2015 carried out; no BEC application submitted in 2016; group gave up on SusClon 2020 carbon neutral target
TEMPLEDERRY COMMUNITY WINDFARM CO TIPPERARY	Tippearary Energy Agency; North Tipperary Leader Partnership; North Tipperary County Council; Focus Consulting; Electric Ireland; Wind Prospect Ireland; Enercon; De Lage Landon & BDO Investment	Windfarm - no clear guidelines & criteria; having to personally guarantee bank loans; no real government & agency support for community energy; bigger project would have been easier & cheaper; poor planning guidelines.	Windfarm–planning permission granted 2003 but grid connection not approved until 2007; new application needed & 9 local objections were then lodged; in 2012, 45 shareholders secured and €120k collected for Phase 2, 2 local objections were made. Planning was refused & €90k lost.
TERENURE ENERGY GROUP CO DUBLIN	The two tech/admin SEC mentors from Sligo IT helped with preparation of business plan & with application for €15,000 grant, & are giving on-going support with plan implementation.	Transitioning from working with energy contractor to being more directly involved – no LEADER or other ready source of funding; establishing 'Pay-As-You-Save' financing package for BEC participants; lack of models/pathways to follow – they would like to go to an ECTC kind of model; SEAI demands; financial heft before starting BEC – where does TEG start without money?; lack of project manager; time/ challenges of volunteering; at the end of 2016 SEAI disapproved of the contractor they had secured so they had to go and find another company	Failed to submit BEC application (2014); successful in 2015, but SEAI did not release the money, participants lost due to time delays; in 2015 SEAI had insufficient funds to include TEC despite indicating that they would be approved; contractor not accepted by SEAI for 2017 BEC.

	Barriers	Additional Supports Required	Future Challenges Expected	Plans for the Future
ARAN ISLANDS ENERGY CO-OP CO GALWAY	Disinterest from some & lack of participation; lack of community commitment & activism; lack of community support for wind turbine; bureaucracy; lack of proper funding/ right supports; government not facilitating it & not moving fast enough; lack of feed-in tariff; vested interests; financial cost of planning & planning restrictions; lack of financial/ planning expertise on committee to further the agenda	Skill sets/ training programmes to manage financial, planning & technical issues; planning needs to be more accessible & less expensive; co-operation with industry & 3rd level institutions; financial security – regular income to cover administration costs; supports & training workshops need to be more accessible; need funding for travelling expenses; need loans that only have to be paid back if project is successful	Climate change effects; community support & planning for wind turbine and PV farm; back-up support for maintenance of new technologies including electric vehicles on the island; dealing with conflict within committee; attracting more young members & more community support; maintaining better communication with islanders through social media	Create a micro-grid; become self-sufficient in energy production; present a planning application to Galway Co. Co. next year for wind turbine; invest profits for the benefit of the community; increase the number of houses using heat pumps & PV panels; arrest population decline; preserve the culture
CLAREMORRIS ENERGY CO-OP, CO MAYO				
CLOUGHJORDAN ECO-VILLAGE, CO TIPPERARY	Money for project management; clear leadership from government in relation to feed-in tariffs & how energy citizens will really be supported	Lack of clear national government policy		
ENERGY COMMUNITIES TIPPERARY CO-OP, CO TIPPERARY	Government policy & regulation; lack of public awareness; BEC application process; no feed-in tariff; lack of available mentors for new groups; limiting the discretion of communities to invest energy credit funds as they see fit	Concrete examples of new technology; holistic SEAI approach on houses; training in project management; the provision of independent, objective info pre-BER; learn from what is being achieved in other EU countries	Recruiting houses for deep retrofit work; keeping existing communities involved; lack of feed-in tariffs; regulation, data protection, audits, compliance with directives; discretion on energy credit funds & their disbursement should rest with energy communities; availability of capital to fund generation; development agencies to be adequately funded to provide technical information & training	Energy generation; forestry & timber production; the development of micro grids, supporting local areas; using energy credits to invest in energy saving schemes (with CRES); the generation & sale of electricity from their own windfarm; expand the number of Co. Tipperary communities in ECTC; diversification into energy conservation, behaviour & generation
KERRY SUSTAINABLE ENERGY CO-OP, CO KERRY	Lack of funding; lack of knowledge; govt policy; no one to follow as an example; lobbying power of big business; no biomass/PV strategy yet; how to finance RE projects; vested interests; expecting volunteers to do all the work	Part-time worker - co-ordinator role needs to be financed; grid access to be prioritised for co-operatives & communities; structure of Co-ops on county wide basis to be put in place; financial support at some minimal level	Generating revenue; funding for administration; time as volunteers; SEC programme to be meaningful for Co-operatives; BEC/SEC development; SEAI structure; finding reliable contractors; meeting expectations of applicants	BEC 2018; training; wood selling; investigate community owned applications for solar; set up co-op as energy service company; run community owned biomass/PV farms; run district heating in larger towns; continue doing what is possible with available resources; try to develop employment for SEC; promotion across church related bodies; cluster people together to buy solar PV.
SUSTAINABLE CLONAKILTY, CO CORK	Difficulty in accessing data to ascertain total energy consumption of town & surrounding area, so had to do survey on house to house basis; lack of core funding for group & employment of administrator/co-ordinator; complexity of BEC process			The remaining members of Sus. Clon. have agreed to downscale their ambitions – the SusClon 2020 carbon neutral target is unrealistic, so, as of 2016, they were focusing on smaller projects, such as growing trees to offset their members' carbon footprint, & holding bi-monthly public meetings on sustainable topics.
TEMPLEDERRY COMMUNITY WINDFARM CO TIPPERARY	Windfarm - no mechanism for access to the grid- a percentage should be ring-fenced for communities and be affordable; planning process & lack of clear guidelines to planners re wind, solar and all renewables; engaging communities locally & getting voluntary & commercial commitments			The group expects to be granted grid access for 4 solar farms – offers have been made and 10% of each offer has to be paid upfront to ESBN.
TERENURE ENERGY GROUP CO DUBLIN	Funding the transition to BEC if your group doesn't have financial resources; no REFIT (Renewable Energy Feed-in Tariff) scheme for investing in PV, which means economics of PV are not compelling; SEAI reputation for being challenging; time to make it happen; filling in complicated forms – very time consuming; red tape	Finance for transition to work, like Tipperary model; help to think through ways to produce energy & move from a voluntary to sustainable group	Becoming established as primary actor in BEC; getting investors to invest in RE in a way that the risk is accepted; shifting to production; dealing with sophisticated well-funded utilities; funding the transition from being a voluntary group without any resources to being actively involved in a BEC	Identify 6 house types in Terenure, and how each can achieve an A rating. Involves GIS analysis and marketing document - group then plans to approach contractors and mobilise community interest for a % fee; group has also been looking at central collaborations with companies like Kingspan; become sales/ marketing arm of network of local suppliers– providing trusted brand; ECTC model to employ own project manager;

APPENDIX 2 COMMUNITY ENGAGEMENT WORKSHOP REPORT

'COMMUNITY ENGAGEMENT ON ENERGY' WORKSHOP

Clare Watson
Gerard Mullally
Brian Ó Gallachóir

WORKSHOP REPORT
SEPTEMBER 2015






UCC University College Cork, Ireland Coláiste na hOllscoile Corcaigh
ERI Environmental Research Institute
epa Environmental Protection Agency

On 24th August 2015, a day-long workshop was held in SEAI, Wilton Place, Dublin 2. It was organised by Clare Watson, Energy Modelling Team - Environmental Research Institute (ERI), and Energy, Climate and Community Response Research Group (ECCRG), University College Cork (UCC), with the support of her supervisors, Prof. Brian Ó'Gallachóir, ERI and School of Engineering, and Dr. Gerard Mullally, Department of Sociology, UCC, as part of her PhD research on the Environmental Protection Agency (EPA) funded project - *Climate Change, Behaviour and Community Response – a Blueprint for Action.*

A number of targeted stakeholders with direct experience of setting up and running community based energy projects were invited to attend the workshop, alongside relevant personnel from the Department of Communications, Energy and Natural Resources (DCENR), Sustainable Energy Agency Ireland (SEAI) and UCC. In all, 15 people, including the research team and facilitator, attended the event (Appendix 1). The numbers were kept deliberately small in order to ensure an open and productive discussion, and to involve all participants in the research exercise. The event was facilitated by Eleanor McClorey.

The main aim of the workshop was to identify lessons and learning from those with hands-on experience of encouraging people at a local level to cut their greenhouse emissions, particularly in relation to energy use. It is hoped that the learning and experience identified will be of use in the development of any future strategies around community engagement on energy.

Prior to the workshop, each representative of the community projects was asked to prepare an A1 poster to use as a focal point for a ten minute presentation (Appendix 2) under the following headings:

- ORIGINS, AIMS & OBJECTIVES
- SET UP
- FUNDING
- KEY ACHIEVEMENTS
- KEY FAILURES
- CHALLENGES
- FUTURE PLANS
- LEARNING

The workshop began with six poster presentations from the stakeholder groups which prompted core themes for further discussion. These themes were then used as a basis for dialogue in three small break-out groups in the afternoon, and the main points were subsequently fed back to the plenary session.

This report is a summary of the day's interactive discussions and the themes, points and questions that emerged. It draws on the range of inputs from the different participants based on their individual experiences. **As far as was possible the wording has been taken directly from the audio transcript and flip chart sheets**.

KEY CONSIDERATIONS

Model Distinction – There is a distinction between **top down** local energy efficiency projects led by agencies or businesses which may or may not seek to involve members of the local community, and **bottom up** projects, which are set up and run by the local community, and supported by other agencies and businesses.

Timing Clash – There is a disconnect between the scale and pace of change required, bearing in mind the implications of runaway climate change, EU targets and potential fines, and the ability and willingness of people and communities to engage and act.

> "The level of change required in a short space of time is phenomenal"

Policy/Vision Gap – There is clearly an absence of a nationally mandated energy management role. There needs to be a national plan and structure involving all stakeholders with clear roles and responsibilities, which filter down to the local level.

Champions Required – There was a clear common thread across the successful projects on the key role played by community champions, energy champions and agency champions.

Energy Citizenship – Energy citizenship should not only be conceived of individually – the concept must also support and promote collective citizen action. Policy makers need broader metrics - not just KWh savings on a year to year basis – which include the capacity of local groups and longer term planning.

Funding Imperative – A number of projects represented are currently in serious financial need. Funding is required for group co-ordination at a local level, as well as for project management. It needs to be consistent, continuous and multi-annual.

TOPIC 1: COMMUNITY ENGAGEMENT

How do you Define Community?

- There are different types of community
- Don't identify the boundary
- Let the community define itself
- There should be a distinct defined community space alongside the corporate.

Capacity of Given Group

- Be aware of the capacity of a given group to deal with a certain scope
- Different actors have different potential
- Need to understand what the community approach can achieve – for instance, a community worker can reach householders, but may not be so good at getting help from businesses.

How do we Engage People?

- Start with what's there
- Build on existing community – the parish, the GAA, rugby club, etc
- Ask the community what they need rather than tell them what to do
- Work with the willing - those who are prepared to participate
- Nurture community development and allow things to emerge
- Use the power of 'word of mouth' and 'keeping up with the Jones's'
- Begin the project with a local energy audit
- Local demonstration projects are essential
- Build on success – 'success breeds success'
- Capitalise on how the community sees itself - their sense of identity and pride of place.

Local Gains

In order to engage people there need to be clear local gains, the language must be relevant and the initial message should be translated into something people can understand, such as:

- Local employment – use local contractors, provide local jobs
- Savings on energy bills
- Warmer homes
- Community ownership of the energy "profits"; the micro generation opportunity
- Community rewards - support and recognition from outside; boost in local pride; ownership throughout; shared interest to derive benefit for community and community "progression"
- Strengthening of local community and social capital.

Energy Citizenship

There are also gains to the energy system – the system needs communities to engage and become pro-active in using less energy, and switching to renewable sources:

- Energy users are becoming part of the energy system
- Everybody uses energy and has a stake in it
- At present most of the visible engagement is articulated by friction and opposition
- Need to make the unconscious conscious
- People have to engage on more than just electricity - heat and transport are a much bigger problem – anaerobic digestion feeding into the gas grid is a potential solution for transport
- Promote "Energy Citizenship" and 'Energy Ambassadors'.

Engagement rather than Opposition
- Try to grow the positive and offset or minimise the opposition to this change project
- Harness the campaigning "energy" from opposition groups
- Is community ownership a strategy for community engagement? Or is opposition to the technology the issue?
- Community ownership of the energy and its profits should be supported and facilitated
- Need for micro-generation opportunities
- CER should introduce an export tariff for micro-producers
- Look to research from other countries, e.g. Scotland, Denmark, Germany.

Importance of Trust
- Trust needs to be built up and maintained
- Trust only comes on delivery
- Trust emerges as the group becomes known and respected locally.

Local Champion

A multi-skilled community leader, a 'local champion', is a key element for success.
- Someone who is known locally, respected, trusted, and who can engage others
- This person needs to be supported, e.g. administrative support etc.
- Recognise that it can be difficult to find that person - people may not want the responsibility, or have the required time
- Maybe the champion doesn't have to be a single person, could be a co-op, or a team of people
- Beware of burn-out, disillusionment and reliance on individuals and volunteers.

Group Structure

An internal structure and steering/management committee is important.
- Consider the co-operative approach
- Set clear objectives and vision
- Hold regular meetings, perhaps rotate the chair
- On-going planning and financing is very important
- Keep everyone informed of what is happening
- Intergenerational focus – make sure the next generation are brought along.

Outside Support

Communities need outside help in terms of funding, advice, guidance, education and on-going support.
- They need to be equipped with IT, and building and technical knowledge and skills
- Need to understand the costs involved and how to manage project financing
- Momentum and innovation should be nurtured
- The involvement of an outside agency both endorsing and supporting the work is very important.

A number of the community projects represented at the workshop are supported by other agencies - Drombane Upperchurch Energy Team is supported by North Tipperary Leader Partnership; Erris BEC by GREAT and Údarás na Gaeltachta; Templederry Community Windfarm by Tipperary Energy Agency; Dundalk 2020 by Louth County Council. SEAI's Better Energy Communities Scheme is a key source of both funding and support.

Templates

Relevant templates should be provided to assist new groups in setting up and developing their projects.
- Link local projects into a national network
- Draw on credible working models in other similar jurisdictions such as Scotland

Political Leadership

Political leadership is essential, both in relation to energy policy and strategy, and also in communicating the message to the public.
- It is not enough to expect people on the ground to change if they don't see change at the top
- They need to hear leaders talking about energy and what needs to be done
- "We're all in this together"
- There will be a citizen engagement strand in the forthcoming White Paper on Energy Policy.

TOPIC 2: SYSTEMS, STRUCTURES, ROLES AND RESPONSIBILITIES

National Plan

The processes around community engagement on the ground appear to be secondary to the bigger picture. So what national programme and resources are driving the agenda? Who is 'championing the champions'?

- There needs to be a national plan and structure involving all stakeholders with clear roles and responsibilities
- The involvement of all relevant agencies – local, regional, national and EU, is key to the roll out of community engagement projects
- There is clearly an absence of a nationally mandated energy management role
- The policy needs to be thought out and developed down to delivery level, and programmes put in place to support it
- We can learn from other countries, e.g. Denmark where a national programme funds the risk involved in developing geo-thermal energy for local district heating
- There is an interdependency between the local community and local and regional agencies, and central and local government
- There needs to be a link with local development plans
- At a Green Paper response conference in Tipperary, the participants agreed that the following is needed: a carbon tax, subsidies for renewables and a detailed programme for everyone to do the right thing, using the 'carrot, stick and tambourine' approach.

Roles and Responsibilities

There is no systematic structure outlining roles and functions in the various agencies and local authorities in relation to energy management.

- Who does what, and who should do what?
- What kind of a system would support community engagement?
- We tend to jump forward to answer the problem before fully understanding where the problem comes from – it is hugely important to go back to basics, and map the existing system - who does what, what works and what doesn't, who is engaging with whom - and to recognise that there is not a uniform system for each county. We need to be credible for when the funding comes in
- There is an overreliance on people and an under reliance on structure – where is it working well and where are the gaps?
- There is a blockage point, a disconnect between the different sectors about what is happening in the community energy space – the role of local and regional authority is minimised, not as yet an enabler
- Should there be a template for the involvement of local agencies and authorities? Should it be mandatory given the scale of the national change required? Is a single role in an agency enough?
- Bottom up structures need top down supports
- Some local authorities are engaged more than others, depending on who the champion is; problems emerge when that person changes job or role within the authority
- Local authorities have two roles in relation to energy – there are clear public sector targets for the energy they use themselves, but they struggle with the role of the energy they influence as it doesn't fit under existing sections such as Economic Development, Environment and Water or Planning
- No one person is tasked with energy, unlike other issues such as waste
- While the Dept of Energy is engaged on the issue, other departments are not so motivated.

Funding

There is an urgent need for consistency, continuity, and multi-annual funding.

- A number of projects represented at the workshop are struggling financially and require immediate financial help – you can't keep squeezing and squeezing
- There needs to be a long term programme that is sustainable and aims to avoid stress and burn-out
- Groups need to understand where the different sources of funding are, the mechanisms involved and how to use one funding source to attract others – leverage – better bang for your buck
- There can be an over-reliance on SEAI funding
- Delivery personnel and project co-ordinators need to be funded
- Funding should be ring fenced like the Environment Fund – the return on carbon credits could be invested into community projects.

TOPIC 3: THE BUSINESS CASE

We need to identify quantifiable local and community gains, as well as speaking to national energy policy and building a sustainable national community of energy leaders:

- The language should be appropriate to each stakeholder
- Present the business case as a political case
- Position with credible business, strategic, cost effectiveness arguments – the value and the kilowatt hour
- National energy policy should emphasise reduced imports, less export of money, local jobs/votes, potential climate and energy policy fines, and the responsibility of leadership
- Focus on payback and the money staying and circulating in the local economy
- Partner with local businesses
- Work with local and national politicians – many are very interested, others not so, but there needs to be involvement at a local level.

Stress the Benefits

- Local Value - energy saving; saving money; local jobs; local energy generation; stronger community, and social capital – social capital is much harder to quantify, but without it the other changes won't happen; tackle fuel poverty; multiple benefits of sustainable energy
- National Value – less dependency on imports; more energy self-sufficiency; better value per kWh; less CO2 emissions.

Behavioural Change

- Could have massive impact
- People need to become more conscious of how they use energy, how much they spend annually and how to reduce this
- Many people don't understand their bills
- Education is important.

FUTURE STEPS/FOLLOW-UP

- Define the concept of "Energy Citizen", a term which first emerged in 2007
- Develop both technical and community work skills at a local level
- Support the champions that are already in place – address the short-term, immediate funding cliffs facing a number of the groups attending the workshop
- Develop a sustained, long-term plan, and provide the necessary funding. Move from a project to a continuum, to a process that is continually funded
- Research the definition of the social capital metric – how we measure progress beyond the money, the kWh jobs, the CO2, what is gained within these communities; the term can be used loosely, important to value it more
- Focus on education and awareness raising
- Put in place targets for local authority areas
- Develop the energy community network.

APPENDIX 1

AGENDA

10.30: Arrival – tea/coffee

11.00: Welcome and Introductions

11.30: Project presentations on achievements, challenges and learning. Identification of key themes

1.30: Lunch

2.00: Thematic small discussion groups and large group feedback and analysis

4.15–4.30: Closing reflections.

PARTICIPANT LIST

Darrell Crowe
Terenure Better Energy Community (BEC)

Michael Curran
Director of Services Energy and European Development Louth Co Co,
and Chairman of Dundalk 2020 and CONCERTO HOLISTIC Project

Gearóid Fitzgibbon
Director Energy Communities Tipperary Cooperative Ltd. and local community worker

Madeline Hallinan
Programme Manager Better Energy Communities, SEAI

Con Harrington
Member of Drombane Upperchurch Energy Team

Klaus Harvey
Co-ordinator, Transition Town Kinsale

Paul Kenny
Chief Executive Officer, Tipperary Energy Agency

Eleanor McClorey
Workshop Facilitator

Declan Meally
Head of Department Emerging Sectors at SEAI; former Head of Dundalk 2020

Rebecca Minch
Principal Officer, Energy Efficiency & Affordability Division, DCENR

Dr Ger Mullally
Lecturer in Dept. of Sociology, UCC

Dr Orla Nic Suibhne
Project Coordinator for GREAT & 2015 Erris Better Energy Community (BEC)

Prof. Brian Ó Gallachóir
Director, Energy Policy and Modelling Research, Director, MEngSc in Sustainable Energy, UCC

John Randles
Head of Department - Delivery, SEAI

Clare Watson
PhD researcher, Dept of Sociology, ERI and School of Engineering, UCC

APPENDIX 2

PROJECT POSTERS

Each community participant was asked to prepare a poster using the headings below. The main aim of the poster was to focus the mind on key questions, and to give the focal points for a 10 minute presentation.

POSTER HEADINGS:

1. ORIGINS
When did the project start; who came up with the initial idea and why

2. AIMS AND OBJECTIVES
What are you trying to achieve?

3. SET UP
Outline the early stages, and who was involved in the process.

4. FUNDING
When did you require funding and for what; where did you look for it; where did you receive it?

5. KEY ACHIEVEMENTS
What has worked and why?

6. KEY FAILURES
What has not worked and why?

7. CHALLENGES
What have been the barriers and stumbling blocks along the way?

8. FUTURE PLANS
Where do you see the project in 3 years time - include both concrete plans and aspirations?

9. LEARNING
What have you learned that might be useful for future projects?

PROJECTS

Drombane Upperchuch Energy Team (DUET) & Energy Communities Tipperary Cooperative (ECTC)
Dundalk 2020/Dundalk Sustainable Energy Zone (SEZ)
GREAT[1] Community Energy in Erris, Co. Mayo
Templederry Community Windfarm
Terenure Energy Group
Transition Town Kinsale

[1]EU project funded under the INTERREG IVB NWE Programme

TEXT OF COMMUNITY PROJECT POSTERS

DROMBANE UPPERCHUCH ENERGY TEAM (DUET) & ENERGY COMMUNITIES TIPPERARY COOPERATIVE (ECTC)

Gearóid Fitzgibbon & Con Harrington

1. ORIGINS

Group of community volunteers approached NTLP/ LEADER in 2010 in order to create economic benefit to people in the community.

Key concern: stopping emigration – loss of 4 or 5 young people from hurling team within a year.

2. AIMS AND OBJECTIVES

Stimulate economic activity - Self-organising the first step.

Initially, energy only one of a number of avenues to explore.

DUET survey: 60% (200 out of 349) cited financial savings as their most important reason for investing in energy efficiency.

Core values of belief and trust in people – principles of community cooperation & self organising. Agencies should be facilitating and supporting communities to take action on their own.

3. SET UP

A meeting with Tipperary Energy Agency (TEA) to discuss options on "Energy".

Advised that focusing on conservation rather than generation would be a better starting place for community action.

Carried out energy survey of homes – an animation/ motivational tool, which helped focus thinking on what could be achieved; Limerick Institute of Technology (LIT) and TEA gave technical support in compiling survey – Student placement; huge volunteer involvement; 400 survey sheets- 353 responses- 87%.

Oct 2011 – survey launched - Standout figure - A 25% reduction in energy usage could save the parish €250,000.

March 2012 – Community Energy Officer appointed under Job bridge Scheme – 9 month internship position hosted by NTLP. Tasks: cluster homes & organise group tender to insulate homes.

Local interest stimulated through a range of community events - Information evening at Drombane hall - 35 interested homes emerge.

4. FUNDING

August 2012 - SEAI launched a Grant under the Better Energy Communities Pilot scheme -2012.

Drombane Upperchurch Energy Team were successful.

2012 Scheme – 22 houses done in 4 week period – 12 received grant of 40% and 10 received 100%.

Total cost €115,000 - SEAI grant €88,000. Savings €15,860/yr. 6yr payback.

2013 Scheme – 28 houses – 12 @35% grant – 16@100% and 2 community halls.

Total cost €285,000 – SEAI grant €213,000 savings €39,480/yr. Energy units sold to Electric Ireland €16,000.

SUMMARY - 2012-2013 - A total of 50 houses upgraded and 2 community buildings. Total cost of project €400,000 Grants from SEAI €300,000

2014 - NTLP & DUET recruited other communities to replicate Drombane approach.

Kilcommon / Rearcross - Lorrha / Rathcabbin – rural parishes recruited because of stats on disadvantage & Birdhill.

Initial approach - 4 individual community applications - Meeting of Energy Teams to share information.

Creation of Energy Communities Tipperary at instigation of SEAI.

Securing of funding - Total cost of project €1,078,000 - Grant from SEAI €840,000.

Approx 1.5 GWh/ year saved - A total of 110 houses and 2 community buildings.

5. KEY ACHIEVEMENTS

In partnership with SEAI, we have demonstrated the potential of our approach in recruiting hard to reach rural households. Most of these households would never be insulated but for the voluntary community involvement.

COMMUNITY ENGAGEMENT (2012+2013): 2720 hrs = 1 community worker 1.5 years @ 15e/hr = €41,850.

2014: volunteers 700hrs, Project manager 500hrs, NTLP 500hrs, TEA 60 hrs.

LOCAL MARKETING - Local committee contacts – house calling – mass notices – word of mouth - brochures – leaflets - websites – facebook – Drombane co op milk suppliers letters / meetings.

Links with local agencies and third level institution - Growing in confidence in dealing with them.

EMPLOYMENT OUTCOMES: 65 employed for duration of project with local contractors.

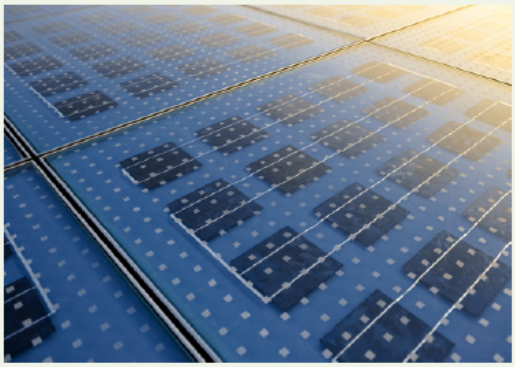
NATIONAL PROFILE - Eco Eye TV appearance, Grundvig European group (Turkey Belgium Italy Rumania Netherlands).

6. KEY FAILURES

Failure to develop comprehensive community energy plan – conservation & generation – as the basis of a long term approach.

Now - risk of volunteers questioning whether the time that they give would be better spent in other ways in their own communities.

Over-reliant on SEAI – anticipation that SEAI would guide us on long term approach & local energy planning.



7. CHALLENGES

Broader Challenge for the country/community – how to mobilise & motivate people, how to encourage & support energy citizens.

Specific Challenges of scheme to date - Along with all the benefits, now seeing the flaws of it & where improvements are needed.

Inordinate amount of voluntary input - need for recognition of ebbs & flows of volunteer energies. Changeability of voluntary groups.

Difficulty in accessing bridging finance for larger projects. Clann Credo the only game in town. High rates of interest.

Timelines – not enough time for communities to market scheme and reach out to local householders.

Work only being carried out on 3 months of year – the 3 normally busiest months for these contractors, which include builders holidays. Contractors letting go good tradesmen – work starts in June/July until November.

Changes in the configuration of the project – from issuing of the letter of offer and discussion on terms and conditions - reduce the achievability of the project (with builders holidays in the middle of the summer and manufacturers needing sufficient notice for putting products on order).

Dealing with lack of coherent national policy on community energy in Ireland... No clear definition or measure of community benefit.

e.g. voluntary groups are in the same scheme as large corporates with much greater organisational capacity.

The focus seems to be on achieving the energy efficiency units only, and not also developing energy actors/citizens to solve their community's longer term energy needs.

Settling for short-term gain – utilising community actors to achieve energy efficiency targets, no long term benefit.

ECTC and its member Energy Teams have invested huge time to develop a model of rural energy efficiency –backed by local non-profit agencies who have offered capacity building and support – but in absence of long term plan for local community energy initiatives/ energy citizenship - volunteers questioning their own participation – i.e. is their time better spent in other ways in their own communities. (cf. original motivation – how to benefit the local community, not how to address climate change).

Mixed messages to communities – earlier signals over 2 years that individual grants would be abolished. 2015 saw significant increase in the individual grants, in competition with Community scheme. This, among other factors, affects drop off in Can Pays on ECTC – and ratio of FA to CP.

Unrealistic expectation of capacity to diversify funding elements for energy efficiency upgrades – e.g. investment by businesses.

Core community costs (€9,756.00) and costs in kind (€9,975.00) – per community - not considered eligible for grant assistance.

Unique complex project – with detailed financial, administrative and technical requirements. Without substantial facilitation /secretarial / leadership involvement from NTLP and advice from TEA – not feasible to continue this project on voluntary basis.

8. FUTURE PLANS

No progression or long term plans as scheme currently stands.

REQUIRED ASPECTS OF NEW COMMUNITY ENERGY SCHEME.

Clearer definition of community and recognition of longer term Social benefits in supporting the area based community initiatives.

Formation of a "Community Energy" Support Unit within SEAI – with a practical commitment to community development and collective citizen energy action.

Provision of community development/capacity building support – either to the Local Development Companies or Energy Agencies - for energy citizens to analyse and identify their own requirements.

SPECIFIC SUPPORTS REQUIRED TO DEVELOP A COMMUNITY ENERGY SECTOR.

Practical templates for community energy plans
Training/up-skilling for community activists on energy initiatives.

Funding for feasibility/community energy plans.

Capital for community energy initiatives – targeted at level of communities.

Longer Term - 3 year rolling scheme with set terms & conditions for the scheme - With 2 – 3 phases & built in review by SEAI.

Need for political direction on Local Economic and Community Plans & Leader plans currently being developed in all county areas – get Minister of Environment to direct LDCs to prioritise energy conservation & generation in these areas.

Subsidiarity of competencies: National - DCENR/SEAI; Regional – Energy Agencies/LEADER companies; Local - community groups.

9. LEARNING

Citizen/community energy lost within current catch-all scheme.

The Drombane Upperchurch Energy Team (DUET) energy efficiency scheme shows how communities, in partnership with local and national agencies, can be local drivers in cutting the fossil fuel bill and creating employment. Onus now on state actors to be supportive to voluntary actions and to encourage sustainability of groups who show progress.

Need for clearer definition of community – to recognise and supports voluntary effort & wider social benefits of this.

Defining Community Energy

FEATURES
1. Addressing technologies and behaviour, supply and demand
2. Empowering people to collectively change energy supply and use
3. Enabling multiple benefits appropriate to local contexts (e.g. community development, averting fuel poverty)
   Hielscher et al. (2013)

CATEGORIES
Individual / collective
Locally concentrated / geographically dispersed
Energy produced for feed-in / local consumption
Exclusive / inclusive control over project
Full ownership / co-ownership
Legal ownership / sense of ownership
(Schreuer/Weismeier-Sammer 2010)

STATE & SEAI should use the leverage that they have: the potential to direct and influence community activity and plans - to create energy actors/active energy citizens – who will be engaged in the long term picture. Energy citizens have only limited impact unless they work as a group – cf. Power of One campaign.

Need for clarity on what DCENR & SEAI want to achieve.
Just want to reduce the units? Or do they want to transform the economy?

Motivation of DUET & ECTC is transforming the local economy - the experience of the continent, esp Germany, shows that the local economy is a key driver/ motivator for people.

If year on year KWh saved is the only measure of success, long term energy citizenship will not be supported.

With support, potential of energy to be a main driver of local economy.

GREAT COMMUNITY ENERGY IN ERRIS, CO. MAYO

Orla Nic Suibhne

1. ORIGINS

SEAI, GREAT Project, Údarás na Gaeltachta, Mayo County Council.

2. AIMS AND OBJECTIVES

Research, development and implementation of a Sustainable Energy Community and associated activities including: energy efficiency, energy education, renewable energy, energy storage, smart grid, smart buildings and smart transport.

3. SET-UP

Dr Orla Nic Suibhne, Margaret Tallott, Erris Sustainable Energy CLG.

4. FUNDING

2 full-time staff from GREAT - BEC 2014 - BEC 2015 – Community Gain Investment Fund (Shell) - Community.

5. KEY ACHIEVEMENTS

GREAT - BEC 2014 - BEC 2015 - Eco-eye - Claremorris event - Community event - Local SMEs.

6. KEY FAILURES

Lack of Continuity in the Erris Community – Post GREAT?

7. CHALLENGES

Personnel - Finance - Community Engagement.

8. FUTURE PLANS

Establish an SEC: follow SEAI five step model; Postdoc Study "The Energy Transition Process in a Rural Area: Becoming a Sustainable Energy Community"; Continue with the BEC upgrades; Work extensively with local SMEs to develop eco-innovations; Net zero buildings; The Erris community will be engaged and knowledgeable about the low carbon transition and 2020 targets.

9. LEARNINGS

- Energy champion is essential
- Community trust is prerequisite to any success
- Access to finance is challenging
- Showcase and demonstration projects are critical.

Orla added the following during the workshop:

- In 2014, 2 electric vans, one for Meals on Wheels and the other for the laundry service were purchased, 14 buildings were upgraded, and 2 7KW solar PVs were installed.
- In 2015, 6 schools were upgraded.
- A turbine to power the Rossport water scheme was proposed but failed due to opposition.
- The GREAT Project ends at the end of September 2015, which means that the future of the Erris project is very uncertain.

TERENURE ENERGY GROUP

Darrell Crowe

1. ORIGINS

Transatlantic climate gathering conference on Communicating Climate change in the Burren in 2013, Moved onto the Climate Gathering in Dublin (Plan C) in 2014, linked to *I Love Terenure Community* project by establishing a Terenure Energy Project in January 2014. Common thread has been Sandy Dunlop.

2. AIMS/OBJECTIVES

- Move from Reduce to Produce
- Create the Terenure Energy Co-operative
- Have a BER (Building Energy Rating) for every home and business in Terenure
- Measure/benchmark how much money is spent in Terenure on Energy bills
- Retrofit (upgrade) every Community and Public Building
- Retrofit 5% of the homes in Terenure, every year (5 years = 25% of homes completed)
- Retrofit 20% of the fuel poor homes in Terenure, every year (5 years = 100% of homes completed)
- Install solar panels on every Community and Public Building where roofs are correctly orientated.
- Install solar panels on 10% of the residential roofs
- Promote sustainable travel options, highlight cycle safe routes around Terenure, and include cycle lanes on the minor roads
- Introduce 'walk/bike to school' plans for every school in Terenure
- Involve schools in energy reductions and energy usage programs via Green Schools.

3. SET UP

Came from idea that policy makers, climate experts and Politicans were not connecting with people to get real support and action on climate change. Idea was to move conversations on policy into action on the ground and learn what were the communication and motivational triggers.

Sandy Dunlop – Branding Consultant, Board member of Green Foundation Ireland, Facilitator and International branding/Marketing specialists, Martin Hawkes – member of Peoples Energy Charter, And member of Climate Gathering, Ryan Meade – Previous Adviser to Minister John Gormley Government.

4. FUNDING

After first year and half attempted to get an SEAI BEC application together in 2014 which failed. Then partnered with Energywise and Dalkia to make successful application in 2015.

Voluntary project to date.

5. KEY ACHIEVEMENTS

Successful application to SEAI
Awareness and building momentum within community of Terenure Energy Project
Engagement with Green Schools.

6. KEY FAILURES

Losing participants out of BEC projects due to time delays.

7. CHALLENGES

Getting real momentum going in community on this.

Lack of Policy support in place to facilitate larger objectives (Solar PV, Community Energy).

Identifying and promote real local examplar examples of energy retrofits.

8. FUTURE PLANS – 3 years time

- RetroFit 5% of households every year
- To have 40% of Fuel poor homes retrofitted.
- To have every Community and Public building upgraded in Terenure
- 10% of homes/20% of businesses with Solar PV systems installed
- To have improved the average BER rating of homes in Terenure region
- We will have established an Energy Co-operative:
  - To invest in renewable Energy Projects
  - To group buy energy needs for businesses and households
  - To see Terenure as an exemplar sustainable urban community.

9. LEARNINGS

a. Momentum and delivery are key to credibility
b. Moves very fast from voluntary to formal
c. Community can achieve more than the individual, but individuals look to others for endorsement and guidance
d. Individuals can and will take personal responsibility and action if given correct guidance.

During the workshop, Darrell added that 27 community projects were identified for the BEC proposal.

DUNDALK 2020/DUNDALK SUSTAINABLE ENERGY ZONE (SEZ)

Declan Meally

1. ORIGINS - AIMS AND OBJECTIVES

VISION: 'To stimulate a national move towards a sustainable energy practice through demonstration in an exemplar community'.

The SEZ is 'setting a precedent that will cement Dundalk's status as an innovative gateway and is an exemplar of sustainable energy best practice. It is stimulating a change in energy investment that can be used as a model across communities in Ireland.'

Targets to be achieved by 2010:
- 20% electricity from renewable sources performance (sic) of selected buildings
- 20% heat from renewable sources
- 40% improvement in the energy performance of selected buildings.

'The above targets will save 10,000 tonnes of CO2 every year from 2010.

2. SET UP

An integrated approach, bringing together what were individual projects, and plans. It involves local authorities, agencies and professional organisations, as well as businesses and local community groups – including, housing industry, education, healthcare, retail and leisure facilities.

The following organisations involved: Dundalk Town Council, DKIT, HSE, Centre for Renewable energy at DKIT, Louth County Council, Newry and Morned District Council, IDA, Enterprise Ireland, Louth County Hospital, Dundalk Chamber of Commerce, Dept of Education, Teagasc, ESB Networks and customer supply, SEI and various resident associations. Participating companies include: Adston, Horseware, Heinz, Ice Dome, ABB, Moffett Engineering, Diageo, Furniture Link, Xerox, Glen Dimplex, Kingspan and Oriel Windfarm.

Key to the approach is the use of clear, measurable targets and tracking; the creation of networks across the community and between businesses; the sharing of resources and knowledge and above all else a clear benefit to the people of Dundalk.

Projects concentrate in the 4 square kilometre area of the Sustainable Energy Zone – where 2,500 people live; 3,500 people work and 5,850 people are in full-time education.

STRUCTURE:
Steering Group chaired by Michael Curran, Director of Services, Community and Enterprise for Louth Co Co.

7 Action Groups: Energy Supply; Built Environment; Demand Side Management; Socio-economic; Communication; Industry; Research and Technological Development and Innovation.

A Resident's Action Group was to be set up in 2009.

Dundalk 2020 is co-ordinated by SEI (now SEAI) and is part of a pan European programme called CONCERTO. The project allows for replication in any community in Ireland – to be rolled out through a Sustainable Energy Communities Programme – with a target of creating 5/6 Sustainable Energy Communities over next five years.

3. FUNDING

Funding was received from the Framework 6 Programme, Concerto 11 (HOLISTIC proposal); €3.5 million specifically allocated to fund the development of the Dundalk Sustainable Energy Zone; 2007-2012.

Other HOLISTIC partners – Modlin, Austrai; Neuchatel, Switzerland; Newry, Northern Ireland; Aachen Germany; Italian Ministry for the Environment, Land and Sea.

4. KEY ACHIEVEMENTS

Energy and carbon savings – 5000T CO2 per annum.

Funding Leverage.

SEC Management Process and Guidelines.

Dundalk Partnerships – Close in learnings of energy in communities.

The SEC Network – Starting in Dundalk and now growing to national level.

SEAI Communities Programme- the New national movement.

Cross Border and International collaboration.

5. KEY FAILURES & CHALLENGES

Changes in momentum and personnel.

Economic downturn.

Technology changes.

Lack of capacity and knowledge outside of SEAI.

6. FUTURE PLANS & LEARNINGS

The Sustainable Energy Community Programme Development and rollout.

2012 – Pilot Scheme
- dispersed pockets of activity.

2013 – Consolidation
- consolidation of established communities
- increased pockets of activity in urban communities.

2014 – Building Capacity
- impact as catalyst evident
- expansion geographically by sector and project type (e.g. schools).

Snapshot of Networks and Clusters emerging:

- Musgrave Retailers – nationwide programme of 37 Musgrave retail stores, 34 GAA clubs, and 36 senior citizen apartments. Energy Savings: 9,565, 626 kWh.
- Aramark – energy initiatives on a number of regional farms in the midlands and in a handful of community buildings. Energy savings: 2,841,200 kWh.
- Leitrim County Council – Project in Mohill targeting residential homes, community buildings and public lighting. Project Cost; Ð349,00 (sic). Project pay-back: 4.3 years.
- Marino Community (Dublin North City) – a partnership of local school and third level institutions, including classroom energy workshops. Energy Savings: 1,436, 421 kWh.

Building Capacity for the Future – what's needed for development of SEC's in the future?

- Network of Champions – connecting the existing SEC champions into a facilitated National Network.

- SEAI Strategic Partnership – pool resources with activation programmes, brokered by SEAI.
- Tailoring Enabling Supports – menu of tailored supports to enable the Network to grow strategically.
- Awareness Campaign – promote benefits that have been realised.

7 key skills required: Energy Champion – Integrated Planning – Strategic Financing – Energy Efficiency – Renewable Energy - Smart Grid Generation – Transport.

TEMPLEDERRY COMMUNITY WINDFARM

Paul Kenny

1. ORIGINS

The wind farm project grew out of the local Community Development Plan, which was focused on the future economic development of the parish. The Local Development Plan was drawn up by Professor Tom Collins following a local consultation process with the local development group. One major aspect was the possibility of establishing a local sustainable energy project. The community recognised the importance of renewable energy and looked in to the feasibility, via the Local Energy Agency, of other energy sources, such as biomass and anaerobic digestion, but decided to proceed with wind first after a technical feasibility study. A subgroup of the parish council set about a development, inviting locals to get involved with an initial modest investment for a wind mast and planning permission. Leader funding was secured to co fund this initial investment and the local energy agency completed the planning permission and the wind monitoring.

2. AIMS AND OBJECTIVES

Economic development for the parish, wealth increase of citizens, decrease environmental impact.

3. SET UP

Initially public meetings were held to gain local investment and interest. 28 individuals were interested. They each invested €500.

The Local Energy Agency (TEA) completed feasibility studies (initially on 20 hills, refined to three hills).

The local authority planner supported the site selection by giving a day to tour the region and select the most appropriate locations from a visual impact.

The local leader organisation (NTLP) supported the initial wind monitoring and feasibility study.

4. FUNDING

Initially:
LEADER + Local Investment for studies.

Years 2-10: local investment from existing shareholders, A loan of 90k from Bank of Ireland secured with personal guarantees from 5-7 of the local community group, pro-bono services from the TEA.

Years 11/12 (construction):
- Existing equity from shareholders: 3.5%
- Leader funded: 3.5%
- Business expansion scheme managed by Davy (18%)
- Senior Debt: 75%

A bridging loan from Enercon to facilitate the grid completion, civil works and turbine pre-payments was in place before senior debt was arranged/finalised, i.e. construction start to financial close (3 months after commissioning).

5. KEY ACHIEVEMENTS

- Construction of Ireland's only fully community owned windfarm.
- Established a method of completing future similar sized projects.

Why:
- Directors driven to achieve and never gave up.
- Leadership, commitment and sacrifice.
- Local Development company funding, advice and flexibility. Competence, commitment and flexibility.
- Local Energy Agency using significant other funds to support the development, agency staff willing to work outside of normal working hours (additional). EU funding to cover some shortfalls.
- Local authority planners working collaboratively to achieve a solution, rather than current process of almost adversarial system.
- REFIT making the finance work.

6. KEY FAILURES

- Development time to get project up and running.
- Phase 2 turned down at ABP stage.

7. CHALLENGES

There were many challenges and stumbling blocks, main ones:
- Grid moratorium delaying project 4 years.
- Re-submittal requirements of planning leading to appeal to ABP.
- ABP taking 2.5 years to approve the project without any justifyable reason (no further info, no Ecological or other additional studies, 2 years to do a site visit).
- Financial crisis delaying project 2 years, bridging finance was difficult to secure at critical junctions. ESB requires significant finance before grid consent, lenders will not lend without grid consent.
- State agencies being late with comments at inappropriate times delaying project unnecessarily. Lack of accountability, lack of resources.

8. FUTURE PLANS

- Community Energy Supplier supporting this and other community energy groups to bypass major utilities.
- Community Solar Energy
- Further wind development if public attitude changes.
- Potential wood energy business plan.
- Low energy Community / Social housing plan

9. LEARNING

There have been several academic papers and case studies that would be more useful, but a few key points:
- Leadership from within the community is the most important factor.
- Agencies (leader/ LEA/ LA) are required to be in a position (i.e. have funding!!) to support the development.
- Communities will need to access mainstream finance in a commercial manner, and should not be afraid of it. If a project does not stack up (structure/ economics/ risk) for a lender, it does not stack up for the community.
- A small amount of bridging finance / risk finance would make a significant difference (see local energy Scotland model!).
- The "system" CER decisions, ESBN payment structure, Planning process etc are setup in such a manner as to make this process challenging for communities.
- Lack of consistent, clear and long term vision for Irish state energy needs, and the engagement of its citizens has led to current poor environment for wind energy development.
- Communities need to be commercial developers, with all the risk/reward / business practices that are required to be a commercial developer.

Paul added the following during the workshop:

Phase Two of the Templederry Community Windfarm was turned down at the planning stage. There are 10 people living in the vicinity of the wind farm and one person didn't want it.

The project took 11 years to develop from beginning to end – it couldn't happen now as there isn't available grid connection – TEA wouldn't be able to support it now as we did then. If the Templederry project were started today it would not succeed.

TRANSITION TOWN KINSALE

Klaus Harvey

1. ORIGINS

- Kinsale College of Further Education - Permaculture/ Practical Sustainability course.
- 2004-05 - Course co-ordinator Rob Hopkins and students wrote college project, 'Kinsale Energy Descent Action Plan' as a community response to climate change and peak oil.
- 2005 - Louise Rooney, graduate of the Permaculture course, developed non-profit 'Transition Design'.
- 2006 - Kinsale Town Council adopted the Energy Descent Action Plan, awarded start-up grant, committee set-up.

2. AIMS AND OBJECTIVES

To make the transition from a dependency on fossil fuels to a low carbon future. Vision is a resilient, sustainable community and thriving local economy.

3. FUNDING

- Kinsale Town Council (promotional fliers, Community Garden, Education for Sustainability).
- West Cork Development Partnership/Leader (feasibility study for community anaerobic digester).
- Local Agenda 21 (Community Garden, Education for Sustainability)
- Leargas (EU cross-border two-year research project 'Teachings for Transformative Change')

4. KEY ACHIEVEMENTS

- Community Garden ran successfully for 3 years
- Education for Sustainabilty - 6 local schools with food gardens established

- 50 Mile Meal Award @ Kinsale Gourmet Food Festival
- 50 Mile Meal in restaurants and cafes that sell local produce
- Kinsale Community Supported Agriculture – buying local produce directly from and supporting local farmers
- Kinsale Community Orchard
- Regular awareness raising events, talks, films, workshops on peak oil, climate change, sustainability, food production, energy saving etc.
- Regular wild food/nature walks
- Cork Environmental Forum Community Award 2013
- Worked with many local groups e.g. Kinsale Tidy Towns, Kinsale Arts Festival
- Transition has become a global movement.

5. KEY FAILURES

- Anaerobic Digester
- Community composting scheme
- Kinsale energy audit
- To engage wider community.

6. CHALLENGES

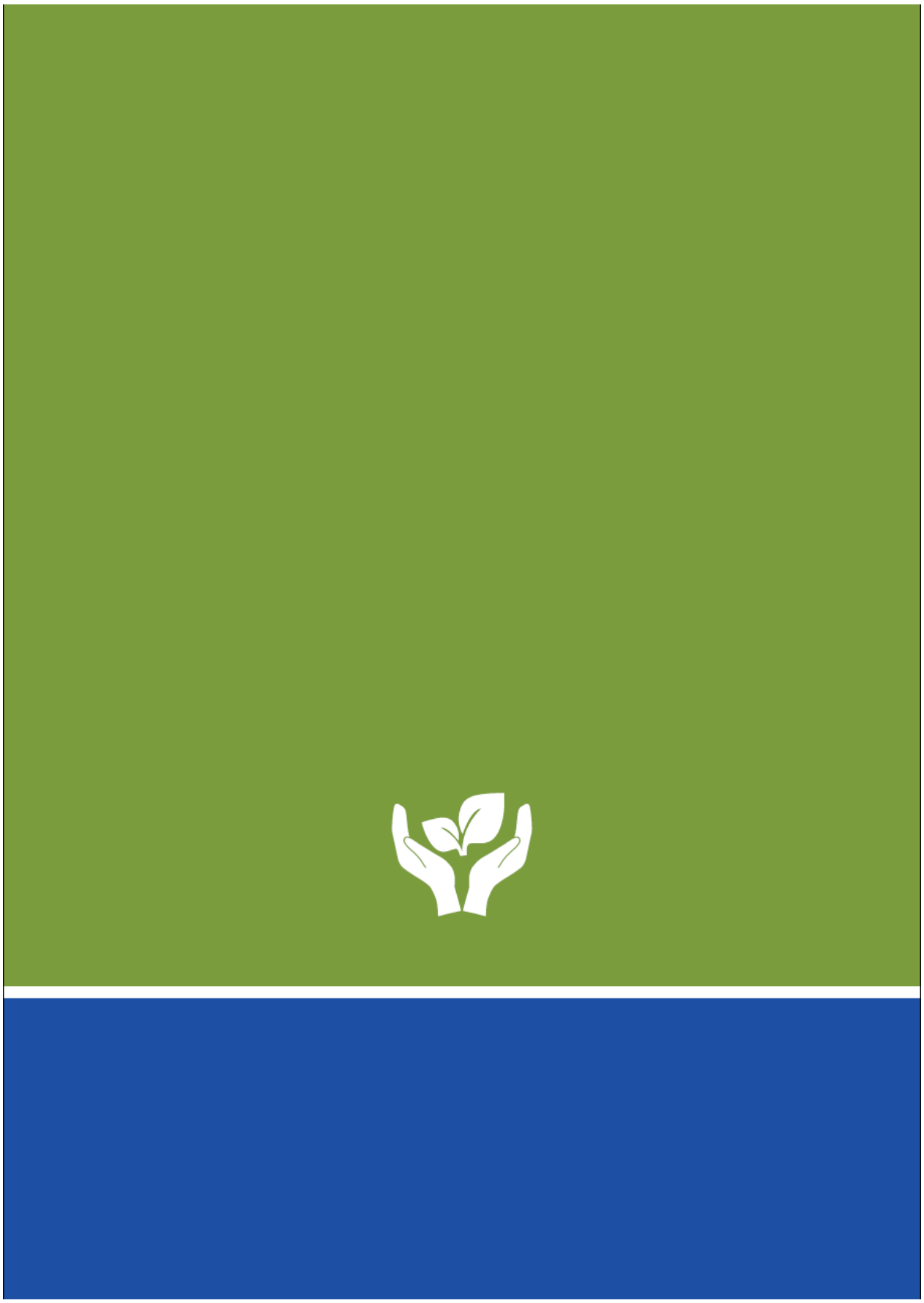
- Not enough people willing to drive process forward
- Engaging the wider community
- Energy projects very large and expensive
- Little or no top-down support
- Misperception that TTK is 'alternative' only for a certain type of person ('greens' 'hippies')
- Many key TTK members are not locals and perceived as 'blow-ins' which can have negative connotations.

7. FUTURE PLANS

- TTK 10 - celebrating 10 years of Transition Town Kinsale
- Reboot – new logo, new fliers being developed
- Further develop Community Orchard
- Develop 'Edible Walk' through town with edible plants in pots and beds with information signs
- Tús administrator – 6 months paid position.

8. LEARNING

- Spend more time and effort engaging wider community and local councillors
- Get more top down support
- Needs core person to coordinate/administrate – should be paid position
- Get EU funding for interns, who are very enthusiastic and willing to work.



APPENDIX 3 FORMAT OF COMMUNITY ENERGY WORKSHOPS (2017/18)

OUTLINE

Workshop Aims: To contribute to this research, and to inform policy in the community energy and community engagement on climate action arena.

Data Gathering: Participants were asked to write their individual responses to the questions and topics on clip boards, and then to discuss them as a group. The group discussions were recorded in order to provide rich data for synthesis, analysis and write-up (all content was used anonymously).

Output: The results of the workshops have greatly contributed to the findings of this thesis and also to the EPA-funded project report.

Length of workshop: 2 hours.

Facilitators: Clare Watson, PhD student and Evan Boyle, Research Assistant.

Consent Form: Each participant was asked to read and sign a consent form before the workshop began.

AGENDA

1. Introduction and demographic profile (10 mins)

2. Mental warm-up exercises (10 mins)

3. Topics – Each topic was discussed separately. In order to capture individual thoughts and to focus participants' minds before they spoke, in advance of each group discussion, each participant was given a sheet on which to jot down any personal thoughts that came to them on that topic. These were collected by the researchers.

Topic A (15 mins)
- What/who is the 'community'?
- What is 'community energy'?

Topic B (20 mins)
- The benefits of community energy
  a) For the wider community/society – social, economic and environmental
  b) For group participants

Topic C (20 mins)
- Achievements of your community energy group
- Supports received so far – financial, practical, training, etc

Topic D (20 mins)

- Challenges you have faced both personally and as a group
- Disappointments experienced along the way
- Barriers to community energy

Topic E (20 mins)

- Additional supports required by the group
- Future challenges expected
- Plans for the future

4. Closing remarks (5 mins)

APPENDIX 4 IMPLICATIONS FOR POLICY & RECOMMENDATIONS ARISING FROM THIS RESEARCH

IMPLICATIONS FOR POLICY

1. Infrastructural supports are emerging, but they require greater coherence and should respond more effectively to community needs. Recent new infrastructural supports include increased funding from SEAI for community energy and the establishment of local authority regional climate offices. While welcome, supports should engage more with communities and be more responsive to community needs. In addition, greater coherence is required in exploring new possibilities and in learning how to up-scale them. This requires governance which allows for exploration, experimentation and cross-fertilisation.

2. Energy citizenship is an accepted ambition but energy communities are struggling. Community energy practitioners were palpably excited by the content of the 2015 Energy White Paper, and expectations for follow-through were very high. Since then, policy progress, particularly around the elimination of barriers to creating community energy and the provision of core funding, has been very slow. In addition, no two communities are the same, and they have differing levels of capacity, cohesion, local leadership and access to funding and resources. Likewise, groups that join the SEC Network have varying levels of experience of the work involved. Therefore, distinct approaches are required which respond to capacity levels.

3. Intermediaries have significant untapped potential. In addition to top-down supports from agencies and bottom up community activities, there is significant untapped potential within intermediary groups not directly associated with the energy transition. Our research shows that there are a number of agencies and organisations who are already assisting community energy groups, some to a greater extent than others. But it is down to luck as to whether one of these is in your area or not. In addition, the potential role of Tidy Towns is beginning to be realized through the focus on resource use and sustainability but these groups are feeling the pressure and require more support.

4. SEAI is doing excellent work fostering community action and should be supported to further embrace community development methods, skills and experience. Technical and financial supports are necessary but not sufficient for community energy to thrive. Community development and community engagement are also essential. Successful energy communities in our study have been helped by community development expertise. We did not find the ‘ideal’ community which is able to pull itself up by its bootstraps, and become increasingly resilient, self-reliant, innovative and responsible.

5. We expect a lot from volunteers. Volunteers have only a certain amount of time to give. Anything over and above that can cause stress and burn-out. The lack of young members was discussed in one of our workshops. Skilled assistance is essential for new groups to get up and running. The level of form filling and paperwork that volunteers in an SEC group are faced with, for example, can be

daunting and paralyzing. There needs to be a way that this burden is either lifted, or carried by an intermediary person.

6. Core funding is lacking and needs to be addressed. Multi-annual core funding, for administrative costs and for staffing, is essential for groups to expand and to function effectively SEAI offers limited mentoring, technical, and networking support through its SEC scheme. Funding is also available to pay an external Project Manager to coordinate, manage and deliver SEAI BEC projects. But this is not enough - there needs to be a clearly defined source of core funding.

7. Are we talking up community ownership? What is obvious from our recent workshops with existing community energy groups is that the same challenges and barriers that existed in 2000 – e.g. lack of core funding, lack of feed-in tariffs, difficulties gaining planning permission, securing investment finance, and access to the grid – continue to exist in June 2018. All of the community energy groups in our study want to produce their own renewable energy but face too many financial and infrastructural barriers for this to happen. Therefore, until there is clarity about addressing the barriers, it is unhelpful to 'talk up' community ownership of energy.

8. A lot can be learned from evaluation of community energy experience Experimentation is important as it allows for the trialing of new social innovations but it will only be truly effective if coupled with a mechanism for evaluating and learning from successes and failures. Successes should be replicated, past mistakes should not continue, and barriers that existed years ago should not remain in place.

9. National leadership is key to give community energy legitimacy and to help with public engagement. Our research has shown that engaging people on climate action is difficult, even for local community energy groups. There should be a sense that 'we are all in this together'. People need to hear political and business leaders and government ministers from all departments (not just the usual voices from environment, energy and weather), talking about climate change and the energy transition, and they need to hear, and see, what they are doing about it. We see the recent positive leadership pronouncements on climate action and the 2018 Renewable Electricity Support Scheme as an indication of alignment between community needs and policy development.

10. Community energy does not guarantee community acceptability or acceptance. Community ownership of energy does not necessarily mean that local people will not have concerns about the proposed renewable energy installation. Plans by the Aran Islands Energy Co-op to install a wind generator have been held up by local concerns around siting. Local planning objections were made for both Phase 1 and Phase 2 of Templederry Community Windfarm. National leadership, extensive local engagement, and clear community benefits are required if local opposition to wind (and possibly) solar, developments, even if they are community led, does not continue to be a problem.

RECOMMENDATIONS

1. Strong, continual and visible national leadership on climate action is critical to encourage energy citizenship

2. A range of approaches to support and encourage community energy should be developed, which respond to the varying capacities of different communities

3. Mentoring in community development and community engagement are currently lacking and should be provided as essential complements to technical and financial mentoring

4. Reliable, multi-annual sources of core funding for community energy groups are currently lacking and should be made available

5. Funding and governance of community energy schemes should allow for exploration, experimentation and cross-fertilisation

6. Mechanisms for evaluating community energy projects should value social capacity development, alongside CO_2 and KWh savings

7. Approaches, which have proven to be successful should be encouraged and replicated

8. Existing barriers to community energy should be addressed, such as the lack of feed-in tariffs, and difficulties in gaining planning permission, securing investment finance, and obtaining access to the grid